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**FEATURE**

**Lessons Learned From Typhoon Washi:  
Saving the River As a Way to Healing Nature**

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**Abstract.** *Mandulog River caused a riverine tsunami when it was triggered by Typhoon Washi (locally named Sendong) during the overnight hours of December 16-17, 2011 while everyone was asleep (Ginnetti et al., 2013, p.9). The flash flood that carried with it logs, debris, and mud killed 1,278 people and displaced about 28,730 families in 35 barangays (villages). The initial damage assessment of the Iligan City Disaster Risk Reduction Management Council (2013, p. 5) was Ph 3,497,643,000.00, about US\$81.4 million. This study aimed to describe the experiences of survivors of Iligan City during the Typhoon Washi phenomenon, determine the lessons learned from their experiences, and propose strategic visions on saving the river and developing resiliency in facing disasters. The phenomenological study was based on unstructured interviews and focus group discussions for data gathered from 127 survivors who were purposively selected. The presence of logs and debris in the water and the densely populated riversides of Iligan City indicated that the main cause of the hazardous flooding was human-induced, and therefore the survivors felt responsible in restoring the river's health.*

**Keywords:** riverine tsunami, Typhoon Washi, phenomonology, Iligan City, Mindanao, Philippines

**Introduction**

People around the world watched in horror as images of massive destruction and loss of lives were broadcasted by the media when Typhoon Washi made landfall in Northern Mindanao, Philippines. This article tells stories of nature's fury which occurred during the overnight hours of December 16-17, 2011 in Iligan City, Philippines while everyone was asleep. Iligan residents were struck by a

riverine tsunami of destructive debris when Mandulog River overflowed its banks, flooded 35 (or 79.5%) of the barangays (villages), broke a bridge, and swept away entire villages (Ginnetti, 2013, p. 9). Iligan City Disaster Risk Management Council placed the casualties at 1,278 (with 712 dead and 566 missing and presumed dead), and 28,730 families in 35 barangays rendered homeless (Iligan City Strategic Early Recovery Action Plan, 2013, p. 5). The report of the National Disaster Risk Reduction Management Council (2012) revealed that the typhoon struck 13 provinces and affected 1.1 million people, leaving Iligan and Cagayan de Oro cities with the worst devastation they had ever experienced.

Taylor (2011) vividly captured the immense devastation and human suffering caused by Typhoon Washi in 35 photos. Some of the images on Iligan showed an aerial view of logs swept away by flash floods into the coastal areas, a motorist speeding past a car hanging on a wall of a house, a woman holding the dead body of her child, a woman and her child cooking food in a makeshift shelter after their house was swept away by the flood, fishermen being silhouetted as they returned to the shore after searching for missing victims, residents cleaning up their damaged homes, people sitting in a truck with coffins containing the bodies of victims for a mass burial, workers cleaning up debris from the destroyed Hinaplanon Bridge, houses damaged by the flood in a subdivision, a man shoveling mud inside a house hit by flash flood, victims queuing up for relief supplies, and a woman crying as she touched the coffin of her son during a mass burial. Taylor (2011), quoting Jason Samenow, the weather editor of Washington Post, said, “Typhoon Washi was the world’s deadliest typhoon for 2011” (para. 1). It was a chaotic situation.

Iligan is located in Northern Mindanao, which is about 800 kilometers southeast of Manila, the capital of the Philippines. It is geographically bound in the North by Misamis Oriental, in the South by Lanao del Norte and Lanao del Sur, in the East by Cagayan de Oro City and Bukidnon, and in the West by Iligan Bay. The city had a population of 322,821 living in an area of about 81,337 hectares, according to the 2010 Census (Iligan City Government, n.d.).

Iligan is known as the *City of Waterfalls*, as 23 waterfalls cascade over high mountains from rivers and streams to meet the sea at Iligan Bay. Gaspar (2012) explained that rivers flow through the city, which is why it is called *ilig* from the native word meaning, a place where rivers flow. Iligan City has 44 barangays, 19 of which are located upstream, 13 in midstream and 12 in downstream of the river. During the occurrence of Typhoon Washi, there were 35 (79.5%) barangays that were flooded: 14 (31.8%) from upstream, 10 (22.7%) from midstream and 11 (25%) from downstream (Iligan City Disaster Risk Reduction Management Council, 2013, p. 5).

The Philippines is a country constantly battered by climate-related weather catastrophies. The Global Climate Risk Index 2014 ranked it as the world's second most affected country by the impacts of weather-related events for 2012 (Kreft & Eckstein, 2013). The country has 7,107 islands and is geographically located in the Western Pacific, which is surrounded by prominent bodies of water and in the South Pacific "Ring of Fire," making it highly vulnerable to natural disasters (Porcil, 2009).

### **Review of the Literature**

This review discusses the lived experiences of flood disaster victims, Mandulog River, Typhoon Washi emergency response, and flood mitigation. On lived experiences, four studies portrayed the experiences of flood survivors, and one study was on nurses providing care to flood survivors. On Mandulog River, three studies described the river. On Typhoon Washi emergency response, reports done by international institutions during the occurrence of Typhoon Washi were examined. On flood mitigation, samples done in countries of Southeast Asia and in the Himalayas were reviewed.

### **Lived Experiences Flood Disaster Victims**

Fothergill and Peek (2006) explored children's experiences in the aftermath of Hurricane Katrina in North Dakota, what others were doing for the children to lessen their vulnerability and what the children were doing for themselves to reduce disaster impacts. Their research supported the idea that children are vulnerable in disasters and need assistance from adults, but they are also resilient and can find ways to effectively cope with disasters.

Two studies on the 2004 Thailand tsunami survivors were conducted by Roxberg, Dahiberg, and Marquius (2009) and by Roxberg, Sameby, Brodin, Fridlund, and Da Silva (2010). Roxberg et al. (2009) used a video material on the lived experiences of survivors, and Roxberg et al. (2010) used autobiographies of survivors. Both studies described the experiences of survivors who were having fun at a beach resort in Thailand when the tsunami hit. Although great suffering was felt, the studies noted that the victims set aside their traumas to help each other, showing connectedness and collaboration in time of crises. At the lowest level of misfortune, the experience became bearable when support came from both local and international friends. Cooperation shown in joining hands during this difficult time made all the difference in the recovery process.

In their book *Sa Kagabhion sa Sendong* (on the night of Sendong), Dela Peña and de Torres (2012) published stories of 14 children survivors of Typhoon Sendong (Washi) from Cagayan de Oro City, ages 8-12 years old. These children

expressed their helplessness as they underwent extreme suffering, but somehow were able to cope with the disaster.

Frank and Sullivan (2008) studied the lived experiences of nurses who provided care to those in need during Hurricane Katrina. The nurses' responses to the situation included (1) chaos, (2) reality check, (3) reorganization, (4) stabilization, and (5) planning for the future. These themes suggested that the lived experiences mirrored the phases of the nursing process.

### **Mandulog River**

Lagmay (2012) described Mandulog River as a waterway of more than 50 kilometers long. Small rivers connect to Mandulog River, forming a network of channels. During Typhoon Washi, the stream network in the upstream collected 250-350 millimeters of rainwater and swelled Mandulog River, generating a tsunami-like flash flood. The swollen river with the logs in it and the location of the communities along the floodplains were a "perfect mix for a disaster," according to Lagmay (2012, "Perfect Mix for Disaster", para. 1).

Saavedra (2009) gave a brief history of Barangay Sta. Filomena of Iligan City, the setting of her organization's mangroove project. She related that a logging company was permitted to operate in the forested area of Iligan City from 1977 to 1983. The logs were floated along the Mandulog waterway, from the upstream river to the downstream river, and onto the mouth of the river in Sta. Filomena. Several log ponds were created along the river to deposit the logs cut from the forests. Saavedra (2009) surmised that the drying up of the river in Sta. Filomena may have been the result of excessive deforestation.

Sempio, Sarmiento, and Paringit (2013) noted that the forestland occupied by the upstream barangays of Iligan City were converted into agricultural land, and that the downstream and coastal barangays became highly urbanized. The authors surmised that the changing landscape may have contributed to the destructive flooding of Iligan in 2011.

In their study on Mandulog River, Vendra, Ocampo, de Lara, Rebancos, Pacardo, and Briones (2013) found that the indigenous fish called goby was nearly extinct due to water pollution, unregulated extraction of resources, and sprawling urbanization along the riverside.

### **Typhoon Washi Emergency Response**

Three evaluation reports from international agencies described lessons learned in rendering disaster response services to Typhoon Washi survivors. Grunewald and Boyer (2013), and Duncalf (2013) described their organizations' effectiveness as well as the gaps in rendering services to the survivors of the typhoon. The gaps identified in the reports provided challenges for improvement.

### **Flood Mitigation**

To put this study in a clear perspective, it was important to explore the literature on flood mitigation. The focus here is placed on the Philippines, Southeast Asian region, and the Himalayas.

**Flood mitigation in the Philippines.** Lagmay and Arcilla (2010) conducted a study on recent disasters in the Philippines. They described three catastrophies related to extreme rainfall: the Guinsaugon rockslide of Leyte in 2006, the lahar flow of Mayon volcano of Albay in 2006, and the flooding of Metro Manila in 2008. The study revealed that these natural disasters were worsened by human activities, showing manifestations of unsolved problems of planning and development. In a previous study, Iglesias and Yu (2008) described the Save the Marikina River Program that was created in 1993. Many projects have been created, involving the community in the mitigation and rehabilitation process of the river. Evasco and Alejandro (2010) investigated the level of preparedness in disaster management of 115 flood-prone barangays. Results revealed that these barangays were moderately prepared in the prevention and mitigation phases, adequately prepared in the response phase, and poorly prepared in the recovery and rehabilitation phase.

**Flood mitigation in Southeast Asia.** Singh (2012) conducted a study on disaster management, specifically focused on in Southeast Asia. The study included Indonesia, the Philippines, and Myanmar. It was observed that the scale of disasters in Southeast Asia was usually huge that only international responses could meet the challenge. This concern has prompted the Association of South-East Asian Nations, commonly known as ASEAN, to develop their own response mechanism in managing disasters.

**Flood mitigation in the Himalayas.** Shrestha and Bajracharya (2013) conducted a study on flash flood risk management. They described the flash flood risk management program in the Himalayas. The study revealed that the level of understanding of flash floods in the Himalayas remained at the level of general concepts and processes and that the capacity to manage flash floods in terms of prevention, preparedness, response, and recovery was lacking.

The review on experiences of survivors, including children survivors and care providers revealed the vulnerability of people to disasters, but they were found to be resilient and able to bounce back. The review on Mandulog River revealed that the river was abused, and it needed rehabilitation. Little is known about recommended environmental measures for this particular river. The review on the Typhoon Washi emergency response given by international organizations has offered lessons for local agencies and organizations in handling catastrophic disasters efficiently. The review on flood mitigation studies revealed that Southeast Asian countries, including the Philippines, and the Himalayas needed improvement in flood disaster management and mitigation. This research study

aimed at understanding survivors' experiences of the riverine tsunami for river rehabilitation. Specifically, the following questions were explored:

1. What were the experiences of the survivors in the flood disaster brought about by Typhoon Washi?
2. What lessons have the survivors learned from their experiences?
3. What strategic directions were proposed by the survivors for recovery and for river rehabilitation?

### **Methodology**

This phenomenological study utilized unstructured interviews and focus group discussions to understand the issue under exploration. This section describes all the steps that took place in conducting the whole study.

### **Research Design**

In describing the experiences of the survivors of Typhoon Washi, the phenomenological approach was used to allow the participants to give full descriptions of their experience including their thoughts and feelings (Malterud, as cited in Cohen & Crabtree, 2006).

In conducting an unstructured interview, the researcher and the respondents engage in a interview without using a preset interview guide. Instead, the interviewer builds rapport with the respondents in getting them to open-up and express themselves in their own way. Unstructured interviewing was used to secure enough understanding of the phenomenon through the stories of the survivors (Cohen & Crabtree, 2006).

In determining the lessons learned and in proposing strategic directions for recovery and river rehabilitation, focus group discussions were conducted. A set of carefully predetermined questions were asked and answered in a free-flowing way. They were led by a skilled moderator, as proposed by Eliot and Associates (2005).

### **Sampling and Research Setting**

Participants to this study were purposively selected regardless of sex or age, based on any of the three criteria: they were survivors of Typhoon Washi (1) who experienced being carried away by floodwaters; (2) who were displaced for having lost their homes and/or livelihood; or (3) who lost some members of their family. There were 37 participants who willingly shared their lived experiences of the flood. There were 127 participants who participated in workshops and focus group discussions on lessons learned and on proposing strategic directions for

recovery and for river rehabilitation. These participants came from the barangays of Digkilaan, Sta Elena, Upper Tominobo, Luinab, Mandulog, and Dalipuga.

### **Data Collection**

In gathering data on experiences of survivors, the phenomenological design using a naturalistic inquiry was selected in asking participants to describe what happened to them during the flood experience. The interview began with the question: “What was your experience of the flood during the overnight hours of December 16-17, 2011 when Typhoon Washi devastated Iligan?” Follow-up questions were used to prompt participants to continue their stories in a natural, free-flowing way. As they related their stories, these were recorded in digital audio recorders reinforced by field notes and photos to capture body language and emotions.

In determining the lessons learned from the disastrous flooding experiences, participants were invited to the Climate Change and Disaster Risk Reduction Workshop. The convenors of this workshop were Iligan Medical Center College, Save Iligan Rivers Movement, Iligan Disaster Rehabilitation Coordinating Council, and Lig-ong Hiniusang Kusog sa Kabus. Speakers invited to this workshop were the Presidential Adviser for Climate Change who spoke on the role of the community in disaster recovery and in building resilience, a representative from the Iligan Rehabilitation Coordinating Council who gave an overview of climate change mitigation and disaster risk reduction management, and a representative from the Geoscience Division of Region 10 who presented risks and geo-hazard maps of Iligan and its vicinity.

A focus group discussion was conducted by an expert facilitator. Participants were asked to write down their answers on metacards and then explain their answers to the group. Discussions were recorded in digital recorders and laptops.

In proposing strategic directions for recovery and for river rehabilitation, the participants were invited to a two-day workshop entitled “Iligan Recovery and Climate Change Summit.” Convenors of this workshop were Iligan Medical Center College, Save Iligan Rivers Movement, Disaster Rehabilitation Coordination Center, Office of the Lone Legislative District of Iligan, Lig-ong Hiniusang Kusog sa Kabus, and Partnership of Philippine Support Service Agencies, Inc. Speakers invited to the workshop were the Secretary of the Presidential Adviser for Climate Change who gave his keynote address on “The Challenges and Responses for Climate Change in Iligan;” the Planning and Development Officer of Iligan City who spoke on the status of the comprehensive land use plan of Iligan City; and a consultant from Mindanao State University-Iligan Institute of Technology who spoke on the topic, “Towards Creating a Flood Prediction System for the River Basics Inside Iligan City.” A focus group

discussion was conducted using the following question: “What strategic directions do you propose for recovery and for river rehabilitation?”

In gathering data through interview, the participants were informed of the intent of the study, and they were asked to sign informed consent documents written in the vernacular language. The children respondents were consulted whether they are willing to be interviewed for this research study. While parents of these children could not be informed, since they may be dead or missing at the time of interview, barangay leaders or nearest of kins were consulted in behalf of the children, and were asked to sign informed consent documents. In gathering data for lessons learned, and for the planning workshop, participants were informed of the intent of the research, and those who agreed to be part of this study were asked to sign informed consent documents. Participants were assured that data will be properly safeguarded to ensure confidentiality by assigning codes to each one of them, to protect their anonymity.

#### **Data Analysis and Validation**

The data on lived experiences were analyzed using thematic analysis. Thematic analysis is a method used to find and analyze emerging themes in a dataset (Braun & Clarke, 2006). In the thematic analysis, the following phases were followed: (1) transcribing data from digital recorder and from field notes, (2) making meaning-based translation from the vernacular language to the English language, (3) generating codes, (4) highlighting key phrases, and (5) defining and naming themes to cohere around a central idea. The results were presented back to the participants for comments and validation. Adjustments were done, based on the comments and suggestions of the survivors.

Data from the focus group discussions were analyzed by cross-checking the answers written on metacards, against recorded data from notes, digital recorders, computers and laptops. Answers were synthesized noting similarities and differences.

#### **Results and Discussion**

In describing experiences of the survivors, results of the thematic analysis cohered around three themes: (1) experiences of the flood; (2) description of the flood; and (3) feelings about the flood experience. In determining the lessons learned from the experiences, results cohered on two themes: (1) abuse of the Mandulog River, and (2) the unpreparedness of the City of Iligan. In proposing strategic directions for recovery and for restoring the river’s health, several suggestions were given by the survivors.



### Lived Experiences

In the first theme, experiences of the flood, the following sub-themes emerged: caught unprepared; flood waters full of logs, debris, and mud; forced to go to rooftops or climb trees; entire villages wiped out; and community connectedness. In the second theme, description of the flood, the following sub-themes emerged: an angry monster, a demolition squad, logs like an army engaged in battle, and waves like a wall. Under the theme of feelings about the flood, the following sub-themes emerged: sense of shock, fear to face the future, survival guilt, and thankfulness for having a second chance in life.

**Experiences of the flood.** Experiences of the flood were varied, as anyone can only imagine the chaotic situation that the typhoon creates. Below are some of the experiences that came up in this study. In the direct quotes presented below, the word *Participant* is replaced by *P* for more efficiency in the reading. For instance, Participant 3 would be presented as P3.

**Caught unprepared.** All the 37 survivors who were interviewed (100%) related that they were caught unprepared for Typhoon Washi. “We were caught unprepared for the flash flood, for we have no previous experience of a flood as disastrous as the one brought about by Typhoon Washi,” (P15). P7 and P8 went out carolling. “I did not want to go out carolling because of bad weather, but my classmates insisted that the rain was ordinary, and there was nothing to worry about, so I went with them” (P7). Some went to visit friends. P15 recalled,

We watched news on TV about Typhoon Washi, but we did not mind it. At around 5:30 in the afternoon, it was heavily raining, but this did not deter us to go out. I went to church for choir practice, while my husband and my two children went out visiting. When I went home, the road to Bayug was impassable. I almost fell from crossing the hanging bridge, but I managed to cross it before it snapped.

**Floodwaters full of logs, debris, and mud.** Seventeen survivors (45% ) related that the river was full of logs when it overflowed. “I was horrified to see from the window huge logs pounding at our house and hitting people. I saw our neighbors crying out for help” related P25. The floodwaters were full of garbage, insects, and reptiles. P10 stated,

We fell from the rooftop of our house when the logs rammed into it. My wife, my two children, together with my parents and my two sisters were battered by floodwaters that was heavily polluted, with garbage, insects and reptiles. My family may have been hit by logs, or bitten by snakes. I am the only one who survived.

**Forced to go to the rooftops.** There were 25 participants (67%) who related that they were forced to go to the rooftops. “We were forced to climb the rooftop

to save ourselves” (P13). Some climbed trees and stayed on top of the trees until the waters subsided. P26 recounted,

I latched our hut to two coconut trees, to secure it from the storm. My wife and I, with our six children, went up to the roof, but the water got higher, so my wife took off her malong (tubular skirt) and put two younger children in it, and fastened it with a rope. We climbed the coconut tree, and pushed the children up. The older children climbed their way up. We waited there until the waters subsided the next day.

***Entire villages were wiped out.*** There were eleven survivors (23%) who told stories of their villages being wiped out. Many families died because they were trapped inside their homes. “I saw the concrete bridge break in two, and then the waters rushed towards Bayug Island and Orchids Subdivision, wiping the entire villages up” (P16). P14 recalled,

My parents, my sister, and I were floating for hours in the sea, until we were rescued and brought to the temporary shelters. In the shelters, we began looking for each other, and were thankful that the four of us were alive. When the waters subsided at around 2:00 in the afternoon of the next day, we decided to go home to Hinaplanon, to see what was left of our home. We were shocked to see our homes uprooted and totally destroyed. Dead people and animals were scattered all over the place. The entire village was wiped out!

***Community connectedness.*** Survivors related that there were people who accommodated others in their homes. Rescue teams were instantaneously organized, showing community connectedness. Typhoon Washi attracted worldwide attention and the response was great. P6, a survivor who was saved by her neighbors, stated

When I woke up at about midnight, my bed was floating, and it nearly reached the roof, imprisoning me there. It was terrified! I thought it would be the end of me. I got my cellphone from under my pillow and texted my neighbors to help me out. Shortly after, the neighbors came and broke my window pane, and got me out of that terrible situation. I was bleeding all over because of the broken glass window, but I am very thankful to my kind neighbors who immediately responded to my cry for help.

***Description of the flood.*** To understand better the lived experiences of the survivors of Typhoon Washi, it is important to capture some of the visceral description that the participants attributed to this terrible situation. Below are just some of them.

***An angry monster.*** Survivors were awakened by the deep howling sound of the wind. According to P1, P2, and P11, it sounded like a huge angry monster.

Others described Mandulog River as an angry monster seeking revenge. (P14, P15, P24, & P36). P36 put things in these words,

I watched the swollen river and noticed the logs tossed by the waves. Then suddenly, the river overflowed its banks, and like an angry monster seeking revenge, the floodwaters rushed into the villages. The neighbors living across our house did not have a chance to save themselves.

**A demolition squad.** P1, P3, P4, and P14 described the floodwaters like a demolition squad. With huge logs in the waters, many homes, schools, business establishments, bridges, and other infrastructures were totally demolished and completely destroyed. Many people died. P1 recalled,

The river was unusually wild, as the waves were tossing high. I noticed huge logs in the waters. Then the logs rolled down in different directions, destroying everything in its path, like a demolition squad; many people died.

**An army engaged in battle.** A survivor who was watching the river below Hinaplanon Bridge saw the logs being tossed in the waves. He described the sound produced by the logs “like an army engaged in battle.” Below are his words,

Watching the river below Hinaplanon Bridge,. I saw big logs tossed very high by the waves, bumping against each other. It created a lot of noise, like that of an army engaged in battle, using armalites in rapid firing. (P 16)

**Waves like a wall.** P3 and P16 described the waves at Hinaplanon Bridge like a wall. P 16 came from a Christmas Party at the City Hall, and when he went home, he stood by Hinaplanon Bridge, and was surprised to see the waves. “The waves were tossing up high, and there were logs in it. It looked like a wall,” he related. P3 related,

We wanted to evacuate to the city, but the roads were impassable, so we all swam towards Hinaplanon Bridge. When we were by the roadside, we watched the river below the bridge. Shortly after, the waves rose so high that it looked like a wall. Then the bridge broke, releasing floodwaters that rushed towards the villages downstream. We all ran for our lives.

**Feelings about the flood experience.** The experiences with the flood certainly evoked many different feelings. Below are those that came up strong in the data.

**Shock.** P3, P5, P6, P14, and P17 were shocked when they felt the intensity of the typhoon as it blew, causing the logs to bump into their houses. Some were shocked when they suddenly woke up in the middle of the night and found their beds floating. Some were shocked by the waves they saw below the bridge.

Others were shocked to see so many dead people around, shortly after the flood. P5 recalled,

At around midnight while everyone was fast asleep, I was awakened by the loud shout of my mother and a kick on my bed by my father. I got up quickly, and I was shocked to see water inside the house. My bed was floating! From the window, I saw huge logs pounding at our house. I saw people carried by floodwaters, crying for help. We all jumped into the waters just as our house was about to crash down.

***Fear of uncertain future.*** P8, P10, and P39 feared to face the future alone. P39 is an eight year-old girl. "I lost both my parents to the flood, and I am all alone. I am afraid of facing the future," she related. P7 and P8 went out caroling and stayed with friends at the height of the storm, because roads were impassable. When the floods subsided, they went home and found the members of their families dead, leaving them as lone survivors. P8 stated,

I went out caroling with friends. When the waters rose high and the road to our home was impassable, I decided to sleep at my friend's house. When the storm subsided the next day, I went home and found my parents and my two sisters dead. I am all alone and I fear to face the future.

***Survival guilt.*** P9, P18, P20, P28, and P31 suffered from survival guilt. P9 lost his wife and his two children as he watched them helplessly carried away by the flood. "I am haunted by nightmares. In my dreams, I see my wife and my two children crying out to me for help, then I wake up and find myself crying," related P18. P28 left her husband on a wheelchair alive. When she went back for him, he was already dead. "I could not forgive myself for leaving him," she lamented. P31 had a baby that she tied with a cloth wrapped around her waist, but the floodwaters got up to her waist, and she lost the baby. P9 recounted,

When the floodwaters rose high, my wife and I decided to evacuate to a relative's house. Unfortunately, their house crushed down when logs bumped into it. In an effort to save the children, I tossed two of them to my wife. She caught the first one, but missed the other. I saw my wife being hit by a log, and along with the two children, they were carried away. They were crying for help, but I was holding the two other children. I feel guilty for not being able to save them.

***Gratefulness for a second chance in life.*** P11 was a lone survivor. She lost all the members of her family. She was pregnant during the typhoon and gave birth to a baby girl 5 days after the typhoon. Despite her being alone, she is thankful to have a second chance of life. Here is some part of her story:

The river overflowed, and we were all carried away by floodwaters. The current was strong, and we were separated from each other. I was

rescued the next day, somewhere in Iligan Bay, but I lost three children, my parents and sixteen of my relatives. I was pregnant during that time, and I gave birth to a baby girl five months after the flood. Although I grieve for the lost members of my family and I am afraid to live alone, I am thankful to God for giving me a second chance of life, and for giving me a reason to live—my baby girl.

The lived experiences of the survivors have given insights on what it was like to experience Typhoon Washi. In portraying their experiences of the flood, the survivors revealed that they were caught unprepared for Typhoon Washi, the floodwaters were full of logs, debris and mud, they were forced to go to rooftops or climb trees, entire villages were wiped out, and connectedness was felt when support was made available to them from local, national, and international organizations. In describing the flood, they likened Typhoon Washi and Mandulog River as an angry monster, the floodwaters with logs like a demolition squad, the logs that collided against each other like an army engaged in battle, and the waves that were tossing high looked like a wall. About their feelings on the flood, the survivors were shocked, the lone survivors feared to face the future alone, some had survival guilt, and one was thankful for having a second chance in life.

#### **Lessons Learned from Typhoon Washi**

In determining the lessons learned from the Typhoon Washi experience, results of the focus group discussions cohered on two themes: (1) abuse of the river and (2) unpreparedness of the City of Iligan.

**Abuse of the river.** The following were considered by the participants as forms of abuse of the river: communities living along waterways, excessive logging, mining and quarrying activities, and pollution of the rivers. There were communities living along the riverbanks, from the upstream river, to the midstream river, and to the downstream river. There were communities living along creeks, canals, and along the coast. Many families lived in houses made of light materials.

Excessive logging, mining, and quarrying activities were done in some areas of the upstream barangays. There were several logponds along the river network of Mandulog that were full of logs. These logs rolled down from the upstream river to the downstream river, and as the river overflowed its banks, disastrous flooding resulted, and the floodwaters with destructive debris destroyed everything in its path. Some barangays experienced landslides, rockslides, and soil erosion.

The rivers and the sea were heavily polluted with domestic and industrial waste, clogging the waterways. As a result, a tsunami-like flooding contributed to the catastrophe as people were entangled in the murky waters.

**Unpreparedness of the City of Iligan.** The survivors acknowledged that Iligan City was unprepared for two main reasons: lack of disaster preparedness and lack of coordination among line agencies in disaster emergency response. Results of the focus group discussions revealed that the survivors were not prepared for Typhoon Washi. The survivors were not properly informed/warned about the imminent danger that the storm might bring. There was no flood warning system in place and people lacked knowledge and training on disaster preparedness. A participant in the focus group discussion related,

When the waters rose high, we did not know what to do. We were unprepared. We looked for food and clothing which we could bring along to the gymnasium that served as evacuation center, but there was none. We swam towards the gym bringing nothing!

The survivors observed that there was lack of coordination among line agencies, and that rescue teams were not immediately visible in some areas. The hospitals did not have enough space, medicine, and personnel to attend to the victims. Only after the arrival of foreign agencies was there a well-organized emergency disaster response. One participant in the focus group discussion related,

I brought my son to the hospital, but there was no more space for him. I went to a private hospital and I met the same situation there. That hospital was badly damaged. So I brought my son to the home of a relative, who helped me attend to him, but after two days, we lost him.

A city official gave five reasons of Iligan's unpreparedness. According to him, there was no organization to take care of disasters, no land available for resettlement of survivors, no database listing of *purok* (or district, zone, or subdivision) residents per barangay, no flood-warning system in place, and no strategic plan for disaster risk reduction and management of the city (Cruz, 2013, pp. 14-24).

After identifying the gaps, follow-up questions were asked: "What strategic directions do you wish to happen in restoring the rivers back to health?" "What strategies/measures do you propose to make the residents of Iligan better prepared for any disaster that may come?" The next section describes the outcome of these questions.

### **Strategic Directions for Recovery**

After realizing that the causes of the disastrous flooding were the abuse of the river and the unpreparedness of Iligan, the survivors proposed strategic directions for recovery. These had to do with saving the river and preparedness for future disasters.

**Saving the river.** The survivors saw that saving the river is a way to healing nature. They realized that the river system was abused and that they are responsible in bringing it back to health. There were communities living along the waterways; the rivers and the sea were greatly polluted. Excessive logging, mining and quarrying activities greatly affected the river system. During the occurrence of Typhoon Washi, the logs desposited in logponds in the river system contributed to the great number of deaths and loss of property and infrastructure.

On river rehabilitation, the survivors would like to see that their forest and ecosystem are regenerated and brought back to their former condition, that Iligan will recover with abundant clean water, healthy life-giving rivers and sea, and that their river system become productive once again. They would like to practice proper waste management so that their surroundings can be free from pollution. They would like to practice organic farming for sustainable agriculture.

On community-based eco-governance, the survivors would like to see responsive strategies in restoring the environment, well-enforced environmental laws, and transparent accountable governance. They like to see well-enforced public policies on river protection, boundary river disputes resolved, and strong, dedicated, and supportive leaders. They would like to see good roads and bridges, which could withstand typhoons. The communities along the river-system and along the coast would like to be relocated into comfortable shelters. They would like to have sustainable livelihood to support their families.

**Preparedness for future disasters.** The survivors saw that they lacked disaster preparedness when the typhoon came. They were not warned about the imminent danger that the storm might bring, there was no flood warning system in place, and they lacked knowledge and training on disaster preparedness.

The survivors also observed that there was lack of coordination among line agencies, and that rescue teams were not immediately visible in some areas. The hospitals did not have enough space, medicine, and personnel to attend to victims. Moreover, there was no organization to take care of disaster response, no land available to serve as resettlement sites, and no database listing of purok residents per barangay.

To make themselves better prepared for future disasters, they propose intensive capability building activities for disaster preparedness and emergency response for the community and for line agencies of Iligan City. Early warning and early response systems for every barangay must be established and barangay teams for quick disaster response must be prepared at all times.

For better coordination among line agencies and for better emergency response, the survivors proposed that the Iligan City Disaster Risk Reduction Management Council should make a strategic plan for disaster recovery and involve the community in the planning process as well as in the implementation

of the plan. Line agencies should be proactive rather than reactive; disaster teams of all line agencies must be activated; there must be additional infrastructures and facilities for hospitals and health centers to take care of disaster victims. Better roads and bridges should be built; the City must acquire more land to provide ready relocation sites for disaster victims and informal settlers. Each barangay must have data banks of residents by purok for accurate data, so that there will be faster, easier, and reliable basis for accounting of the dead and for relocation and provision of benefits for the survivors.

### **Conclusion**

The survivors believe that saving the river is a way to healing nature. After describing their experiences of the riverine tsunami caused by Typhoon Washi, after determining lessons learned from their experiences, and suggesting a strategic vision for recovery and resiliency, it could be surmised that the survivors are now on their way to recovery. Understanding the survivors' experiences may help answer the larger question on disaster recovery of Iligan residents, and a strong political will is definitely needed for Iligan recovery.

Given the catastrophic damage caused by Typhoon Washi, as it triggered a riverine tsunami that devastated the City of Iligan, many important lessons have been learned, and these should be shared and applied. While the findings are preliminary, I recommend that the survivors be heard, and their suggestions for recovery and for river rehabilitation taken seriously. Their suggestions must be incorporated into the disaster recovery planning and in the recovery plan of the city and be implemented.

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