



Surmounting the Risk: Community Ties of Baseco Compound in Managing Risk

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Abstract

Baseco Compound is the most vulnerable of the vulnerable. Located in the low-lying reclaimed coastal area along Manila Bay, the community is described as an agglomeration of makeshift structures and informally laid-out residences without the benefit of the most basic public amenities. The residents are composed of mostly migrants from the countryside who have hoped for better opportunities in the megacity, but have ended up as marginalized workers feeding the market for manual and service worker demands of the different industries along the Manila's port area and other adjacent communities. Aside from being continuously threatened by displacement from their residences, they are similarly perpetually confronted by the challenges of environmental risks, such as flooding and storm surge. Recent experiences have exposed them to such vulnerabilities, raising the question on how the community of Baseco Compound is managing the reality of risk and how they can be part of the solution. The community is surveyed, using purposive sampling to determine their strategy in coping with disasters, in which statistical method was used to establish association relations between different demographic and community factors that strengthened the resilience of the community. Results of the paper indicate that despite the flimsy structure, community bond plays a stronger role in keeping the community resilient.

Key words: Manila, resilience, risk, vulnerability, community

1. Introduction

The large number of informal communities in Metropolitan Manila presents a challenge not only in terms of instituting urban policy, but more so in managing vulnerabilities of this sector which is often the most at risk among other socio-economic groups. They are distributed all over the metropolis, of which many are found along ecological corridors or rivers and streams. With the presence of industrial plants and manufacturing factories along important rivers and streams, the demand for affordable housing for workers follow, in most cases resulting to the formation of informal communities. This relationship between industries and informal settlement created a unique connection between the two in which their proximity and functional relations have become inextricably linked, resulting to spatial and environmental dilemma in providing affordable, safe and more sanitary housing for the workers. This dilemma is further confounded by the condition in which many of the areas adjacent to the rivers and streams are often flood-prone, putting more people in informal communities at greater risk.

Many of the informal communities are found in flood-prone areas. Aside from being located adjacent to ecological corridors, many of these informal communities are found along the ecological edge, where many industries are located. The presence of industries along the ecological edge is linked to terminal ports in this zone. The port area serves as a magnet to migrants and their families who found work and employment among the port facilities. Many of the informal settlement families (ISF) occupy undeveloped government land and along easements which are being tolerated by local political power since they serve as vote base during the election period. This mutual dependency has inadvertently resulted to putting a lot of lives at risk to disasters and, ultimately, poor quality of life. The subsistence lifestyle of the ISF reflects the substandard living condition that requires intervention from concerned agencies to uplift them from their condition. Their plight has often been ignored and tolerated, often attributed to the incapacity of the local government to provide the residents with decent housing and urban facilities and patronage politics.

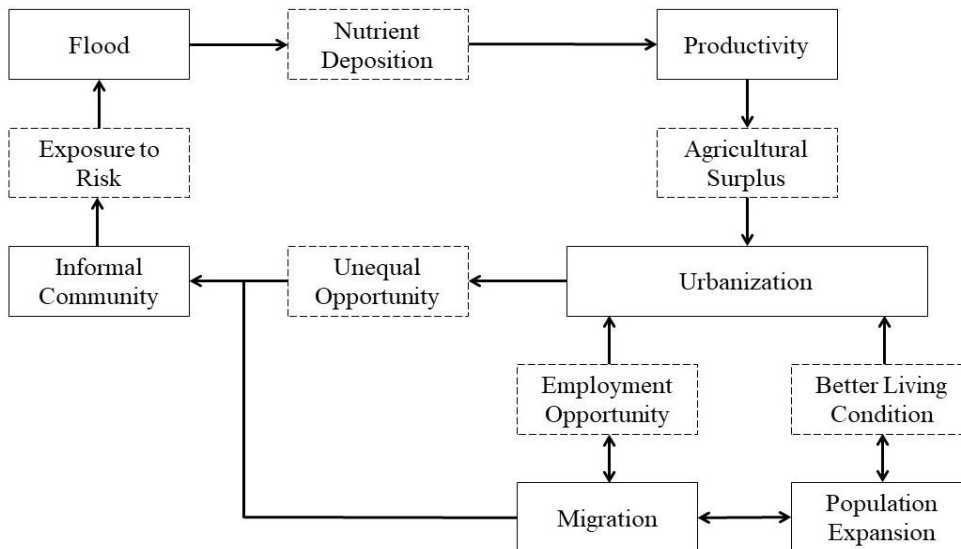


Figure 1. Flood-Urban Dynamics

1.1 Vulnerability to Disasters

Disasters, often of natural cause, result to human, property, and environmental losses. In a study by Gets (2000), he utilizes the concept of DRC (Disaster Resistant Community) with the goal of bringing human and property losses to the most minimal level during disaster by assisting communities to reduce their vulnerability to natural hazards through the application of principles and techniques of mitigation in their decision-making process. As an essential component of DRC, “quality-of life” is integrated to emphasize the creation of the most humane, environmentally and economically viable community as possible.

The Philippines has been identified as one of the most at risk countries in the world. In a research by Nakasu, et al. (2009), its vulnerability lies in the country’s location, social and economic conditions, and the problems of marginalized sector living in disaster-prone areas. The large portion of the population below the poverty line and unmanaged urban development have worsened the vulnerability and expanded the threat. Thus, there is a need for an approach that integrates (1) management of land, (2) sustainable social system to maintain the function of flood control facilities, (3) environmental measures to prevent the spread of diseases, and (4) efficient damage control for the protection of people and property. A similar study was conducted in Mumbai by Chatterjee (2010), where certain conditions are similar with Manila, particularly the risks and vulnerability of the informal community. The informal community is often characterized as having multiple socio-cultural layers and economic characteristics, exposing them to various processes of globalization and, at the same time, at disadvantaged position in accessing information.

This sector is disadvantaged because of the resulting residential and economic segregation mainly due to income inequalities that lead to lower infrastructure and physical conditions usually without proper drainage and sewage disposal and shelter, which are reflected in their flood risks and vulnerability to losses during flood events. What needs to be reflected on is how the informal community should be capacitated during and after disaster. As a long-term solution in managing risks of ISFs, measures in managing resilience should be based on the community’s resources and capacity; limiting provision of rescue and relief assistance from external agents and instead focus on the inherent characteristics of the community as its core strength. It also espouses the idea of changing the often-held belief that the informal community should be considered as composed of displaced and transitory migrants who will eventually leave the area, thereby excluding them from any long-term and formal measures to address resilience to flooding.

The need for an inclusive approach of the community, particularly the most vulnerable sectors, in formal planning to manage resilience has also been discussed by Collier, et al. (2013) using transition policy, which is based on deliberate processes that need to be communicated clearly by the “significant” actors among the stakeholders to inform and facilitate the participation of the “weaker” stakeholders”. This allows citizens to lead in the planning to determine their direction while involving planning stakeholders on the same table and platform.

The concept of urban resilience often looks into formal structures and dynamics of institutional actors, however the existing informal community network that can serve as response to vulnerability is often overlooked. Despite the perceived less capacity of informal communities to support a decent lifestyle, the strong community ties can serve as their shield against their vulnerability to flood.

1.2 Objectives

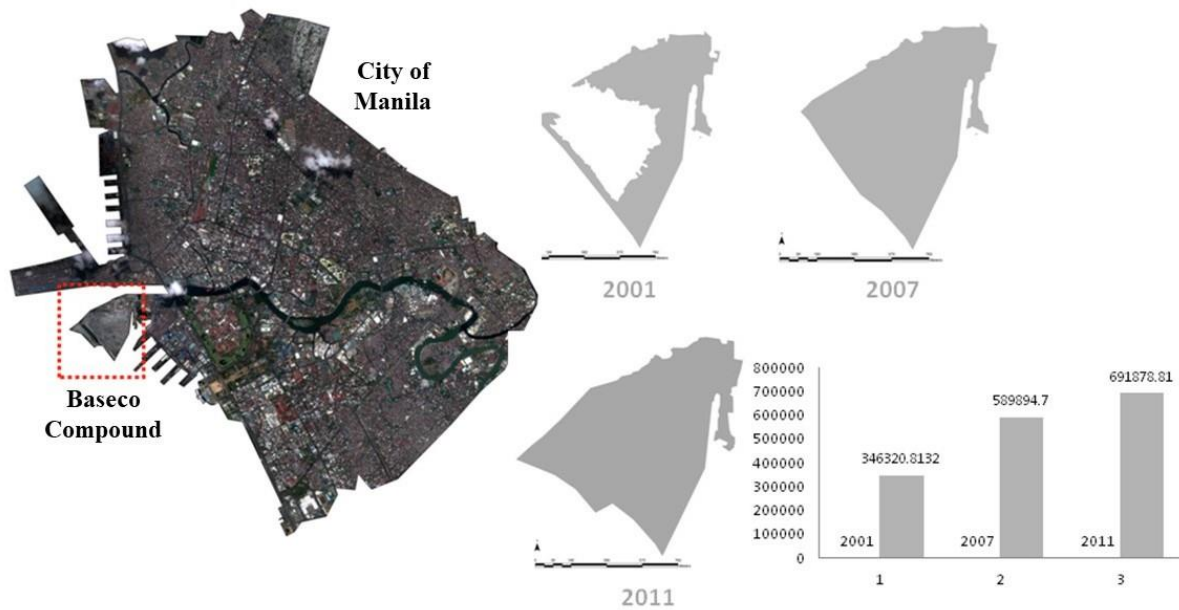
To present the social aspect in the development of resilience, a social survey was conducted to better understand the community from the perspective of its residents. The main objective of the paper is (1) to gain a humanized perspective of a community that regularly confronts the issue of flooding. This is achieved by contextualizing the people and their experiences in relation to their flood vulnerability and the history of Baseco Compound. Due to the constant shifting dynamics of the population in informal communities, it has been found that it is difficult to rely on secondary sources, thus the need (2) to collect first-hand information to be able to characterize the inherent attributes of the community that are responsible to their response to risks. Information that are not readily available from various government agencies and the local government which need to be extracted from the residents of the community including sex, educational attainment, household size, and monthly income. In order to understand their experience of flood, the following information were asked: awareness of flooding in the community, perception of the cause of flooding, having experienced flooding firsthand, worst flooding event they experienced, approximation of the level of flood, frequency of flood experienced, loss(es) incurred during the flood, necessity to leave their residence during the flood, place(s) where they evacuated to, number of days they were able to return after the flood, and problems encountered after the flood. In terms of their beliefs concerning the continuity of flooding, the community was asked about their belief that flooding will likely to continue, belief that a solution to flooding will be found, willingness to remain in the community, and reasons that will make them leave their community. In order (3) to assess the community's adaptation as part of the urban network in the management of risks, the following information were asked: assistance received from the community during the flood, assistance extended to the community, behavioral change made after the flood, means believed to solve flooding, and the government's perceived role to solve flooding. From the different means perceived to be the community's response to flooding, different demographic attributes were examined in terms of their association using Pearson Chi-square analysis. This includes propensity to create a drainage channel, belief in creating drainage channel as solution to solve flooding, propensity not to dispose garbage on drainage channel, belief that garbage worsens flooding, willingness to be part of the solution, willingness to share to the community, and willingness to extend support to the community. From all the information gathered from the community, the paper aims (4) to draw some recommendations on how to strengthen the community's resilience.

2. Methodology

The survey was conducted on April 2013 in which a two-page questionnaire was used to ask 100 respondents using purposive sampling. This means selected respondents were asked due to the following reasons: (1) lack of statistical and demographic data from the local government regarding the actual size and profile of the community; (2) to ensure the quality of responses from the respondents who have experienced flooding in the community; and (3) difficulty in penetrating other parts of the community due to security issues. The pre-selected respondents include those who are identified as local leaders, hence members of the local government office/staff were the first surveyed. The identity of subsequent respondents was referred by the initial respondents using snow-ball method. The targeted respondents, aside from local political leaders, include teachers, church leaders, social group leaders and other prominent personalities in the community. Prior to the social survey, a courtesy visit was made to the local political leaders of the community to request for permit and assistance in going around the community. The survey team was referred to the security detachment stationed in the community to provide escort for the security of the survey team.

The survey was conducted through face-to-face interaction using a survey instrument with 22 questions ranging from their demographic information, their knowledge and experience of flood and how they and their community adapted to flooding. The survey was conducted during daytime on weekends (Saturday and Sunday) due to two main reasons: (1) to be able to capture a balanced set of respondents' sex present during the survey, and (2) to minimize the chance of some potential respondents to be out in the workplace during the time of survey. The conduct of the questionnaire survey lasted on an average of 10 minutes. The respondents generally responded well and cooperated with the survey team.

The responses from the survey were tabulated and analyzed using frequency measure and Pearson Chi-square analysis in order to establish relationship between variables. Discussions based on the respondents' demographics and socio-economic data were made to conclude regarding the adaptation of the community on the issue of flooding.



Changes in Land Area of Baseco Compound within 10 Years (2001-2011)

Figure 2. Spatial Change of Baseco Compound

3. Results and Discussion

3.1 The Community

The case of Baseco (Bataan Shipyard and Engineering Company) Compound presents an interesting study regarding the adaptation of the community to flood hazard and how the residents adapted to periodic flooding. The residents are considered informal settlers based on not having land title to support their claim and on the spatial arrangement of their community. The community is found in one of the most vulnerable places in Manila, although in the disaster map¹, it is not exactly reflected as to how severe flooding is in the community. It is on a reclaimed land intended originally as a shipyard to the adjacent port area. It serves as an interface between the low-lying part of Manila and the Manila Bay. It is also found at the mouth of the Pasig River and the port area, making it a strategic location of residence for those working in the port facilities. In terms of its link to the economy of the Metropolitan Manila, it serves as low-cost residential area of workers in different industries. Within Baseco, there are no major industries found in the community except as provider of services to other areas and small-scale retail activities within.

3.2 Demographics

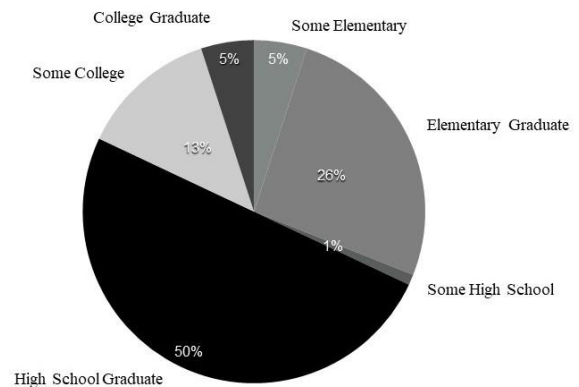


Figure 3. Educational level of residents of Baseco

Out of the total 100 respondents, the sex of the respondents is almost evenly distributed between the male and female, with slightly more female respondents than the male respondents. Most of the respondents were high school graduates with 50 percent of them having completed secondary education. More than a quarter of them (26 percent) finished elementary education while 18 percent of them have reached college level with five percent of them able to graduate from college.

The average household size is 7.26, which is large compared to the 4.6 national average². A great majority (77 percent) of them earn less than PHP 8,000 (USD 194.41, at USD 1 = PHP 41.15 as of 30 April 2011) every month.

¹ Flood Hazard Map of Metro Manila (2009) from the Philippine Government's Department of Environment and Natural Resources.

² <http://www.census.gov.ph/content/household-population-philippines-reaches-921-million>

The rest of the respondents or 21 percent of them earn monthly PHP 8,001 (USD 194.43) to PHP 15,000 (USD 364.52) while two percent earn PHP 15,001 (USD 364.54) to PHP 30,000 (USD 729.04) monthly. With a large number of respondents earning less than the estimated monthly income of poverty threshold, the community can be considered as a low-income community.

3.3 Disaster Risk of the Community

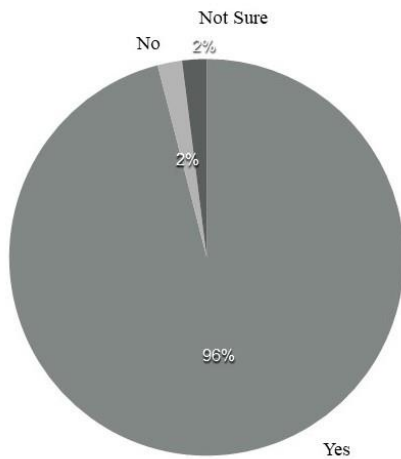


Figure 4. Community awareness of flooding

People in the community have high awareness of the flood with 96 percent of them having knowledge of flooding in their community (Figure 4). Most of them (36 percent) cited being close to bodies of water as the cause of flooding in the community. Other major causes of flooding according to the respondents are: clogged waterways (28 percent) and low elevation (25 percent) (Table 1). Other factors cited by the respondents that are not included in the choices are occurrence of typhoons and presence of garbage along waterways.

Table 1 Residents' Perception of Causes of Flooding

	Frequency	Percent	Valid Percent	Cumulative Percent
Proximity to bodies of water	36	36.0	36.0	89.0
Clogged waterways	28	28.0	28.0	53.0
Low elevation	25	25.0	25.0	25.0
Heavy rainfall	7	7.0	7.0	96.0
Destruction of forest and disturbance of vegetation	1	1.0	1.0	97.0
Others	3	3.0	3.0	100.0
Total	100	100.0	100.0	

When asked if they have experienced flood in their present community, a large number of them or 71 percent said that they did, while 27 percent declared that they have not. When asked when they experienced the worst flooding in their present community, 27 or 38 percent of the 71 respondents believe that Typhoon Ondoy (Ketsana) brought the worst flooding to their community. Other notable typhoons that brought massive floods are the Typhoon Pedring/Nesat (26.8 percent) and Typhoon Milenyo/Xangsane (22.5 percent) (Table 2). To gauge the magnitude of flood according to their personal estimate of the height reached by flood, 52 percent experienced flood that is below their waist (or approximately one meter), 43 percent experienced flood that is higher than their waist up to their chest level (or at least one meter up to 1.5 meters). Only four percent of the respondents experienced flood that is higher than their total height. In terms of frequency of flood experienced, 73 percent experienced flooding whenever it rains hard, which is often considering the tropical climate of the Philippines, while the rest experienced flooding once a year (seven percent), twice a year (8.5 percent), and three times a year (11.3 percent) (Table 4).

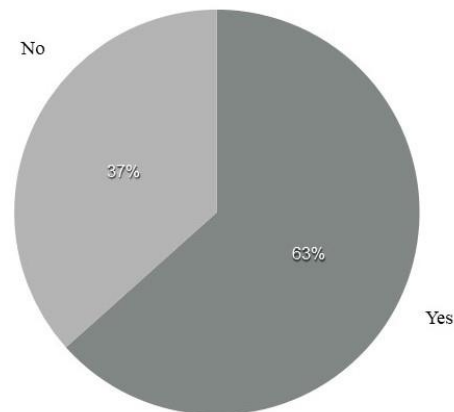


Figure 5. Necessity to leave the community during flood

Table 2 When did you experience the worst flooding in your present community

Flooding Events	Frequency	Percent	Valid Percent	Cumulative Percent
Typhoon Ondoy	27	38.0	38.6	38.6
Typhoon Pedring	19	26.8	27.1	88.6
Typhoon Milenyo	16	22.5	22.9	61.4
Others	8	11.3	11.4	100.0
Sub-Total	70	98.6	100.0	100.0
No answer	1	1.4		
Total	71	100.0		

Table 3 Loss incurred during the flood

Loss Incurred During Flood	Count	Column N %
Damaged house	33	49.3%
Difficulty in leaving the residence	27	40.3%
Damaged household furniture	9	13.4%
Loss of livelihood	2	3.0%
Death (number of deaths)	0	0.0%
Others	0	0.0%
Total	67	100.0%

Table 4 Frequency of flooding

	Frequency	Percent	Valid Percent	Cumulative Percent
Three times a year	8	11.3	11.3	26.8
Two times a year	6	8.5	8.5	15.5
Once a year	5	7.0	7.0	7.0
Others	52	73.2	73.2	100.0
Total	71	100.0	100.0	

During the flood, almost half of the residents (49 percent) experienced having their residences destroyed. About 40 percent of them had difficulty leaving their residence and 13.4 percent of them lost/damaged their furniture. None of them experienced death that can be attributed to flood (Table 3).

When asked if they need to leave their residence during the flood, 63 percent of them had to evacuate to a safer place, while the rest did not have to (Figure 5). As to the place where they had to evacuate to, 36.3 percent of them chose to go to public facility, while others decided to seek shelter in school (16.9 percent), neighbors (2.8 percent) and church (1.4 percent) (Table 5). Forty percent of them were only able to return to their residence after two days, while 24.4 percent was able to return after three days and 13.3 percent was able to return a day after they had to leave their residences. In some extreme cases, they were not able to return to their homes after 10 days after they had to evacuate. This means many of them are affected by flood events since most of them, living with minimum wage, experience disruption in their livelihood and work since they cannot go back to their routine.

Table 5 Places they had to evacuate

Place	Frequency	Percent	Valid Percent	Cumulative Percent
Public Facility	26	36.6	57.8	91.1
School	12	16.9	26.7	26.7
Neighbor	2	2.8	4.4	31.1
Others	4	5.6	8.9	100.0
Sub-Total	45	63.4	100.0	
System	26	36.6		
Total	71	100.0		

Table 6 Problems encountered after the flood

Problems they encountered after the flood	Count	Column N %
Lack of food and clothing	32	45.7%
Repair of damaged household items	31	44.3%
Loss of furniture	17	24.3%
Spread of disease	13	18.6%
Shortage of clothing	8	11.4%
Others	7	10.0%
Total	70	100.0%

After the flood, 45.7 percent of them faced the problem of not having enough food and clothing. Another 44.3 percent had to repair household items and furniture that were damaged during the flood, while 24.3 percent experienced losing their furniture and other household items. A significant 18.6 percent of them acquired some kind of disease that they attributed to flooding (Table 6).

3.4 Adaptation to Flood

When asked whether they believed that flooding will continue for the next 10 years, 70 percent of the respondents believed that flooding is likely to recur. The rest of the respondents either do not believe (10 percent) or uncertain (20 percent) about the recurrence of flood in the community. About 50 percent are positive that a solution to flooding will be found, while the other half is either not sure or does not believe that solution to flooding will be found. Despite the uncertainties of having resolution to the problem of flooding, a high 81.7 percent of the residents are willing to remain in the community. The rest of them intend to leave the community (8.5 percent) while 9.9 percent is hesitant about leaving (Figure 6).

When asked about what possible reasons can make them decide to leave their community, 40 percent cited the worsening flood condition as the main reason. The other reasons include frequent flooding (more than three times a year) with 20 percent, and contacting disease that can be attributed to the occurrence of flood (Table 7). Other reasons that could compel them to leave are demolition of their residence and better housing and job opportunity elsewhere, while others believe that there is nothing that can make them leave their community (Table 8).

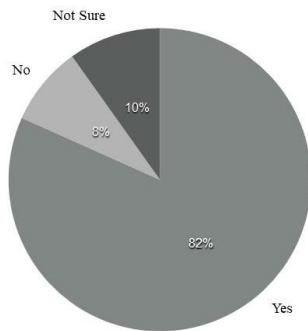


Figure 6. Willingness to stay in the community

Table 7 Conditions that would make them decide to leave their community

Conditions that would make them decide to leave their community	Count	Row N %	Column N %
Extreme flooding (higher than head level)	28	100.0%	40.0%
Frequent flooding (more than 3 times a year)	14	100.0%	20.0%
Sickness of family member due to flooding	11	100.0%	15.7%
Moving away of members of the community	6	100.0%	8.6%
Death of family members	2	100.0%	2.9%
Others	22	100.0%	31.0%
Total	70	100.0%	100.0%

Table 8 (Other) Conditions that would make them decide to leave their community

Other conditions that would make them decide to leave their community	Frequency
None	8
Demolition	6
All of the reasons mentioned	3
Free housing and livelihood	1
Better housing and livelihood	1
New house	1
No	1
No intention of leaving	1

3.5 Community Support System

As part of the community, they received assistance from other members of the community that were similarly affected by flood. The most common form of assistance are: food shared (63.4 percent), cleaning of yard (26.8 percent), and sharing of household items (18.3). On the other hand, almost 20 percent did not receive any assistance from the community (Table 9). The residents also extended assistance to their neighbors in the form of helping them clean the surroundings of their neighbors (76 percent), sharing of food (21 percent) and repair of neighbor's damaged house (15 percent) (Table 10).

Table 9 Assistance received from the community

Assistance received from the community	Count	Row N %	Column N %
Sharing of food	45	100.0%	63.4%
Clearing of yard	19	100.0%	26.8%
Sharing of household items	13	100.0%	18.3%
Repair of damaged house	10	100.0%	14.1%
Temporary shelter	2	100.0%	2.8%
Others	16	100.0%	22.5%
Total	100	100.0%	100.0%

Table 10 Assistance extended to the community

Assistance extended to the community	Count	Row N %	Column N %
Cleaning of surroundings	76	100.0%	76.0%
Sharing of food	21	100.0%	21.0%
Repair of damaged neighbor's house	15	100.0%	15.0%
Sharing of clothing article	14	100.0%	14.0%
Sharing of household items	10	100.0%	10.0%
Others	5	100.0%	5.0%
Total	100	100.0%	100.0%

Table 11 Changes made after the flood

Changes made after the flood	Count	Row N%	Column N %
Avoiding disposal of garbage to water channels	63	100.0%	63.0%
Making water channels	43	100.0%	43.0%
Raising house elevation	31	100.0%	31.0%
Moving to higher ground	4	100.0%	4.0%
Building of bridges for access	3	100.0%	3.0%
Others	5	100.0%	5.0%
Total	100	100.0%	100.0%

To adapt to conditions that frequently experience the effects of flood, majority of them or 63 percent decided not to dispose their garbage to water channels. Other measures that they made in response to flooding include the creation of possible drainage (43 percent) and raising the elevation of their house (31 percent). On the other hand, five percent of them did not do anything in response to flooding (Table 11). Many of them (69 percent) believed that removal of any obstruction on water channels is the main solution to flooding. Other solutions they believe to alleviate the problem of flooding include planting of trees (44 percent) and filling of land to elevate their place of habitation (41 percent) (Table 12).

3.6 Structural Mitigation

In terms of adaptation, people have learned to live with the reality of flood in their everyday life. Residents who have the means and are often exposed to periodic flooding construct their residence with at least two stories made of concrete in order for the second level and higher level to serve as evacuation area in case of flood. Some have raised the elevation of their residences by filling soil in their lot and by constructing stilts (Table 11).

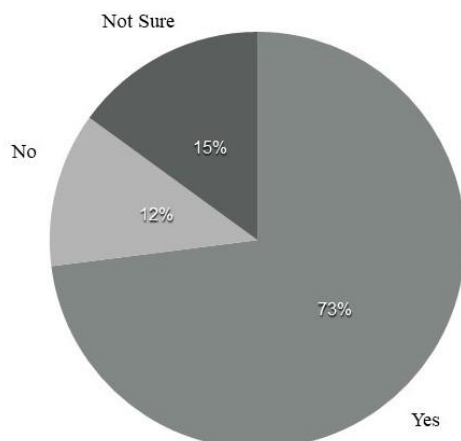


Figure 7. Willingness to be part of the solution

Table 12 Means to solve flooding

Means to solve the flooding	Count	Row N%	Column N %
Removal of items that block the flow of water	69	100.0%	69.0%
Planting of trees	44	100.0%	44.0%
Filling of land to elevate area for housing	41	100.0%	41.0%
Creation of park	0	0.0%	0.0%
Others	4	100.0%	4.0%
Total	100	100.0%	100.0%

As part of finding solution to constant flooding, an overwhelming 73 percent expressed willingness to be part of the solution (Figure 7). They believe that they can contribute in helping by avoiding the disposal of garbage in water channels (64 percent), clearing the waterways of possible obstruction of the water channels and by planting of trees (48 percent) (Table 13). These contributions by the residents in being part of the solution are somehow echoed in what they expect from the government. Similarly, they expect the government to initiate in the proper disposal of garbage (72 percent) and in making sure that water channels facilitate drainage (61 percent). They also feel that the government should be responsible in moving their houses to higher elevation to avoid the effects of flood (Table 14).

Table 13 Contribution to solve flooding

Changes made after the flood	Count	Row N%	Column N %
Non-disposal of garbage on waterways	64	100.0%	64.0%
Clearing of waterways	59	100.0%	59.0%
Planting of trees	48	100.0%	48.0%
Sharing of knowledge about flooding	15	100.0%	15.0%
Moving one's house to higher elevation	6	100.0%	6.0%
Others	0	0.0%	0.0%
Total	100	100.0%	100.0%

Table 14 Government's role to solve flooding

Means government can solve flooding	Count	Row N%	Column N %
Non-disposal of garbage on waterways	72	100.0%	72.0%
Clearing of waterways	61	100.0%	61.0%
Moving one's house to higher elevation	34	100.0%	34.0%
Planting of trees	31	100.0%	31.0%
Sharing of knowledge about flooding	25	100.0%	25.0%
Others	5	0.0%	0.0%
Total	100	100.0%	100.0%

3.7. Socio-economic Propensity to Resilience Management

In terms of establishing relationships between variables using Pearson Chi-Square Analysis, respondents who have higher average number of household members (8.9) tend to create drainage channels after the flood compared to those with less, with 5.98. Households with higher average number of members aged 0 to 12, 13 to 18 and 19 to 60 similarly decided that creation of drainage channels help in addressing flooding. They also tend to stay longer in the community than those who did not. Based on these information it can be concluded that the more household members the respondents have, the more they are likely to create drainage channels as a means to adapt to flooding. On the sex of the respondents, there is a significant association between their sex and in opting to create drainage channels in which male respondents tend to agree than the female respondents. Also, respondents with higher income tend to opt for the creation of water channels than those with lower income.

Drainage channel appears to play a significant role in their perception of being resilient to the issue of flooding. Those belonging to bigger households tend to be more concerned about the drainage channels, particularly those who have younger members and have stayed in the community longer, compared to the rest. Income and sex-based composition of the household also favor the creation of the drainage channels, making it apparent of their belief that it plays a crucial role to assure them of their safety from the onslaught of flood in the future.

Those who choose not to dispose their garbage tend to have higher average household members (7.8) compared to those who did not at 6.3. They also have higher average number of household members aged 19 to 60, average number of male members in their households, and average length of stay in their present residence.

There is a significant association between sex of the respondents and not choosing to dispose garbage on waterways, in which male respondents tend not to throw their garbage on water streams than the female respondents.

Another activity which they feel that has tremendous impact on the occurrence of flood is the presence of garbage in the waterways. Households which have greater stake in terms of safety place greater emphasis in keeping waterways free from possible obstruction by garbage. Perhaps due to better understanding on the nature of water and runoff, households with working/educated age group and have stayed longer in the community are likely to think that they need to keep the waterways free from solid waste obstruction.

Those who are willing to take part in providing solution to the problem of flooding have lower average number of female members in their households than those who are not willing to take part in being the solution. Males are likely to be willing to become part of the solution, while education and income are not significantly associated with the respondents' willingness to be part of solution. It appears that the male respondents are more proactive in taking part in finding solution to the problem of flooding. In the social context, males need to feel the responsibility on their involvement on issues that affect not only their family but the community as a whole.

The income of respondents has significant association with their willingness to share clothes to other people in the community who were affected by flood. Those with higher income are more likely to share their clothes with lower income. In addition, those with higher income tend to share food with other people who have lower income. On the other hand, their level of income does not matter on their willingness to help in cleaning up their neighbors' surroundings. This scenario is quite apparent in the case of the respondents who have the capacity to share to their community. Those with higher income have satisfied their basic needs, but their ability to share to their community is limited only to such basic needs as clothing and food.

The respondents' willingness to extend their support to other people in the community does not translate to their willingness to help their neighbors repair the house damaged during the flood, to share clothes to their neighbors, to assist their neighbors repair their neighbors' household items or furniture, and in helping them in cleaning up their neighbors' surroundings. However, it is significantly associated with their willingness to share food to those who suffer the effects of flood, in which those who expressed their willingness in being part of the solution to the problem of flood are more likely to share food than those who did not.

4. Conclusion

The community of Baseco is considered poor with their monthly income below the poverty line in the Philippines. With relatively larger household size than most Filipino families, their ability to provide the basic needs is limited and their resources are usually stretched. Although majority of them received basic education, their employment opportunity appears to be limited, thus having lower income than most average Filipino households. Almost all of them demonstrated awareness of the issue of flooding in their community, but still most of them prefer to remain in their community unless the frequency and magnitude of disaster escalate. Many of them have experienced flood first-hand in which most of them have their residences destroyed and their furniture and household items damaged by flood. After the flood, they reported to have received some assistance from their neighbors, mainly basic needs such as clothing and food, in which many of them reciprocated the gesture by extending same assistance to other people in the community. This form of assistance redistributed resources within the community, allowing members of the community to start the recovery from their losses. During the flood, many of them have to move temporarily to a much safer place, mostly public facility, in which they stayed there for about three days. After the flood, some decided to change the conditions of their environment by cleaning up the surroundings and by not disposing garbage to the waterways and by making sure that the drainage channel is clear to drain water.

Majority of them also expressed interest to be part of the solution, of which their perceived role is mostly on local level such as not disposing their garbage into waterways, making sure that the drainage channels are bereft of obstructions that can impede the flow of water, and in planting trees. They have made structural mitigation in the event of the recurrence of flooding by elevating their houses. They believe that the government needs to exert effort in similar areas of intervention. It can be assumed that their understanding of the problem is local in magnitude and does not encompass a larger region and more ecological in scope. This perspective may characterize the way Filipinos have been managing resilience in the community level. However, any long-term efforts to reduce risk and vulnerability of the people remain ineffective as long as the responses is mainly reactionary and do not include the decisions of those in most vulnerable sectors of society.

As some socio-economic factors indicated wherein income played a role in their willingness to contribute to the community after the flood, there is a need to help them alleviate certain socioeconomic indicators in able to capacitate the resilience of the community. Education may help increase income, thus making residents more likely to be part of the solution.

Special attention should be given in capacitating women of the community in order for them to be included in the discourse of community's adaptation and in contributing to the community's overall resilience. They play an important role since they comprise half of the community and they are the ones managing the everyday operations of their households. They can be organized as a group (1) for livelihood training, (2) to supplement their education, and (3) to raise their awareness on how they can contribute in the event of flood. On the other hand, the local government should intervene in terms of providing infrastructure initiatives and repair since these are not often extended by members of the community during the disaster and to help accommodate residents who need to leave their residences during flooding event.

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