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ONE FOR ALL, ALL FOR ONE: THE ROLE OF DAMAYAN AND BAYANIHAN IN BUILDING A DISASTER RESILIENT COMMUNITY

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ABSTRACT

Natural disasters are predominant in the Philippines especially typhoons and floods where poorer communities are affected. This study looked into the factors which promote disaster resilience among the people living in flood prone poor communities since there are only few local studies about factors which promotes disaster resilience among the Filipinos. This study highlighted how damayan (culture of compassion) and bayanihan (cooperation) are used as resources by community members in coping with the effects of typhoons and its accompanying floods through the specific activities done by the participants. Using purposive sampling employing site selection and networking selection, 10 residents from each of the three flood-prone barangays were selected as participants of the study. Interview and in depth conversations had served as the main instruments used by the researchers to gather the needed data. The result of the study showed the significance of damayan and bayanihan in disaster resiliency of the participants.

Keywords: *Damayon, Bayanihan, Disaster Resilient Community, Floods, Typhoons*

INTRODUCTION

The Philippines is a natural hazard prone country, experiencing several types of natural disaster each year because of its location and landscape. Of these, the most predominant are typhoons and floods. An annual average of 30 typhoons occur in the north-western Pacific Ocean, of which 20 occur in Philippines alone causing immense damage to life and property according to Asian Disaster Preparedness Center. In November 2013, the archipelago was hit by typhoon Haiyan (Yolanda), dubbed as the strongest typhoon to ever make a landfall. The typhoon killed over 7,000 (as of the tally by the Philippine National Disaster Risk Reduction and Management Council) and displaced over 1 million households. In recent years, the Philippines was also hit by typhoon Ketsana (Ondoy) that

submerged over half of Metro Manila, where 12 million Filipinos live, and Luzon in building-high floods, (Philippine Disaster Report, 2009). Further, the report also revealed that natural hazard risk is compounded in the Philippines by poor institutional and societal capacity to manage, respond and recover from natural hazard events. The Philippines is considered “high risk” in terms of the country’s ability to manage and mitigate the impacts of natural hazard and in part due to “entrenched corruption and high levels of poverty,” the report added. Poorer families are disproportionately affected with the effects of these natural disasters specifically typhoons and its accompanying floods. People in an area with low flooding and with better socioeconomic circumstances are more likely to cope with impacts compared to people in areas with high and sudden flooding (Paul & Routray, 2010). Poverty would make the people more vulnerable with the effects brought by typhoons and accompanying floods in such areas because of limited resources in surviving and rebuilding their communities.

Barrameda and Barrameda (2011) stated that people in poorer communities, having limited resources and outside support have learned to rely on themselves in their everyday survival by utilizing indigenous support mechanisms. In times of extreme events, they also utilized these indigenous mechanisms as social support in order to survive the disasters and in strengthening their resilience to rebuild their lives and their communities. “In the Philippines, bayanihan and damayan serve as representation of resilience in difficult situations brought about by typhoons and floods”, according to Barrameda (2011). Since the communities are all resource-poor, bayanihan and damayan are considered part of their social capital that they can utilize both in their daily survival and during extreme events”, she added. Damayan shows the community’s solidarity through compassion. It is a practice that lessens another person’s grief through being there for them. Bayanihan, also called as ‘community spirit’, is helping out one’s neighbor as a community voluntarily, without expecting any in return.

As a concept, resilience is applied in many disciplines including hazards, ecology, psychology, sociology, geography, psychiatry, and public health (Manyena, 2006; Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008). It has been defined in many ways depending on the discipline. However, the primary focus of this research is on the concept of “disaster resilience”. Researchers agree that disaster resilience is the capacity or ability of people, a group of people, a community, or a society to continue functioning in the face of a disaster and it is the ability of communities and households to anticipate and adapt to risks and to absorb, respond and recover from shocks and stresses in a timely and effective manner without compromising their long term prospects (Mayunga, 2009; GOAL, 2014). In spite of the various disasters that would strike a certain area, individuals or the people in the community who are considered disaster resilient would remain firm and continue to live their lives no matter what the

disaster bring them. In the work of Tierney and Bruneau (2007), they identified four dimensions or domains of resilience: the technical, organizational, social, and economic (TOSE). In this study, the researchers focused on the social dimension which encompasses population and community characteristics that render social groups either more vulnerable or more adaptable to hazards and disasters as defined in the work of Tierney and Bruneau (2007).

Though many studies formulated concepts of disaster resiliency, the factors that promote resilience are limited (Bonanno et al., 2007). Thus, this study used specifically damayan and bayanihan as factors that support the development of resilient communities, such as in Northern Luzon, specifically in Tuguegarao city which is one of the most vulnerable areas in the whole of Cagayan Valley region during wet season because it is mapped as a flood prone area and a catch basin of the waters from the different tributaries in the mountains surrounding the region. Yearly, the city’s constituents, especially the farmers and those living near the river bank, suffer so much due to flashfloods according to a report. Verisk Maplecroft (2015), a leading global risk analytics, research and strategic forecasting company listed Tuguegarao City as the second most vulnerable to natural hazards and Tuguegarao was rated “highly prone to earthquakes and typhoons.”

Due to high risk of Tuguegarao City with typhoons and floods, there is really a need to study the roles that damayan (solidarity) and bayanihan (communal effort) play in the lives of people especially in the poor and flood prone areas of the city.

Research Objective

The study aimed to determine the roles of damayan (solidarity) and bayanihan (communal effort) in the lives of respondents in coping with the social impacts of typhoons and accompanying floods in some of the considered poor communities among the flood prone areas in Tuguegarao, Cagayan.

METHODS

The study utilized a descriptive qualitative type of research. The informants of the study came from the three flood-prone poor communities in Tuguegarao City, Philippines. Their ages range from 30- to 90 years old with three years as the shortest stay in the locality and ninety years as the longest. They repeatedly experience typhoons and flooding. Sometimes even with continuous rain causes flooding in their area. Ten participants from each barangay were chosen through Purposive sampling employing site selection and networking selection from the general population of people in the top

three flood-prone and poor areas of Tuguegarao which was based on the list given by the City Social Welfare and Development Office. The study utilized in-depth interviews and community field walk in order to gather the needed data of the study.

The narratives and experiences of the informants were coded and analyzed to identify the themes that gradually emerged. The lived experiences of the informants is guided by Colaizzi's procedural steps (Colaizzi, 1978 in Speziale & Carpenter, 2007 as cited by Castro 2010) revealed the nature of the phenomena being studied. Colaizzi emphasized the following procedural steps: 1) Describe the phenomenon of interest; 2) Collect the participants' descriptions of the phenomenon; 3) Read all participants' descriptions of the phenomenon; 4) return the original transcripts and extract significant statements; 5) try to spell out the aggregate formalized meanings into clusters or themes; 7) write an exhaustive description; 8) return to the participants for validation of the description, and; 9) if new data are revealed during the validation, incorporate them into an exhaustive description.

RESULTS

Table 1. Concepts of Damayan and its Specific Activities among the three Communities

Concept of Damayan	Frequency	Percentage
Providing emotional assistance.	9	30.00
Providing basic needs to their fellows.	19	63.33
Treating one another as families.	2	6.67
Specific Damayan Activities	Frequency *	Percentage
Relaying the news about upcoming typhoon or flood or giving warning to the rest.	9	30.00
Offering their homes as shelter for things and those who have no other place to go.	5	16.67
	15	50.00

Sharing food, water, medicines and other basic needs to others.		
Uttering comforting words to others.	15	50.00
Gathering together and sharing of experiences or what they call "kamustahan"	16	53.33

*multiple response

Table 1 shows the concept of damayan among the three communities which is providing basic needs to their fellows and the most practiced damayan activity is gathering together and sharing of experiences or what they call "kamustahan".

Table 2. the Concepts of Bayanihan and its Specific Activities among the Three Communities

Concept of Bayanihan	Frequency *	Percentage
Helping one another willingly without expecting any in return.	8	26.67
Helping one another voluntarily.	17	56.67
Helping one another in times of disaster.	27	90.00
It comes out naturally especially in times of disaster.	2	6.67
	Specific Bayanihan Activities	
	Pre-disaster	Frequency *
		Percentage
Help in carrying the things or animals needed to be put in safer grounds.	14	46.67
During disaster		
Help in rescuing those	10	33.33

who are stranded and help in the evacuation.		
Post-disaster	5	
Help in sweeping the surroundings together.	7	16.67
		23.33
Help in repairing damaged houses.		
*multiple response		

Table 2 shows that the concept of bayanihan among the three communities is helping one another in times of disaster and the most practiced bayanihan activity is helping one another in carrying the things or animals needed to be put in safer grounds.

DISCUSSION

This study aimed to determine the roles of damayan and bayanihan in building a disaster resilient community in the three flood-prone poor communities in Tuguegarao City. As a result, damayan and bayanihan are found to be a source of strength for the participants as revealed in their responses during the interview. This can be associated with what Barrameda and Barrameda (2011) stated that bayanihan and damayan are considered part of the people's social capital that they can utilize both in their daily survival and during extreme events.

Damayan and Bayanihan is already part of the lives of the participants which they tap on especially in times of disasters which is in congruence with the result of the study of Barrameda and Barrameda (2011) in which the participants considered flooding as part of their everyday living. They are not that much familiar with the term damayan but when asked about the different ways that show solidarity, they definitely practice it. In terms of bayanihan, they define it as voluntarily giving help to their fellow. They do it in different ways possible and consider it as part of their lives already. Some said that, "kami kami nanga lang ang nandito, bakit hindi pa kami magtutulongan"(we are the only ones here, so why won't we help one another), "mahirap mag-isa o magsarili, mas okay pag nagtutulongan" (it's hard to be alone or do something on your own, it's better if we help one another). This way lessens their loneliness for they know they are not the only ones experiencing it. For them, they consider each other as families already. According to them, helping one another in times of disaster comes out naturally. It helps them recover faster which concurs with the study of Norris et al., (2007) which says, resilience does not mean that the community would not suffer from any stress, but instead a resilient community returns to functioning faster and the stress is only a passing phenomenon. It gives them also strength to survive because they know they won't face it all alone.

Without it, it would be hard for them to stand and recover from the damages they get.

Bayanihan and Damayan in Pre-Disaster Situations

In each barangay, the captain or the kagawads would warn the residents regarding the expected flood in the place and the residents would relay it to their neighbors. But the news does not reach everyone in the barangay so some households would rush saving their furniture. During evacuation, each household are busy packing the things they'll be needing before they leave their houses and some decides to stay in the second floor of their houses for the reason that they don't have any place to go. Some households with second floors offer shelter to their fellows. After assuring that their things are in safer grounds, they would help their neighbors also with carrying the things they need to save. They would help one another in moving their animals like carabaos and pigs in a safe place. These are manifestations that local people are nearly always the first responders of disaster in the emergency phase before the professional help arrives according to the study of Tuuli Valo (2015).

Bayanihan and Damayan during Disaster

Residents at some times are unprepared with the upcoming typhoons or floods because sometimes news reaches them late or the water level unexpectedly increases too much leaving the residents no choice but to evacuate their houses. With this instance, people of the different barangays have their own ways of helping their fellows evacuate. In barangay Balzain, they are just being warned by the so-called rescuers to evacuate but the rescuers do not have any things to use in rescuing which is ironic. So the residents make use of "lubid" or rope to help other victims be in safer grounds. Some would stay in someone's house with second floor and since the flood sometimes last up to 3 to 5 days, they would stay in that place, eat and sleep together like one family. They have also "watchers", who would check on the level of floodwater. Some would also roam around to check if other families are safe. This supports what Maguire and Hogan (2007) stated that a resilient community is one which improvises and innovates in response to disasters. They show their compassion and solidarity with their fellows through uttering comforting words like, "lilipas din to", "ang Diyos di nanunubok pag di kaya", "kaya natin to", at "Diyos ang bahala sa atin." These words coming from their fellow victims ignite their spirit to fight against adversity. This proves the definition of resilience by UNISDR (2005) in Hyogo Framework for Action that it is the ability to absorb and recover from shocks, while positively adapting and transforming their structures and means for living in the face of long-term changes and uncertainty.

Bayanihan and Damayan in Post-Disaster Situations

Families who evacuated go back in their houses and start cleaning the mess brought by the typhoons and floods. After cleaning their houses, they would sweep their yards and the rest of their surroundings together. At the same time, they would talk about their experiences and they do the so-called "kamustahan". Some would do it while they are doing the laundry, for them it's a way to at least lessen the burden brought by the disaster, because they have company to whom they can express what they feel. One of the sample conversations of the participant is asking his neighbor if they still got lot of things to do, and the neighbor said, "Yes, a lot still", then the participant invited the neighbor to take coffee first in his house. It was a simple show of damayan but it means a lot for them. In instances of strong typhoons where houses are destroyed or damaged, they would help one another repair or fix it.

They also rely on the food and basic needs being given to them by Department of Social Welfare and Development (DSWD) or other donors especially after strong typhoon and long days of flooding. They would inform their neighbors about it. Sometimes, the food given is not enough for the family, so some households would share also what they have to families more in need. If they have some food to share or medicines and other basic needs, they willingly offer it. This supports the study of Barrameda & Barrameda, 2011 which states that, in times of natural disasters, the people utilized bayanihan and damayan as support as well as coping mechanisms to tide over the disaster, especially in situations when external support is limited or lacking, poor people rely on themselves for survival and recovery.

CONCLUSION

Damayan and bayanihan is the foremost resort of the people in the communities under study in times of disaster for their survival and recovery. Bayanihan, which shows the volunteerism of the people in helping others, and damayan which provides emotional support and basic needs to others, help in the fast recovery of the individual and the community as well. Since these two indigenous support mechanisms are utilized by the resource-poor participants especially when external support is unavailable, it develops internal resiliency to the participants and the community as well.

Damayan and bayanihan is the source of strength of the participants which gives them hope when typhoons and floods hit them. For them, typhoons and floods are already part of their lives since it is recurrent in their

community. With this, they already gained knowledge of ways on how to survive, and damayan and bayanihan is the most relied on.

RECOMMENDATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

This study can be used by the local government unit particularly for the good of their community and can serve as a model or basis on how a community becomes disaster resilient and promote solidarity among its residents. They can also utilize damayan and bayanihan not just during disaster situations but in every activity the barangay or locality may have.

Possible extension of this study includes the effects of damayan and bayanihan in the community. It should also include a comparison of the effects of damayan and bayanihan between a flood-prone community and a flood-free community to determine what damayan and bayanihan truly contributes.

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SUSTAINABLE PLANTS FOR DENGUE AFFECTED AREAS

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ABSTRACT

The world's temperature is continuously increasing which has enormous impact in humans most especially in the increase of dengue cases. Dengue is a re-emerging disease and is one **important** viral disease transmitted by mosquitoes. Temperature is considered one factor in the increase of dengue rates in Cagayan particularly in Tuguegarao City. Thus, there is an indirect relationship between temperature and dengue. As temperature increases, there is also an increase of dengue case. This study aimed to determine the suitable plants to the dengue affected Barangays in Tuguegarao City to decrease the temperature as a factor of the increasing dengue rates. The researchers gathered the data of the dengue rates in Tuguegarao City from the City Health Office for the past six years (2010-2015). It was recorded that Ugac Sur has the highest rate of dengue followed by Caggay, Ugac Norte, San Gabriel Village, Annafunan East and Tanza. Also the researchers conducted soil analysis with the help of the Department of Agriculture to determine the soil characteristics of the dengue affected Barangays. The result shows that the ten carbon dioxide efficient plants can grow depending on the soil type and soil characteristics of the dengue affected Barangays. The study found out that the ten Carbon absorbing plants are suited in the soil type of the identified barangay depending on its soil characteristics in Tuguegarao City (1) Tanza: Bamboo Palm, English Ivy, Spider Plant, Red-edged Draceana, Rubber tree; (2) San Gabriel Village: Rubber Tree, Snake Plant, Aloe Plant, Bamboo Palm, English Ivy, Spider Plant, Red-edged Draceana; (3) Caggay: Rubber Tree, Snake Plant, Aloe Plant; (4) Annafunan East: English Ivy, Rubber Tree, Snake Plant, Philodendron, Peace Lilly; (5) Ugac Norte: Rubber Tree, Snake Plant, Aloe Plant, Golden pothos; (6) Ugac Sur: Rubber tree, Snake Plant, Aloe Plant, Bamboo Palm, English Ivy, Spider Plant, Red-edged Draceana, Golden Pothos.

Keywords: *Temperature, Dengue cases, Soil Characteristics, Carbon Dioxide Absorbing Plants, Soil Type*
