THE SOCIO-CULTURAL INFLUENCE IN COMMUNITY PREPAREDNESS FOR ENHANCING POST-DISASTER CAPACITY
(CASE IN NORTHEAST ALOR DISTRICT)

Dina Ruslanjari, Awaluddin Ilyas, Bayu Kurnia Adhi and Resti Kinanthi
Magister of Disaster Management
The Graduate School of Universitas Gadjah Mada,

Email: dienarus@ugm.ac.id

ABSTRACT

his paper aims to find and analyze the influence of socio-cultural factors of the local community in a capacity enhancement of disaster preparedness to Tface the possibility of a future earthquake event. The disaster preparedness components which in this paper embodied as a knowledge and experience variables were also being analyzed to seek for its influence in disaster capacity. The socio-cultural factors of the local community were analyzed and found by conducting quantitative method with questionnaire tool as an instrument and later scored by weighting process. The multiple linear regression analysis was used to define the socio-cultural factors that have influence in disaster preparedness process which utilized as an input in creating a model for future community capacity enhancement. The social institution came out as the only factor in socio-cultural that has the significant influence to capacity enhancement. In addition, the variables of preparedness component which are "the preparation against disaster" and "group membership" have a significant influence in capacity based on multiple regression analysis. Hence, the three variables that respectively found significant for the capacity enhancement process were taken as an input for strategic enhancement model. In order to achieve effective capacity enhancement based on this paper, the social institution which weakened due to the emersion of nonvoluntary assistance (money-induced) between the local people can be distinguished by focusing in the mind-setting of the local teenager to act voluntarily as the form of togetherness between them. In conclusion the enhancement of social institution itself has to be adjusted with disaster drilling and preparation against future disaster event.

Keywords: Socio-cultural, Community preparedness, Capacity enhancement

INTRODUCTION
Alor Earthquake and Disaster Management

Alor Regency is one of the regency in East Nusa Tenggara Province (NTT) which geologically included in the tectonic area of Banda Arc that characterized by high seismic level (Ibrahim & Subarjdo, 2005; Ngadmanto, 2010). Based on the seismograph recording and analysis from Indonesian Agency for Meteorology, Climatology, and Geophysics, there are 248 event of significant earthquake happened during 30 years period in Alor Regency which four of those event were devastating earthquake and had been causing a big number of physical and human casualties.

The seismic activity in Alor Regency is triggered by the subduction of Indo-Australia plate that penetrates the Eurasian Plate which marked by the existence of oceanic trough on the east side of Timor Island which also known as Timor Trough. Alor Regency also found susceptible to earthquake due to the existence of Flores Thrust and Wetar Thrust which formed from the subduction of Eurasian Plate towards Indo-Australian Plate. Flores thrust and Wetar Thrust were the triggers of massive earthquakes in East Nusa Tenggara (NTT), including the Flores earthquake and Tsunami that occurred on 12 December 1992 that causing hundreds of casualties and Alor Earthquake in 1991 and 2004 that causing dozens of casualties (Daryono, 2011:2).

Nurjanah, et al (2012) believes that disaster happened because there is a direct interaction between hazards and vulnerability. Carter (2008:19) explains that the characteristic of disaster can be seen from several events. The First is the disruption towards normal circumstances, usually happened in sudden time, unpredictable and dispersed. The second is when that event is having impacts on human's life, this impact can be defined as loss, wounds, suffering, and health disruption. This event also must be impacting social structure, like damaging governmental system, building, communication and public services as well as causing local people to require shelter, food, clothes, aid and social protection. The government and local people who live in vulnerable area of disaster need to identify and understand the characteristic of disaster that possible to occur in that area. The identification of disaster characteristic is an effort to embody mitigation process and minimize the impact. One of the main reason disaster happened in Indonesia is the incapability of people to understand the characteristic of disaster hazards (Nurjanah et al., 2012).

Disaster Management is categorized in three phases; pre-disaster, during a disaster, and after a disaster. In this pre-disaster phase, mitigation and preparedness are the activities that conducted and connected respectively. Preparedness defined as activities that enable government, organization, society, community and personal actor to react in swift fashion and effective. The formulation of disaster management strategy, maintenance and personal training of disaster response's actor are also parts of disaster preparedness (Carter, 2008:22-23). The community preparedness is one of the key activities that needs to be prepared to minimize risk when the disaster occurs, in prior to the actions of the government institution.

Disaster Preparedness

Community preparedness is the part of mitigation process that influenced by disaster's knowledge and experience. The factors that influence knowledge in a community are socio-economic, culture (customs and religion), as well as education (Vedwan, 2006:6). The United Nation (1970) in Hossain (2013:161) defines community participation as the collective action by the various strata of people or interest group. Hossain (2013) added that community participation also a dynamic group which its members contribute, share or are influenced by the interchange of ideas and activities towards problem-solving or decision making. In this case, the participation of community in creating preparedness against disaster is important because the implication of the activity is beneficial for them. The low knowledge of disaster will influence the level of community preparedness in facing disaster. The preparedness itself defined as a serial of activities that conducted to anticipate disaster impact through management

with effective and empowering steps (Indonesian Act number 24 of 2004). The community role in disaster preparedness will be crucial. Evidence shows that preparedness is indeed can reduce the casualties and damage of disasters, in example of devastating cyclone of 2007 in Bangladesh were reduced with early warning through electronic media and remarkable job of volunteers in warning the people and help evacuating them earlier (Hossain, 2013).

Kenneth Hewitt (2009:7), explain in the Synthesis Report from Global-E Conference that the concept of disaster preparedness is to give strength and resources for the local community to take part in reducing vulnerability and safety standard. The consideration of human rights and initiative are the right approach to ensure that local knowledge is not used in an abusive way and also would induce full participation from the risked community. The preparedness action is conducted in the scope of disaster risk reduction that intended to build the capacity needed for organize the entire emergency situation efficiently and to achieve a mannered transition from the response phase to continuous recovery (UNISDR, 2009:21).

The Social-Culture as Important Component in Disaster Preparedness

Cadigan (2008) in Sanyal and Routray (2016:101) explain that social capital own an important role in the disaster reduction phase, both before and after disaster occur, especially in community level where this resources could mobilize for mutual interest. This paradigm is happening due to the shift in concept of disaster management that transform from relief oriented reactive approach to a more proactive risk reduction oriented approach (James, 2012; Sanyal, 2016:102). The existence of social capital as the essential factor in disaster management can be analyzed from the Japan earthquake event in Hanshin-Awaji (Kobe), which shows more participation of local people and public community rather than the local government itself. Nakagawa and Shaw (2004) in Joshi and Aoki (2013:102) explain that the existence of a leader in one social group who is decently used his/her authority could bring more swift and effective reconstruction process. Furthermore, still in Joshi and Aoki (2013:102), Kilby (2008) also added that the trust and social capacity that build through community network are able to create an effective response of local NGOs against tsunami in India.

WDR (2014:13) explain that culture/custom is a relevant factor and influence how people perceive and act accordingly to the risk that threatened them. WDR (2014:186) also explain in specific that there are three reasons why culture/custom is important as a consideration in disaster risk reduction. The first reason is considering that culture/custom is what the community believed which determine their action and behavior towards disaster risk and occasionally had become an obstacle to disaster risk reduction due to the reluctant of local people to mitigate themselves (accepting risk as God's will). The second reason are the opposite from the first one, the culture of local people could support the disaster risk reduction but sometimes has been ignored by the concerned institution, the togetherness and faith could bring people to work collectively and is a crucial factor in creating a swift emergency response during the disaster event. The final reason is for the most part of a community, culture is an intimate part of their daily life, embedded in how the utilize the available resources and how they interact socially.

Rapoport (1969:11) explain that the living environment of one society has to reflect socio-cultural strength, which generally divided as belief, family structure and clan, social institution, livelihood and social relation. The cultural transformation is a process that occurs in one culture of a society which happened in a specific period of time (Soemantri, 2011). Culture can be defined as all the efforts and activities of human in changing and utilizing natural resources. The social transformation includes norm transformation, social value system, behavior patterns, social stratification, social institution, etc.

In parallel with what described by Ruslanjari (2010:700) in "Local Wisdom's Role of Earthquake Disaster Reconstruction Swiftness in Multi-Religious and Mono-Religious Village", it is revealed that the existing social institution/group which related to religious activities is enhancing the swiftness of rehabilitation and reconstruction process. This group is routinely conducting worship activities as part of devotion to their religion. The social institution/group can be embodied as the group of women who gathered to collectively learn religious recitation and conduct social activities (arisan), the religious group of male that usually held yaseen's recital as well as dzikir and tahlil, berzanzi, and piwunan. This social institution/group which create intensive gathering between people are indeed bonding the togetherness between them to collectively supporting each other and rely upon God's provision with faith and endurance which could boost the process of reconstruction and rehabilitation.

On the otherwise, the social institution/group that live in multi-religious culture are leading to religious, development and social sector. The local institutions in multi-religious culture are build to achieve the collective purpose. The example of this institution are farmer group, livestock group, church organization, the group of women who gathered to collectively learn religious recitation and conduct social activities (arisan) and yaseen's recital group which conducted privately could not support the victim's rehabilitation.

Hatu (2011) in Alhadi and Sasmita (2014) explain that the transformation of a society is not an extraordinary situation, in other words, the social and cultural transformation is a general symptom, because every part of community always tends to changed, there are no community that not developed even though the development itself not always occur in the same sector/section and every community has their own way to accept that changes. The direction of the community transformation is multi-dimensional and the reason of transformation comes from the outside and inside the community itself. The socio-cultural transformation of the community is caused by several factors, including knowledge and technology development, transportation and communication development as well as the urbanization. The people who lives in village is a pure example of a community that still holding on solid togetherness but as the development in social life growth this solidarity beginning to diverse from its origin.

Alhadi and Sasmita (2014) explain that the preparedness activity for a community with high homogeneity level is crucial due to the large population number. The intervention towards the community in high homogeneity level relatively easier to conducted in short period of time due to the background diversity of local people. This paper will analyze the socio-cultural factors to find a strategy for capacity enhancement based on local resources.

The Method

This paper is a concurrent research which combines quantitative and qualitative method. Northeast Alor District was purposively taken with a consideration that in Alor earthquake (2004 and 2015) this area is the most impacted district with the largest casualties and most devastated housing complex. Bukapiting is the capital city of the Northeast Alor District and consists of eight villages which are Waisika, Kamot, Air Mancur, Taramana, Kenarimbala, Pido, Lippang and Nailang Village. The villages that being chosen as the final research location are Kamot, Waisika, Airmancur, and Taramana that located in the coastal area. The unit analysis in this paper is the head of a family that taken by simple random sampling. Based on the tables for determining the sufficient sample size by Issac and Michael (Sugiyono, 2014), from 1,214 population of family head, 145 is taken as the sample (Table 1).

Table 1. Research Sample

No	Villages	The number of sub-villages	Population (the head of a family)	Samples
1.	Waisika	4	610	72
2.	Kamot	2	231	28
3.	Air Mancur	2	178	22
4.	Taramana	2	195	23
	Total	10	1.214	145

The data in this paper were obtained from the interview with chosen respondents by using the questionnaire as an instrument and focused group discussion (FGD) to create a mutual agreement with the local people regarding the research conducted. The indicators and variables used in this paper are presented in Table 1.

Table 2. Research Variables and Indicators

No	Indicators	Components	Variables	Data Type
1.	The socio-cultural of local community	Social and Cultural	Trust	Qualitative
			Social Value	Quantitative
			Social Institution	Quantitative
			Social Relation	Quantitative
2.	The local community capacity	Knowledge	Disaster Knowledge	Quantitative
			Response towards earthquake event	Quantitative
			Perception against disaster	Quantitative
			Access to disaster information	Quantitative and Qualitative
		Experience	The disaster impact on household economy	Qualitative
			The disaster impact on social structure	Qualitative
			The disaster impact on human	Qualitative
			disaster drilling/training experience	Quantitative
			Disaster relief aid from local government	Quantitative
3.	Preparedne	Preparation against disaster		Qualitative

| ss | Disaster training/drilling | Qualitative |
| | Group membership | Qualitative |

Source: Literature Study and Analysis (2016)

The acquired data then scored using the parameter that has been determined before. The scores that extracted from each respondent then classified into three classes; low, medium and high. The multiple regression analysis is used to analyze the variables of the socio-cultural factor, as well as the preparedness component that influences the community capacity in facing earthquake event. The strategies to enhance community capacity towards disaster concluded from the multiple regression analysis and come as the final result in this paper.

RESULT AND DISCUSSION
The Socio-Cultural Variables that Influence Community Capacity in Facing Earthquake Event

Rapoport (1969:12) explain that socio-cultural factors can be categorized as "trust", "social value", "social institution", and "social relation". The variables of socio-cultural components were packed in a serial of questions that extract perspective of local people and the current information regarding the possibility of these components to enhance community capacity against disaster. The socio-cultural factors of local community respondents in Kamot, Waisika, Airmancur, and Taramana village were scored by using questionnaire instrument that resulted in high level of "trust", "social value", "social relation" and a medium level of "social institution". The result is presented in Table 3.

Table 3. The Scores of Socio-Cultural Factors

No.	Variables	Average Score	Category
1	Trust	2.44	High
2	Social Value	2.93	High
3	Social Institution	1.19	Medium
4	Social Relation	2.09	High
	Total	**2.16**	**High**

Source: Primary data analysis (2016)

These four variables then analyzed to find its influence towards community capacity in facing earthquake through multiple regression analysis. The results of multiple regression analysis for these factors are shown in Table 4.

Table 4. The Result of Multiple Regression Analysis

Variables	B	T	Sig	Result
Trust	-0.047	-1.042	0.299	NS
Social Value	0.141	1.813	0.072	NS
Social Institution	0.115	3.449	0.001	*
Social Relation	0.062	1.100	0.273	NS
(Constant)	1.420			
R Square	0.111			
Adjusted R Square	0.086			
F Count	4.369			

Note : * = significant to α=5%

NS = Non-significant to α=5%

Source: Primary Data Analysis (2016)

Based on the multiple regression analysis result, the regression equation then created as shown below.

$$Y = 1.420 + 0.115X_1$$

Note:

Y= Capacity

X_1=Social Institution

From the multiple regression equation, it can be explained that.

a. Adjusted R-square value (determinant coefficient) is one of the specific criteria that determine a regression equation to be reliable. The adjusted R-square value is range between "0-1", which means that if the result's value is approaching "1" then the regression model can be concluded as reliable. Based on Table 4, it is known that adjusted R-square value is 0.086 which explained that 8.6% of capacity variables can be determined by "social institution" and the 91.4% are determined by variables outside this model.

b. F value is the comparison between Average Square of regression and Average Square of residue. Based on the analysis conducted, the F-count value is 4.369 and F-table is 2.668. The result which shown that F-count > F-table, indicating that independent variable of "social institution" is truly affecting the capacity towards disaster.

The following discussions analyze the factors that affecting community capacity to face earthquake disaster in four villages of Northeast Alor District.

Social Institution

Based on Table 4, it can be concluded that the coefficient regression of variable "social institution" is 0.115 with 0.001 significant value which below significant threshold (α=5%/0,005), T-count is 3.449 and T-table is 1.976. T-count > T-table, in that order hypothesis, is accepted. The variable of "social institution" is truly affecting the capacity towards disaster. The stronger value of "social institutions" in the community the more powerful its capacity to deal with disasters. Figure 1 shows the graphic of social institution in affecting community capacity in facing an earthquake.
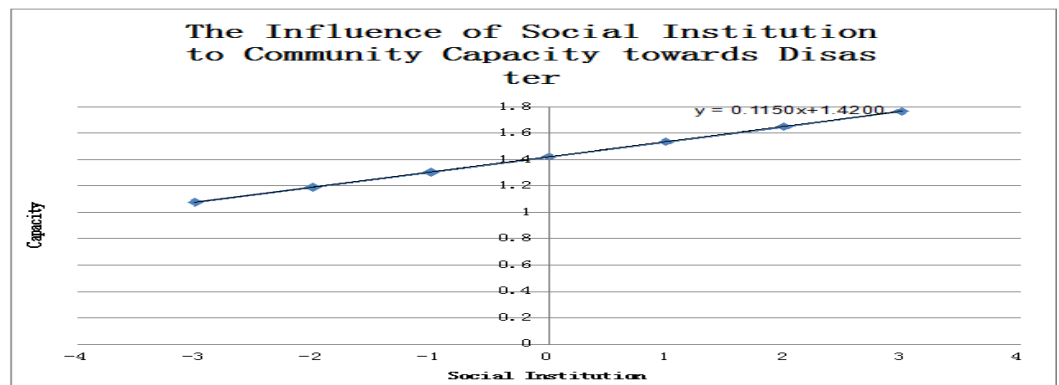

Figure 1. The Graphic of Social Institution in Affecting Community Capacity towards Disaster

The Influence of Preparedness in Community Capacity Enhancement to Face Earthquake Disaster

Sutton and Tierney (2006:3) explain that in preparation against disaster, the community response is the crucial steps in returning the condition to zero

accident (the condition before the disaster occurred). The variables that used to measures the influence of preparedness in capacity enhancement are "preparation against disaster", "disaster training/drilling", and "group membership". These variables were packed in several points that used in questionnaire instrument to find the personal information of the respondents regarding their preparedness towards disaster. Table 5 shows the scoring result through the three variables.

Table 5. The Scores of Preparedness Variables

No.	Variables	Average Score	Category
1	Preparation Against Disaster	1.78	Medium
2	Group Membership	1.25	Medium
3	Disaster Training/Drilling	1.65	Medium
	Total	**1.56**	**Medium**

Source: Primary Data Analysis (2016)

Table 5 shows the medium level of preparedness variables (preparation against disaster, group membership, disaster training/drilling) for all four villages in Northeast Alor District. The variables which were shown in Table 5 then being analyzed to find its influence to community capacity in facing earthquake event through multiple regression analysis. The result of the multiple regression analysis of preparedness variables to capacity resulted in a significant value of "preparation against disaster" and "group membership" variables. The multiple regression analysis is presented in Table 6.

Table 6. The Multiple Regression Analysis of Preparedness Variable to Capacity

Variables	B	t	Sig	Result
Preparation against disaster	0.124	3.007	0.003	*
Group Membership	0.092	2.946	0.004	*
Disaster training/drilling	0.064	1.485	0.140	NS
Constanta	1.560			
R Square	0.202			
Adjusted R Square	0.185			
F Count	11.879			

Note : * = significant to α=5%

NS = Non-significant to α=5%

Source: Primary Data Analysis (2016)

Based on the multiple regression analysis result, the regression equation is shown below.

$Y = 1,560 + 0,124 X_1 + 0,092 X_2$

Note:

Y= Capacity

X_1= The preparation against disaster

X_2= Group Membership

From the multiple regression equation, it can be explained that.

a. Adjusted R-square value (determinant coefficient) is one of the specific criteria that determine a regression equation to be reliable. The adjusted R-square value is range between "0-1", which means that if the result value is

approaching "1" then the regression model can be concluded as reliable. Based on Table 5, it is known that adjusted R-square value is 0.185 which explained that 18.5% of capacity variables can be determined by "social institution" and the 81.5% are determined by variables outside this model.

c. F value is the comparison between Average Square of regression and Average Square of residue. Based on the analysis conducted, the F-count value is 11.879 and F-table is 3.056. The result which shown that F-count > F-table, indicating that independent variables of "the preparation against disaster" and "group membership" are truly affecting the capacity in facing earthquake event.

The following discussions analyze the preparedness variables that affecting community capacity to face earthquake disaster in four villages of Northeast Alor District.

The Preparation against Disaster

Based on Table 6, it can be concluded that the coefficient regression of variable "the preparation against disaster" is 0.124 with 0.003 significant value which below significant threshold (α=5%/0,005), T-count is 3.007 and T-table is 1.976. T-count > T-table, in that order hypothesis is accepted. The variable of "the preparation against disaster" is truly affecting the capacity in facing earthquake. The stronger preparation the community has the stronger its capacity in facing disaster. Figure 2 shows the influence of "the preparation against disaster" variable in capacity enhancement.
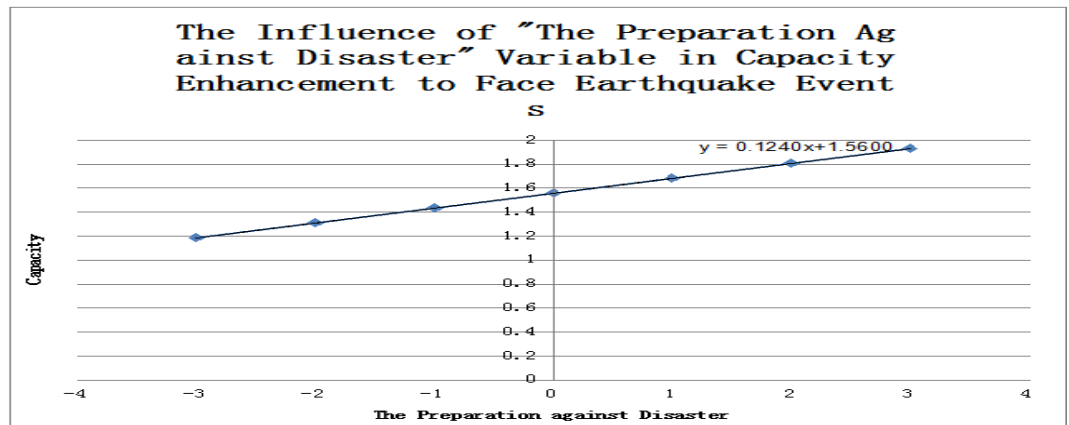
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Figure 2. The Influence of "The Preparation Against Disaster" Variable in Capacity Enhancement to Face Earthquake Events

Group Membership

Based on Table 6, it can be concluded that the coefficient regression of variable "group membership" is 0.092 with 0.004 significant value which below significant threshold (α=5%/0,005), T-count is 2.946 and T-table is 1.976. T-count > T-table, in that order hypothesis is accepted. Figure 3 shows the influence of group membership towards capacity in facing earthquake event.

The Influence of "Group Membership" Variable in Capacity Enhancement to Face Earthquake Event

$y = 0.0920x + 1.5600$

Capacity (y-axis)

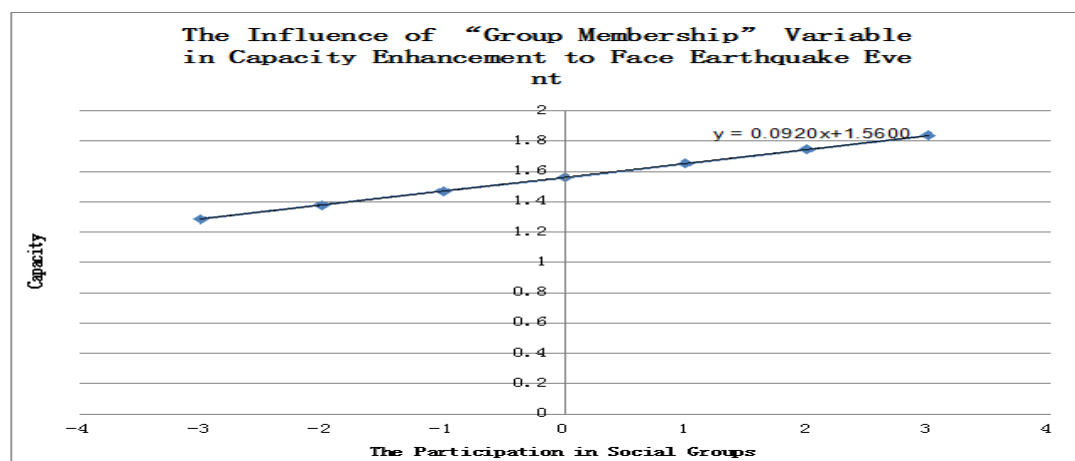The Participation in Social Groups (x-axis)

Figure 3. The Influence of "Group Membership" Variable in Capacity Enhancement to Face Earthquake Event

The Capacity Enhancement Strategy to Face Earthquake Event
The Enhancement of Social Institution Function

The analysis of possible influence of socio-cultural factors and preparedness variables towards community capacity in research location has resulted in three affecting variables which are; "social institution", "preparation against disaster", and "group membership". Foa (2009:3) explains that social institution should be the main focus of government due to the ability of it as part of social capital that could engage local community and voluntary life as well as improve environmental performance towards disaster. In addition, Foa also explains that the utilization of social institution would easily help the government to create a policy regarding the empowerment of woman as vulnerable group of disaster and strengthening local community as the emergency crisis actor to react independently and help the vulnerable group before action is taken by government and private sector. Social institution could determine the availability of local disaster organization or civil society (*karang taruna*) in one community that can support in enhancing community capacity towards disaster. The existence of this social institution is considered highly important due to its ability to stand as the base of information and access from government and/or private sector to conduct disaster education and training.

The social institution in research location still exists and has the potency to bond togetherness in these villages. In parallel with Ruslanjari (2010:698), there is a difference between the swiftness of mono-religious and multi-religious village in a post-disaster situation. The mono-religious village will gain fast physical reconstruction. The disaster reliefs are dominated by reconstruction materials and received from both local and international sector. The research location is a mono-religious village with the majority of Christian that has high solidarity due to intensive weekly gathering and religious event.

The local community is involved in the social institution such as church, *karang taruna*,cooperation group, and fishermen community. In the emergency response of disaster, the local people through their organization and community work in unity to build facilities and infrastructure, especially religious building (church) as the refugee's shelter evacuation point with the funding support of international NGOs. Religion has affected people to put

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solidarity and togetherness above everything. The local community is helping each other with togetherness without expecting any incentive in the unity of despair and losses.

Fortunately, there is a positive vibe that could induce social institution to regain its function as the place to unite people to work and live in togetherness and solidarity. Youth has an important role in nation building and development. In the Law No.17/2007 about National Long-Term Development Plan (RPJPN) 2005-2025 explained that youth development is directed to improve the quality of human resources, develop national character and force youth to involve various fields of development. The group of village youth who gather as church helper/supporter that participate in any religious occasion has somehow rebuild the togetherness among villagers, although it has not yet affecting the elders, with the empowerment program or efforts from private sector or government, this young villagers would be the right starting point to recreate social institution as an active place to unite people. The active social institution would create a better access of information regarding disaster preparedness and education for people who indeed is still lack of capacity towards disaster. The moment social institution work naturally and highly regarded as important component among villagers, the togetherness in facing critical situation during disaster event would be a strong weapon in the time of emergency response or after disaster occur.

Enhancing People to Prepared against Earthquake

Housner (1990) in Kocak et al (2015:181) underlines the important to create alternative solution to face disaster impact which led government and international organization to work in collaboration and resulted in creating policies that adopted all over the world and implemented as far as possible. Still in Kocal et al (2015:181), Kapucu (2008) explain that the ultimate goal of these policies is to create disaster-resilience community and the most important aspects of a disaster-resilience community is individuals prepared for disaster. Kocak et al (2015:181) added that taking precautions against disaster would reducing death and injuries that may arise after the disaster.

According to the survey conducted through the samples of the four research villages, the preparation of people towards the possibility of disaster event is still underdeveloped. This condition actually happened due to the infrequent disaster training/drilling from government and private sector (NGOs). The preparedness issues in the research location are actually linked with another component that being discussed in this paper, which are the non functioning of social institution. As it has been explained before, the social institution isn't working as it should be and affecting the unity of local people. The absence of social institution in the current condition is causing no access for government and private sector to take a glimpse into the capacity of this district. The absence of social institution also means no participation in social group/community. Leonard et al (2004) in Sanyal et al (2016:102) explain that working in a group with mutual trust and coordination to achieve a common target is easier than working as individual and the results achieved with the coordinated action should be terrific. Therefore the membership in a social group is crucial to achieve greater goals. In the context of disaster, greater coordination are creating greater response and structured action in facing emergency crisis during disaster event (Sanyal et al 2016:102,107).

CONCLUSION

The socio-cultural factors that significantly influence community capacity enhancement is social institution, the stronger the value of "social institutions" in the community the more powerful its capacity to deal with disasters. The preparedness factors that significantly influence community capacity enhancement are "preparation against disaster" and "group membership". The steps to create disaster preparedness based on variables that included in socio-culture component are surely a great challenge for government, private sector, and the community itself. Before taking seriously to receiving more disaster education and training, the local community has to unite by building continuous participation in social institution and become an active member of it. In that order, they will gain an ease of access to communicate and collaborate with the outside stakeholders who will give many efforts for better preparation against disaster.

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