MAPPING AND DEVELOPING STUDENTS RESILIENCE IN A RISK-DISASTER AREA

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ABSTRACT

West Lampung is one of the risk disaster coastal areas in Indonesia. The disasters having happened in the region have inevitably had serious impacts on the residents, including the children in the area. This study describes and maps the resilience of children in a disaster-prone area, West Lampung, Indonesia. In a descriptive qualitative research, the researchers investigated the resilience level of the children living in the area. The qualitative data were obtained from in depth interviews and focus group discussions involving elementary school students, teachers, and parents. The data were analyzed and categorized in order to find out the resilience level of the children. The resilience level of children living in the area, what efforts have been taken and how they have been impacted, as well what recommendations can be taken on how to develop the children resilience are discussed.

Keywords: *resilience*, *risk-disaster*, *education*

1. Introduction

Indonesia is a country passed by the ring of fire circle. This is often associated with the fact that this country is prone to natural disasters, such as volcanic eruptions, earthquakes, tsunamis and natural events other (Siagian, Purhadi, Suhartono, & Ritonga, 2014; Subiyantoro, 2010). One district which is risk-disaster and have been undergoing several times is Liwa, West Lampung, Indonesia. Earthquakes, tsunamis, landslides have struck the area for several times. The cost of damages, human victims, dying animals caused the natural disasters in the area have been undeniably uncountable. This results in the post-disaster conditions in the region for not only leaving extremely painful for the adults, but as well as the children's psychological, social and traumatic conditions for they have struggled very hard to recover from the disastrous conditions (Rusmana, 2009).

Such a condition needs more attention not only from the surrounding peoples but as well as all of us who have a good care on such a condition. In addition, government should not only responsible for assisting people materially, as well as emotionally, spiritually adequate to support for those impacted by the disasters in order to pursue their living. Psychologically, the impact of such natural disasters for adults may be less than that of children where they have to be separated from their families, friends, and from their schools. Therefore, solutions to the problems with the children psychological, social and even economic conditions should be more endeavored so that they can have a better resilience to live more positively, to be more adaptive, as well as less

traumatic by the natural disasters (Alexander, 2013; Fiksel, 2006; Subiyantoro, 2010; Utaminingsih, Abdurrahman, Kadaryanto, Saputra, & Maulina, 2015).

Resilience is essential for children who lives in prone disaster areas as they are in the development phase as children who have good resilience would be able to be more adaptive to problems that they may encounter at any times (Lestari, 2007). For some children, they may not be easily identified whether or not they are impacted by a natural disaster. However, the incidence of morbidity for the children may be always there. The onset of such morbidity in children living in post disaster areas should not be neglected as the level of trauma for the people living in such area varies. As time goes on, children morbidity can grow larger that may still continue to appear in the following years after the disaster. Children who are affected to a traumatic event may initially show a reactive phenomenon, which may continue and lead to the disorder if the children have a vulnerable personality. This phenomenon was indicated by previous studies suggesting that students or children were found to feel that they are always easily reminded by the disasters and some of them even still have nightmares about bad experience they had in the past (Retnowati & Munawaroh, 2012). This further strengthens the necessity to take a good care for all children living in such areas.

This paper discusses mapping children resilience and how their resilience have been developed in one of the disaster-prone areas, especially in coastal areas of Lampung, Indonesia, and how they have raised our attention to conduct research in the area as the objective of our research. The contribution of current research is expected to be very helpful in minimizing the risks following disasters for children living in such an area, bringing awareness to the related stakeholders of their circumstances that need more attention from all parties. Furthermore, this research is expected to give some recommendation of programs or activities as a part of the sustainable development program for the people living in prone disaster areas. In outlining the purpose and benefits, we will elaborate sufficiently how West Lampung Indonesia can be characterized as a risk disaster area and its regional characteristics.

2. West Lampung as A Risk Disaster Area in Indonesia

As widely known, Indonesia is a tropical country with thousands of islands, with its large water areas, as well as with the fact that it is passed by the ring of Pacific fires that may make it vulnerable to disasters such as volcanic eruptions, earthquakes, tsunamis, floods, hurricanes, landslides, and etc. (Subiyantoro, 2010). Frequent volcanic activities may cause volcanic earthquake, while the shift of continental plates causes a tectonic earthquake. The climate conditions in Indonesia have also led to the monsoon winds that can sometimes cause hurricanes, and while the rainfall caused floods and landslides. With such disastrous conditions, the Indonesian government have endeavored very hard in reducing or minimizing the risk of disasters, such as by conducting a program known as the Disaster Risk Reduction (DRR) program (Indonesia, 2007). The DRR program should have been disseminated to all levels of Indonesian society, especially those living in disaster-prone areas. In the level of regulations, the DRR program is strengthened by some laws and regulations in the provincial and district levels for disaster preventions. However, these regulations have not yet been fully understood and socialized well by the community.

West Lampung is one of the areas in Indonesia recognized to have some disaster-prone areas, especially coastal areas such as the west coastal areas. The region has been categorized as an area which has a high level of disaster risk, such as earthquakes, landslides, tsunamis, etc. (Figure 1) (Geospatial BNPB, 2010). This is due to a geological province of Lampung which is located in the zone of the Indo-Australian plate and the Eurasian Plate. In addition, Semangko Fault, which extends from Aceh to Lampung, is another reason why the area is so prone to tsunami or natural

disaster. From the geographic and demographic perspectives, West Lampung and surrounding coastal areas have been clearly categorized as a risk disaster area (Red colored in figure 1 means 'high risk'). All in all, the disaster resilience of the people especially children living in the region such as West Lampung need to be further taken into account.
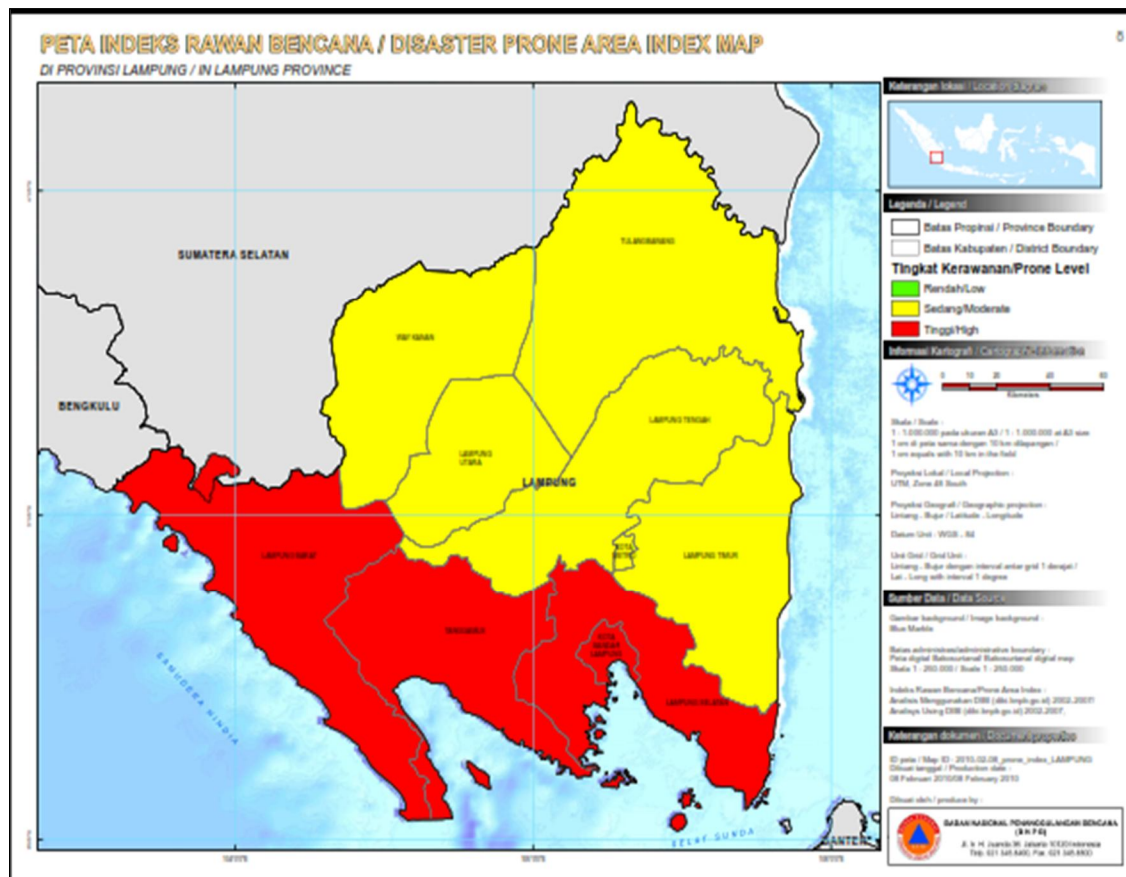

Figure 1. Red-Risk Disastrous Area in Lampung (Geospatial BNPB, 2010)

Realizing that their area is prone to disasters, the people living in the red-colored areas in the region really needs to prepare themselves to deal with disasters that may happen at any time. The ability of people to prepare and organize themselves have been associated with a disaster management effort which is formed and organized by local communities living in disaster-prone areas in West Lampung. However, the organization formed by the community so far had been less concerning with disaster management activities for children in West Lampung. This result in the problem of resilience of the people that have not much been developed, let alone with the children living there. This is because the culture of the majority of the people as well as the organization have not seen resilience as an interesting and important thing to deal with beside being busy with their daily activities. This tradition has been descended by the earlier societies which were not used to organize, to understand the roles and functions of organizations for the disaster management.

3. Risk Disaster, Disaster Management, and Resilience

Republic of Indonesia Constitution Number 24 Year 2007 in defines a disaster as " an event or series of events that threaten and disrupt the lives and livelihood caused by both natural factors

and/or unnatural factors or human factors that lead to the emergence of danger human lives, environmental damage, loss of property, and the psychological impact (BNPB, 2008)." Meanwhile, according to United Nations (UN) in Bastian Affeltranger et.al (2007: 29), a disaster is defined as a serious disruption of the functioning of a community causing widespread loss. Such loss extends human life in terms of materialistic, i.e. their economy, or the environment and that go beyond the ability of the community to cope using its own resources. Risk, in Bastian Affeltranger term, is defined as the probability of the emergence of detrimental consequences or losses to be expected such as loss of life, injury to people, disruption of property, livelihood and economic activities, or environmental damage. Such losses can be caused by the interaction between the danger posed natural or human factors as well as vulnerable conditions. Furthermore, Bastian Affeltranger (2006) revealed that strategies for disaster risk reduction could be, first and foremost, vulnerability assessment and risk assessment as well as a number of institutional capabilities and operational skills (Affeltranger, 2006).

On the other hand, according to the Constitution Number 21 Year 2008 on Disaster Management (21), disaster risk is the potential loss caused by disasters in a region and a period of time which can be death, injury, mental illness threatened, loss of sense of security, displaced, damage or loss property, and disruption of community activities. Awareness about the risks of action depends on the quantity and quality of information available and the differences in the perception of people about the risks. People are more vulnerable if they are not aware of the dangers that pose a threat to lives and their possessions.

Walker et al. (2002) defines resilience as the potential of a particular configuration of a system to maintain the function and structure of the system in the face of disorder, as well as the system's ability to reorganize themselves in connection with disruptive change pressures. If the system is public, the resilience of a community is the ability of the people to organize themselves to face pressures in the level of societal environment. Characteristics of a resilience could be identified by a) the knowledge of the risks faced by the system. They can be the amount of social pressure faced, wherein the amount of pressure put on perceptual individuals concerned in understanding the magnitude of the pressures they face and predict, how the possibility of the recurrence of social pressure in the future be of public knowledge about the potential and risks of disaster, as well as social and economic vulnerability owned. It can also be identified by b) the ability of the system to organize itself, and c) the system's ability to learn and to adapt to prepare a mechanism at risk (Folke, 2006).

Over the last two decades, Indonesia has experienced several disasters, such as tsunamis, earthquakes, flood, eruptions, and several other types of disasters. These disasters have not only caused in material losses, physical losses felt by the victims, but also psychological social and economic losses occurred caused by the disasters. Furthermore, continuous post-disaster losses may still occur for the people and the children living in a risk disaster area and certainly causes fear and anxiety for the people. Of all the victims, children are the most vulnerable groups as childhood time is a period for them to play and to grow well. When children victims have experienced a natural disaster, this could increase their anxiety and fear, let alone when they have to witness their homes and schools destroyed, their parents, brothers or sisters becoming the victims of the disaster, etc. These things could be very stressful for them and can cause prolong psychological trauma (Retnowati & Munawaroh, 2012).

These things will leave terrifying memories for them and lead to a traumatic experience which may cause the occurrence of post-traumatic stress disorder (PTSD) (Yehuda, 2002). Our role is indispensable in addressing the symptoms of children's PTSD by giving healing therapies, trauma healing, and other exciting activities which can reduce their post disaster misery and reduce the risk

of post-traumatic stress disorder because of the disaster. It is part of an effort to restore the physical and psychological condition of the victims. Increased competence of resilience for those children has to be put greater attention by post-disaster management organizations in Indonesia. Further activities need to be done in association with the post disaster management such as post-disaster mitigation, prevention, response, rehabilitation / recovery and increased resilience (Karimah, 2015).

By this, prolonged traumas caused by natural disasters for children which affect their mental and psychological development could be minimized. One solution for their psychological aspect as for avoiding prolonged trauma is by having a high level of resilience. Resilience is the ability to adapt positively to the risk or suffering experienced by a person (Goldstein & Brooks, 2013). When children have high resilience, they are able to survive in conditions as bad as anything that will happen in the future. In addition, many studies have shown that resilience is closely related to a person's success, especially academic success. This is good for school-aged children especially for those who have experienced a disaster or misfortune (Baca, 2010). The results of Mwangi et al. (2015) confirms that children resilience after disasters correlated significantly (r=0.68, p<0.05) with upper secondary student learning outcomes in Kimbau County, Kenya. The increased resilience for the school-aged children need to be mapped in terms of the psychological condition of the child. Mapping their resilience, parents and teachers at school have to be in line together with efforts to increase the children resilience for their better future.

4.   METHODS

This study was conducted in three Elementary Schools in Grade V (38 students) in Liwa, West Lampung. Those three schools were among many schools located in coastal areas. The location of the schools is nearly borderless with the beaches in the coastal areas, so that the students could see the view of the beach from their classrooms. This study was designed in a descriptive exploratory design where the researcher describes and explored the level of students' resilience qualitatively. Besides the students, the data were also obtained by triangulated the data of the parents and elementary school teachers in a focus group discussion. The elementary students, their parents, and teachers were asked to describe their reaction in the form of behavior and their psychological conditions. Furthermore, they were also asked about their communication so far among students, parents, and teachers in relation to natural disasters. This communication was particularly to identify the resilience level of the children.

The data gathered were simple notes, descriptions, and points about psychological and behavioral reactions after disasters. The gathered data were coded, categorized and analyzed in order to find out what patterns or similarity of reactions, behaviors or psychological conditions in a post disaster period. The result of categorization was mapped in such a way according to their commonalities and then it was put in the form of table and flowcharts. Finally, based on the result of this mapping, we discussed and concluded the real condition of the students' resilience level, how they have been treated ad developed in order to formulate some recommendations for giving a good care for the students living in risk-disaster areas.

5.   Results and Discussion

After collecting and analyzing the data, a preliminary picture of the students' esilience in the community could be drawn. They were indicated by their public knowledge about the risk of natural disasters, the ability of the people to organize themselves in relation to disaster management, as well as their adaptability in the community in designing a mechanism to face natural disaster. Based on the focus group discussions with the respondents, it could be concluded that their awareness of

disaster risk was still relatively low. Twigg (2007) explains that the low resilience of the people in the area was caused by their knowledge and education level. They lack of general knowledge about the risk of natural disaster, less awareness, lack of information, lack of education and training about disaster management. This was worsened by culture of the people who have not yet supported disaster resilient community, their attitudes and motivation of about the necessity of disaster management was still poor. This condition is in line with Twigg (2007) research result which states that many people in a disaster risk area have not have a high awareness of disaster management.
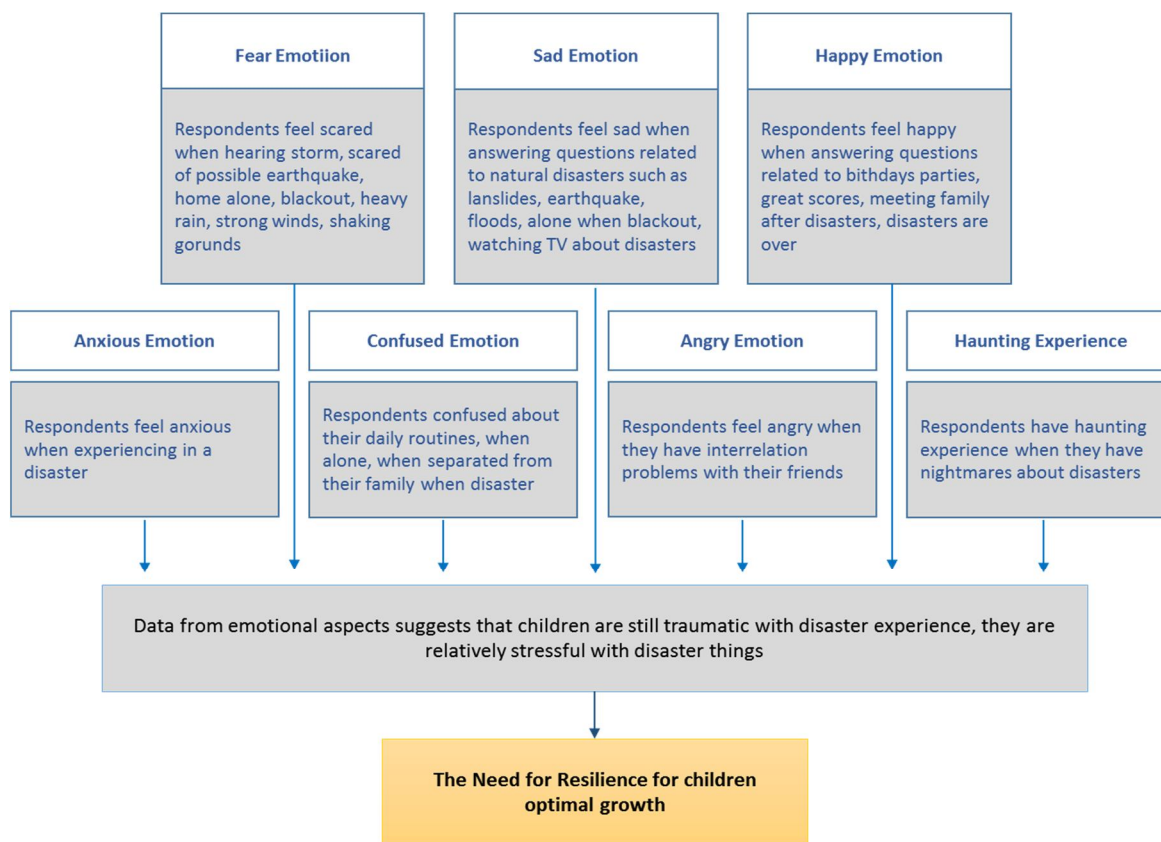
Based on the result the focused group discussion, table 1 shows how students in West Lampung had post disaster traumatic symptoms. These were taken for identifying sychological aspects in post-disaster period for pre-elementary, elementary, and teenagers. states. Table 1 suggest that symptoms appear at any age may not be the same, as discussed by Lazarus *et al.* (2002). Children could handle the post disaster psychological conditions from time to time with the help of parents and other adults who are. However, there are some children who may be difficult to deal with those conditions. The severity of the children reaction depends on the specific risk factors exposed by experiencing a disaster or an incidence, personal injury, loss of loved ones, dislocation from home or their community, the level of parental support, the level of physical damage, previous traumatic experiences or mental illness.

Table 1. Post Disaster Traumatic Symptoms at Children in Lampung

Pre-Elementary Students	Elementary Students	Teenagers
Thumb-sucking, bed wetting, depending on the parents, having trouble sleeping, loss of appetite, fear of the dark, deterioration of behavior, and withdraw from friends and routines	Irritable, aggressive, dependent, nightmares, school refusal, less concentrated, and withdraw from activities and friends	Eating and sleeping disorders, upheaval in themselves, increased conflict, physical complaints, delinquent behavior, and weak concentration

From the table above, we can see that children in West Lampung may be at risk of post disaster trauma. Those symptoms could be identified during a specified period of time and the forms may be different. Other symptoms showing post-disaster trauma could also appear when suddenly remembering disasters while playing and/or dreaming. They try to anticipate or feel that such disasters could happen again. Feeling numbness, being more emotional, and increased arousal symptoms such as an inability to concentrate and react may frequently present for children experiencing post disaster trauma. Although rare, some children may also be at increased risk of suicide if they suffer from serious mental health problems or depression. Students who show these symptoms should be referred to a mental health evaluation and appropriate intervention.

Children feelings in relation to post disaster trauma in West Lampung as illustrated in Table 1 were further strengthened with the data from simple notes during the observation that explored the chosen feeling, and it was clarified with the focused group discussion result by the parents and the

Fear Emotiion

Respondents feel scared when hearing storm, scared of possible earthquake, home alone, blackout, heavy rain, strong winds, shaking gorunds

Sad Emotion

Respondents feel sad when answering questions related to natural disasters such as lanslides, earthquake, floods, alone when blackout, watching TV about disasters

Happy Emotion

Respondents feel happy when answering questions related to bithdays parties, great scores, meeting family after disasters, disasters are over

Anxious Emotion

Respondents feel anxious when experiencing in a disaster

Confused Emotion

Respondents confused about their daily routines, when alone, when separated from their family when disaster

Angry Emotion

Respondents feel angry when they have interrelation problems with their friends

Haunting Experience

Respondents have haunting experience when they have nightmares about disasters

Data from emotional aspects suggests that children are still traumatic with disaster experience, they are relatively stressful with disaster things

The Need for Resilience for children optimal growth

teachers as indicated in Figure 1 below to suggest the need for resilience.

Figure 1. The Need for Resilience

The results of the focus group discussion also indicated whether there had been already established communication between parents and teachers, how they interact each other to solve children problems of resilience. Some of their efforts to build communication in relation to build their children resilience were 1) growing psychological conditions which prepare them to face the natural phenomena related to disasters; 2) integrating resilience related materials about the natural conditions of disaster-prone areas into their children education; 3) building better communication between parents and children for resilience development; and 4) forming disaster awareness attitude raised both at home and at school. Figure 2 describes the resilience development which is made up from several aspects. This in line with Clinton (2008) who stated that what is important is the resilience development is building basic feelings of being connected with others.

Based on the result of the focused group discussion, the children would be able to handle the crisis disaster better if they have protective factors which are skills and conditions deliberately fostered in the family and in the community surrounding them. In other words, resilience does not come from something that is far from their daily live, but of 'everyday magic' (Masten, 2001). Instead, resilience comes from the inside and the ones close to their life like family and their neighbor. Masten (2001) further concerned that children showed their resilience in their childhood

by their 1) intellectual skills and attention; 2) a pleasing personality; 3) achievement motivation and awareness; 4) lower stress reactivity; 5) The quality of care; 6) a positive self-concept; and 7) their competence to carry their childhood, academic and social aspects.
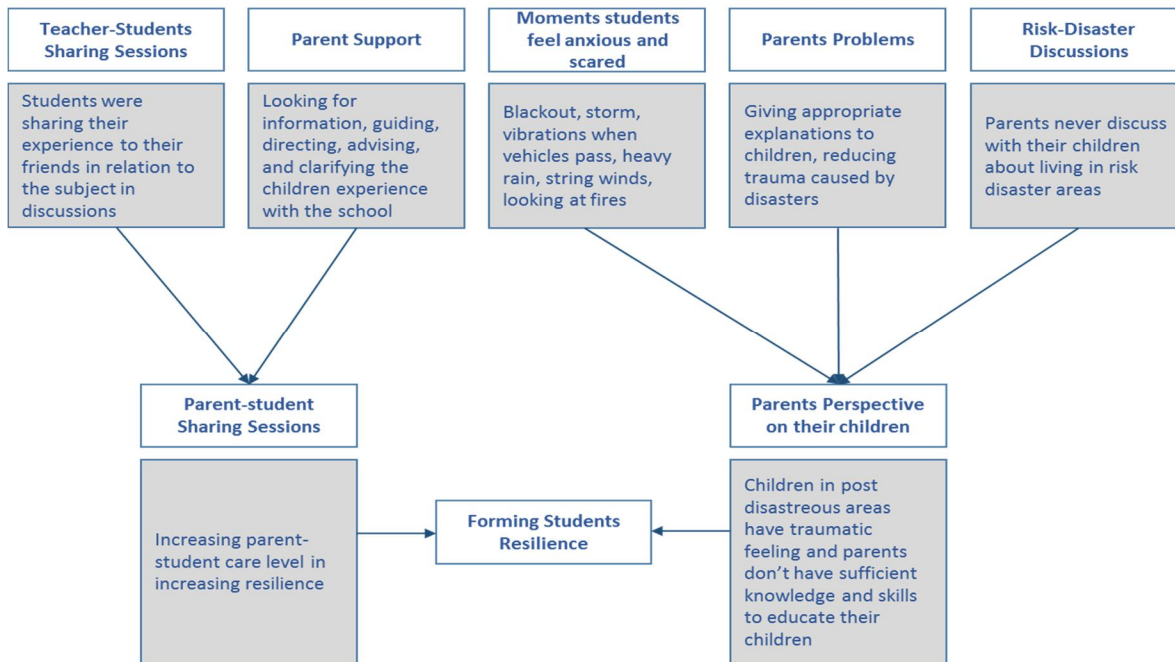

Figure 2. Students psychological condition based on the FGD result with teachers

As discussed, resilience is an aspect that cannot be built instantly, yet it requires a process, and involves the surrounding environment. Resilience should be built in as early as possible as the result of daily experience, behavior and education. That is how resilience should be developed, particularly in disaster-prone areas and make it as a strategy which has a long-term impact. Resilience would be successfully developed within the individual resilience capabilities. Clinton (2008) says that resilience is not just personalities or traits. Resilience is an interaction of complex factors, including genetic, environmental, and adaptive behavior in the face of unexpected events. Adaptive behavior would help them to cope with the demands of an environment, including self-help strategies, communication, and social skills. When children have high resilience, they would have the ability to solve problems when they have to face with problems related to a natural phenomenon. However, when students have poor ability to solve problems, they will have low level of resilience.
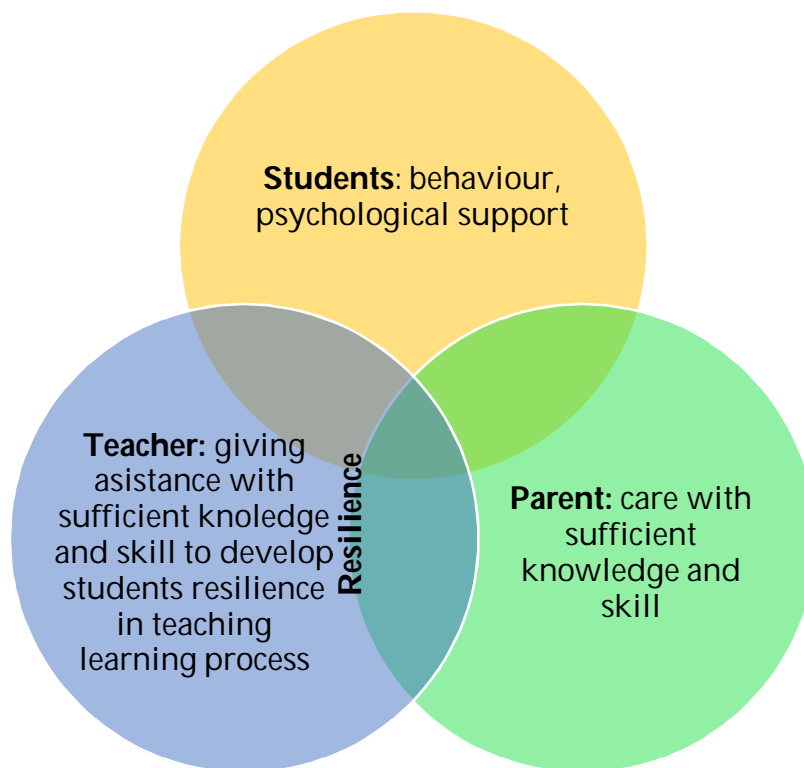
Figure 3.   Developing student resilience by student-teacher-parent collaboration

Based on the discussion between among teachers, parents and children, the people in West Lampung especially children have a high stress reactivity and their positive self-concept was poor. They lack of feeling connectedness through communication between parents, teachers and children in facilitating the development of children resilience. Clinton (2008) suggested three main ways to improve resilience, namely: (a) the need for exposure a discussion of the events associated with the disaster, (b) coping with positive and problem-solving skills, and (c) strengthening friendships and connectedness (Figure 3).

5.1 The need to develop resilience

The need to improve public knowledge about the disaster risks should be well considered. People living in prone-disaster areas need to improve their knowledge about disasters. This can be achieved through sufficient socialization about disaster risks to the surrounding communities not only by the government, but also the people living in disaster-prone areas themselves. Such endeavors could be further internalized as the process of learning to recognize and to appreciate individual norms and social values in accordance with the demands of the society's preparedness for any hazardous threats. Such internalization could form social values of the society living in disaster risk areas to have a conscious behavior of better disaster risk management (Haifani, 2008; Paramesti, 2011; Pribadi & Ayu, 2008).

In addition, disaster risk management of the people living in such area needs to be improved in order for them to be able to organize and manage themselves whenever a disaster occurs. The people's disaster risk management capacity to take actions in response to a disaster can be achieved by restructuring the organization management, formulation and jobs distributions and functions in the context of disaster management (Lesmana & Purborini, 2016). Such a program has become more

important and meaningful for the people in disaster risk regions as the existing organizational structure for the disaster mitigation and management have not functioned properly. Distributions of jobs and functions of such an organization have not been well formulated. To summarize, the need for a society living in such area to improve their capacity for disaster risk management falls by two reasons: first, to restructure the organization and both to make basic tasks and functions of the organization.

There is a demanding need to increase the people adaptive capacity of communities in preparing themselves to face natural disasters. The need to improve the adaptability of the community in a prone disaster environment shall be put into actions. Judging from previous such activities for disasters, their attention about this needs to be taken into account especially as this relate to the people's livelihood. Therefore, the work cannot be continued on an ongoing basis. In building resilience for the people in coastal communities, such aspects shall be done partially, they need to be integrated into the economic and social factors and have to become important aspects of the community livelihood in considering resilience development in disaster management activities (Guleria & Edward, 2012).

One of the feasible actions is by the promotion of green activities. Green activities are important for them because this could be a part of a prevention aspect for a better community, increasing participation, economic, and social involvement in building resilience. Green activities, such as reforestation, is expected to not only for the sake of environmental reasons, but also for economic and health values as such activities could leave a hope for a better future. All in all, with regard to the socio cultural conditions of the people living in West Lampung as a disaster risk area to develop the people's resilience, especially the children could be achieved by increasing the people's awareness about disaster risks, increasing the people's capacity to manage themselves of what to properly do whenever a natural disaster strikes their region, as well as increasing the capacity of the people about disaster risk management in areas such as West Lampung. Last but not least, the people there need to increase their adaptive capacity of the people in selecting actions to face any risks of natural disasters.

5.2 Implementing Resilience Program

The results of the FGD relating to their responses, behaviors or actions as parts of their resilience towards disaster experience indicated that (1) disaster risk management programs for the society have always been regarded as a novelty for the people, let alone for the children. Therefore, more successive endeavors for the people to be more aware and well prepared in facing potential threats or disasters. (2) Then, most people lack of knowledge and experience in organizational activities; (3) local government development plans have not taken into account aspects related to disaster risk management or mitigation. (4) Resilience development program evaluation has not become a concern either by the people or the local government.

Efforts in developing resilience needs to be in line with (1) resilience development program by the National Plan Disaster Management. This way could expand community and other stakeholders' participation in a disaster risk reduction by integrating a resilience program into educational programs through formal and non-formal education, prevention and mitigation programs, and the like. (2) Further, the residents need to be involved in activities to identify, assess, and monitor disaster risks as this way enable them to share knowledge, innovation, and education to build awareness for their own resilience. It also strengthens their disaster preparedness and increases the people's capacity to organize and restructure disaster management standard that later increases public awareness. Activities increasing public awareness on disaster risks are intended to make people more understand and more aware of disasters; characteristics of disasters, causes,

signs occurrence, prevention efforts and other aspect of precaution activities. Such knowledge is expected to advance the people living in prone disaster areas insights about disasters and to prepare preventive measures on disaster or disaster risk reduction. This should be an integral part of disaster management forums or organizations for better disaster management standards.

The disaster management approach needs to always updated by having a good collaboration with many parties. These collaborations need to be actualized and formalized in sort of community organizations or development. This organization is a form of direct intervention designed in order to make changes in a planned community on issues related to possible frequently disasters (Ife & Tesoriero, 2006). Such organization could stimulate a process of creating and maintaining a balance between the needs for social welfare and the resources (Slavin & Morrison, 2013). When the public knowledge of disasters has been appropriate and in line with expectations, the disaster management will a lot better. This better management would further form and develop into a more solid disaster management forum.

6. Conclusion and Recommendation

The resilience of children living in the prone-disaster area was found to be poor, as such efforts should be internalized and ne be adapted positively to natural disasters that could occur anytime in the area of Liwa, West Lampung. Not only the children themselves, parents and teachers living there also play a very important role in order to improve the resilience of students as most of the time they are at home and at school. The benefits obtained by the increasing public understanding of the risks of disaster, including an understanding of the characteristics of the disaster, causes, precautions and restrictions. Increasing the understanding and willingness of disaster management organizations play as an active role in disaster management. Establishment of good relations with the relevant agencies in obtaining resources that can be utilized in disaster management.

7. References

Baca, C.D. 2010. *A Review of the Literature: Resiliency and Academic Performance*. ScholarCentric: Virginia. 8 pp.

Clinton, J. 2008. Resilience and Recovery. International Journal of Children's Spirituality, 13(3):213-222.

Goldstein S. and Brooks, R. 2005. *Handbook of resilience in children*. Springer: New York. pp 13-15.

Lazarus, P.J., Jimerson, S.R., and Brock, S.E. 2002. Natural disasters. In S. E. Brock, P. J. Lazarus, & S. R. Jimerson (Eds.), Best practices in school crisis prevention and intervention (pp. 435–450). Bethesda, MD: National Association of School Psychologists.

Masten, A.S. 2001. Ordinary magic. Resilience processes in development. *Am Psychol* 56: 227-238.

Mwangi C.N., Okatcha, F.M., Kinai, T.K. and Ireri, A.M. 2015. Relationship between Academic Resilience and Academic Achievement among Secondary School Students in Kiambu County, Kenya. *International Journal of School and Cognitive Psychology*. S2:003.

Affeltranger, B. (2006). Living With Risk: A Global Review of Disaster Reduction Initiatives: ISDR.

Alexander, D. E. (2013). Resilience and disaster risk reduction: an etymological journey. *Natural Hazards and Earth System Sciences, 13*(11), 2707-2716.

Fiksel, J. (2006). Sustainability and resilience: toward a systems approach. *Sustainability: Science, Practice, & Policy, 2*(2).

Folke, C. (2006). Resilience: The emergence of a perspective for social–ecological systems analyses. *Global environmental change, 16*(3), 253-267.

Guleria, S., & Edward, J. P. (2012). Coastal community resilience: analysis of resilient elements in 3 districts of Tamil Nadu State, India. *Journal of Coastal Conservation, 16*(1), 101-110.

Haifani, A. M. (2008). *Manajemen Resiko Bencana Gempa Bumi (Studi Kasus Gempa Bumi Yogyakarta 27 Mei 2006).* Paper presented at the Proceeding Seminar Nasional IV SDM Teknologi Nuklir, Yogyakarta.

Ife, J. W., & Tesoriero, F. (2006). *Community development: Community-based alternatives in an age of globalisation*: Pearson Australia.

Indonesia, U. U. R. (2007). Undang-undang republik indonesia nomor 24 tahun 2007 tentang penanggulangan bencana.

Karimah, r. (2015). *Trauma healing oleh muhammadiyah disaster management center untuk anak korban bencana (studi kasus bencana tanah longsor di desa sampang, kecamatan karangkobar, banjarnegara, jawa tengah 2014).* Uin sunan kalijaga yogyakarta.

Lesmana, C., & Purborini, N. (2016). Kesiapan Komunitas Sekolah dalam Menghadapi Bencana di Kabupaten Magelang. *Jurnal Teknik Sipil, 11*(1).

Lestari, K. (2007). *Hubungan Antara Bentuk-Bentuk Dukungan Sosial Dengan Tingkat Resiliensi Penyintas Gempa Di Desa Canan, Kecamatan Wedi, Kabupaten Klaten.* Universitas Diponegoro.

Paramesti, C. A. (2011). Kesiapsiagaan Masyarakat Kawasan Teluk Pelabuhan Ratu terhadap Bencana Gempa Bumi dan Tsunami. *Jurnal Perencanaan Wilayah dan Kota, 22*(2).

Pribadi, K. S., & Ayu, K. (2008). Pendidikan Siaga Bencana Gempa Bumi Sebagai Upaya Meningkatkan Keselamatan Siswa (Studi Kasus Pada SDN Cirateun dan SDN Padasuka 2 Kabupaten Bandung). *KRISHNA_S_PRIBADI_-_ITB. pdf*.

Retnowati, S., & Munawaroh, S. M. (2012). Hardiness, harga diri, dukungan sosial dan depresi pada remaja penyintas bencana di Yogyakarta. *HUMANITAS (Jurnal Psikologi Indonesia), 6*(2), 105-122.

Rusmana, N. (2009). Teknik Dasar Dan Aplikasi Konseling Pasca-Trauma. *Universitas Pendidikan Indonesia. Diunduh pada, 16.*

Siagian, T. H., Purhadi, P., Suhartono, S., & Ritonga, H. (2014). Social vulnerability to natural hazards in Indonesia: driving factors and policy implications. *Natural hazards, 70*(2), 1603-1617.

Slavin, S., & Morrison, J. D. (2013). *Community organization and social administration: Advances, trends, and emerging principles*: Routledge.

Subiyantoro, I. (2010). Selayang Pandang tentang Bencana. *Jurnal Dialog Penanggulangan Bencana, 1*, 43-46.

Utaminingsih, D., Abdurrahman, A., Kadaryanto, B., Saputra, A., & Maulina, H. (2015). *Strategi Pengembangan Keterampilan Problem Solving Dalam Konteks Membangun Disaster Resilience Bagi Siswa Di Daerah Rawan Propinsi Lampung.* Paper presented at the Prosiding SNPS (Seminar Nasional Pendidikan Sains).

Walker1a, B., Carpenter, S., Anderies1b, J., Abel1b, N., Cumming, G., Janssen, M., . . . Pritchard, R. (2002). Resilience management in social-ecological systems: a working hypothesis for a participatory approach. *Conservation ecology, 6*(1), 14.

Yehuda, R. (2002). Post-traumatic stress disorder. *New England Journal of Medicine, 346*(2), 108-114.