

Typhoon Yolanda and Tacloban, Philippines

Initial Review Report



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About ULI

The Urban Land Institute is a 501(c) (3) nonprofit research and education organization supported by its members. Founded in 1936, the Institute now has more than 30,000 members worldwide representing the entire spectrum of land use and real estate development disciplines, working in private enterprise and public service. As the preeminent, multidisciplinary real estate forum, ULI facilitates the open exchange of ideas, information, and experience among local, national, and international industry leaders and policy makers dedicated to creating better places.

The mission of the Urban Land Institute is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. ULI is committed to bringing together leaders from across the fields of real estate and land use policy to exchange best practices and serve community needs by:

- Fostering collaboration within and beyond ULI's membership through mentoring, dialogue, and problem solving.
- Exploring issues of urbanization, conservation, regeneration, land use, capital formation, and sustainable development.
- Advancing land use policies and design practices that respect the uniqueness of both built and natural environments.
- Sharing knowledge through education, applied research, publishing, and electronic media.
- Sustaining a diverse global network of local practice and advisory efforts that address current and future challenges.

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Across Asia Pacific, the Institute has over 1,400 members, with a particularly strong presence in Japan, Greater China, Southeast Asia, and Australia. The regional office of ULI Asia Pacific (ULI AP) is headquartered in Hong Kong, with satellite offices in Tokyo and Singapore. ULI AP brings together industry leaders with a common commitment to improving professional standards, seeking the best use of land, and following excellent practices. By engaging experts from various disciplines, the Institute can arrive at responsible answers to problems that would be difficult to achieve independently. ULI AP shares its knowledge through various discussion forums, research, publications, and electronic media. ULI's activities in the region are aimed at providing information that is practical, down-to-earth, and useful so that on-the-ground changes can be made. By building and sustaining a diverse network of local experts in the region, the Institute is able to address the current and future challenges facing Asia's cities.

ULI Asia Pacific Vision Statement

ULI is the acknowledged authority for policy information and best practices in land use in the Asia Pacific region.

Supporting principles:

- Collaboration with universities, government agencies, and like-minded organizations strengthens and disseminates the Institute's expertise.
- Priority initiatives effectively address local land use issues.
- High-quality programs enhance the integrity of the Institute.
- Substantial interdisciplinary membership is engaged throughout the region.

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Message from ULI Asia Pacific

Dear ULI Members and Friends in the Philippines,

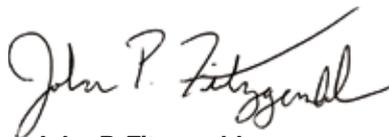
On behalf of the Urban Land Institute's over 30,000 members worldwide, I would like to express our deepest sympathies to all who were affected by the terrible devastation of Typhoon Yolanda. The determined relief and community rebuilding efforts are a tribute to the resiliency of the Filipino character and spirit. ULI is committed to being a resource to the rebuilding and future planning efforts in the Philippines.

As ULI's lead regional executive, I take great pride in the accomplishments of ULI Philippines over the past two years. We deeply appreciate the support of the ULI Philippines Founding Member companies, the dedicated leadership of Charlie Rufino and the Executive Committee, and the innovative work of the Young Leaders Group.

ULI's best work results from locally driven initiatives that are connected to the global mission of ULI, which is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide.

At ULI, we believe that the most prosperous cities in the 21st century will be those that are great places to live. We believe that a high quality of life can be a powerful engine for economic growth. I look forward to continuing to work closely with ULI Philippines as we work toward these goals.

Best regards,



John P. Fitzgerald

Chief Executive, Asia Pacific
Urban Land Institute

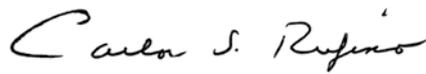
Foreword

Shelter is one of the most fundamental of human needs. And at no time is that more apparent than after a large natural disaster where much of the built environment is often left heavily damaged.

The devastation wrought by Typhoon Yolanda on bucolic Tacloban and neighboring areas has been grimly documented. It is a tenet of urban planning that the built environment plays a key role in shaping and fostering a desired community. Similarly, the restoration of the built environment is crucial to the recovery of a disaster-ravaged community.

It is in answer to that need that the Urban Land Institute began its work in Yolanda-devastated areas. This report is an initial recounting of that effort, a long-term engagement to create more resilient communities that will stretch over many years.

It is not an engagement done in isolation, however. The Urban Land Institute worked closely with both local and national government agencies as well as with nongovernment organizations, both local and international. All these stakeholders are united by their desire to help the people of Tacloban get back on their feet. It is hoped that the recommendations and observations made in this report will help align efforts.



Carlos S. Rufino

President, The NET Group

Chairman, ULI Philippines

Preface

Natural disasters occur frequently in the Philippines and other countries in the region. As one of the principles in ULI's *Ten Principles for Metro Manila's New Urban Core*, "being prepared" is essential to ensure that the devastation caused by natural disasters is minimized. With concern growing over the impact of climate change, it is good to understand the importance of resiliency and livability in addition to sustainability. Cities and communities that are vulnerable to natural disasters should learn from each other and be better prepared to prevent loss of lives and to minimize damage to property, businesses, and people's economic livelihoods.

The Urban Land Institute, through its legacy spanning 78 years and its diverse membership composed of real estate and development professionals, offers best practices worldwide. It also provides a great platform for multiple stakeholders to come together to discuss critical urban issues to shape better cities through the responsible use of land. It has been a pleasure to be involved with ULI over the years and to contribute in a meaningful way through this initial review as well as the *Ten Principles* projects, including participation in various events and discussions to shape better cities in the Asia Pacific region.

Following Super-Typhoon Yolanda, which swept through six provinces in the central Philippines on November 8, 2013, ULI and ULI Philippines came forward to extend help to the people of Tacloban and the local and national government involved in the rebuilding effort. This took the form of undertaking an initial review involving a visit to Tacloban and surrounding areas to assess the situation on the ground and get a better understanding of some of the challenges being faced by people there. This project would not have been possible without the directive from Patrick L. Phillips, CEO of ULI, and the support of John Fitzgerald, CEO of ULI Asia Pacific, and the involvement of Charlie Rufino, chair of ULI Philippines who organized the visit to Tacloban and also coordinated the key meetings in Manila.

Through this experience, I have met many people during my visit to Tacloban and Manila and gained a better understanding of the situation on the ground and also the challenges and issues faced at the local and national levels. Mayor Alfred Romualdez and his team were very helpful in ensuring that we had a good understanding of the situation and of their efforts right before and after the typhoon hit Tacloban and its environs. The hospitality of Congressman Martin Romualdez and his team who ensured that our stay in Tacloban was comfortable was extremely touching in spite of the situation. It was an honor to meet Secretary Panfilo Lacson and Under Secretary Danny Antonio, and understanding the challenges and the task at hand in the rebuilding efforts was very important as well.

It has been meaningful for me being involved in this effort on behalf of ULI, and I hope this is a useful first step that will lead to more ULI involvement to help the rebuilding effort and to ensure that people are better prepared for similar situations in the Philippines and elsewhere in the region.

I would like to convey my regards to all the people I have met during this assignment, and a big thank-you goes to Charlie Rufino and his team, as well as to the ULI editorial team for all their input. It has been a great experience for me as project director. And thanks to the UDP International team, including Ravi K. Govada, Merel Krebbers, and Kalpesh Narkhede, for their involvement as well.



Dr. Sujata S. Govada

Project Director, Yolanda and Tacloban Initial Review

Founding and Managing Director, UDP International

Exco Member, ULI North Asia

ULI Global Trustee

Adjunct Associate Professor, Chinese University of Hong Kong

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1 Background

Typhoon Yolanda/Haiyan

On November 8, 2013, Super-Typhoon Yolanda swept through six provinces in the central Philippines. Typhoon Yolanda—also known as Typhoon Haiyan—devastated many parts of the islands of Samar and Leyte, and has affected more than 10 percent of the national population (Lum & Margesson, 2013). The areas that suffered damage were also some of the poorest parts of the country (Lum & Margesson, 2013).

It is said to be the most powerful typhoon ever to hit land, a category 5. The U.S. Navy's Warning Center recorded winds up to 380 kilometers (236 miles) per hour, making Yolanda the fourth-most-powerful tropical cyclone ever recorded (*The Guardian*, 2013). The typhoon brought flash floods, landslides, and storm surges, causing enormous destruction to the Philippines. The tsunami-like waves were what caused the most fatalities among the people of Tacloban and other coastal communities in Eastern Visayas. The downtown of Tacloban and the airport were completely destroyed by the waves. Various death tolls have been reported; however, the U.S. Agency for International Development (USAID) stated on December 18, 2013, that the death toll was 6,069. But local estimates have been much higher, as dead bodies are still being recovered every day. Two weeks after the storm, the United Nations Children's Fund (UNICEF) estimated that nearly half of the 13.2 million people affected by the disaster were children. The affected numbers are in flux and may be subject to revision as they grow every day; the USAID reported that the number of affected people is now 16.1 million. The super-typhoon disaster rapidly produced a humanitarian crisis. In many areas, the typhoon cut off power, telecommunications, and water, and between 65 percent and 90 percent of structures were destroyed (Lum & Margesson, 2013).

The local government, including the mayor, the congressman, and their teams in Tacloban, has worked tirelessly to help the local people. Initially, there seemed to be a delay in the national government's rescue efforts for the people of Eastern Visayas, including Tacloban. However, since the appointment of a dedicated team at the national level in charge of coordinating the rebuilding efforts, more planning and some progress are underway within the affected areas. Numerous international organizations responded to the crisis in a timely manner and are working with the local governments to help the people and communities affected. These first responders include U.N. agencies, non-governmental organizations (NGOs), private voluntary agencies (PVOs), and multilateral donors. The U.N. Office of Humanitarian Affairs has appealed for US\$348 million as a result of evaluations completed in affected areas (Lum & Margesson, 2013). The USAID funding included almost US\$52 million for relief operations (USAID, 2013).

Typhoon Yolanda is the most devastating natural disaster to hit the Philippines since 2010. In that year, Typhoon Megi brought winds up to 290 kilometers (180 miles) per hour, and in December 2012, Typhoon Bopha killed 1,901 people on the southern Philippine island of Mindanao (*The Guardian*, 2013).

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Tacloban/Manila Visit

A visit to Tacloban and Manila was organized, as it was considered important to assess the impact and to meet key people from national and local government to better comprehend the challenges and opportunities of the areas affected by Typhoon Yolanda, and those involved in the rebuilding process. To understand the situation on the ground better, a visit to the devastated region of Eastern Visayas was undertaken including an aerial tour in addition to some interviews and discussions with various LGU stakeholders, with the mayor, the congressman, and the people of Tacloban.

Manila Visit

On December 27, 2013, representatives from ULI's Philippines national council and UDP International met some of the key people from the national government and the local government of Tacloban and neighboring areas, including Secretary Panfilo Lacson, Under Secretary Danny Antonio, Congressman Martin Romualdez, Mayor Alfred Romualdez, Congresswoman Lucy Torres-Gomez, Celina Agaton (a Google USAID ICCM fellow), Jose Maria Lorenzo "Lory" Tan of the World Wildlife Fund (WWF), and Charlie Rufino of ULI Philippines, among others. This discussion was highly informative, and it was useful to hear about the extent of

Structures damaged by Typhoon Yolanda.



Govada, S.

Philippine Institute of Environmental Planners Forum

It was beneficial to have the opportunity to participate in the public forum organized by the Philippine Institute of Environmental Planners (PIEP) with key people—namely, Secretary Panfilo Lacson, Under Secretary Danny Antonio, and architect Jun Palafox—involved as panelists. I attended as a representative of ULI. About 400 people turned out—which was much more than expected—including several dignitaries, professionals, and representatives from a diverse range of organizations. After an initial presentation by the secretary in charge, there was a floor discussion among many professionals wanting to help and asking why there was not enough help on the ground provided by the national government.

During the breakout sessions, people at two tables were grouped together so that there were about 17 group presentations in total. Key actions suggested during the author's group's presentation are as follows:

- 1. Procure accurate data and mapping of geohazards;**
- 2. Build secure hazard evacuation centers;**
- 3. Possibly reconstitute land records and titles;**
- 4. Work on strategic vision, framework, and planning with local people;**
- 5. Get national and local government and professionals to work together;**
- 6. Focus more authority and leadership on the budget allocation and breakdown of responsibility;**
- 7. Establish international standards, local codes, and building and planning regulations;**
- 8. Address the critical need for shelter and jobs;**
- 9. Work with the people to build a sense of community;**
- 10. Recognize the importance of Tacloban's strategic location; and**
- 11. Implement a transparent process.**

damage and also some of the issues and challenges that both the local government units (LGUs) and the national government were facing.

Some of the key issues and challenges discussed are as follows:

The tsunami-like storm surges wiped out the entire coastal area, including the downtown of Tacloban. Power and electricity were disrupted and all communication with the outside world broke down.

Debris was piled up three meters (9.8 feet) high along the main roads, making it hard for people to travel. It would take hours to travel a path that normally would have taken only a few minutes. What is more, there were dead bodies among the debris. A complete assessment of the damage caused by Yolanda will take some time, but the people are trying to get back to normal as much as they can.

The local count of lives lost is much higher than the official number of more than 6,000. The total is likely to be more in the range of 15,000 to 20,000, as about 30 dead bodies continue to be found every day. There are still bodies on the ground that are waiting to be sent to the mass grave because they remain unidentified. This is a serious situation that can result in psychological and health impacts on the survivors. Thus, in this aspect, there is need for immediate help to the LGUs and people within the affected areas.

Local populations were alerted about the storm, and some people evacuated to the aerodrome, churches, hospitals, schools, and hotels. Some of these buildings worked reasonably well as evacuation centers and people survived, but others were less fortunate as the buildings could not withstand the onslaught of Yolanda.

All the utilities were damaged. It would have been better if they had been underground to begin with, and this may be considered as an option in the rebuilding process. Apparently there is an abundance of water, and the purest water in the world is in Biliran, an island province in the Philippines located in the typhoon-ravaged Eastern Visayas region, but proper distribution channels are lacking. There is a lack of distribution of water to other areas now and likely also in the future; as a result of this, development on higher ground becomes difficult.

Relief goods were distributed within a few days after the storm, thanks to the continued efforts of the LGU, including the mayor and the congressman, and also thanks to the widespread support from the international community. Relief operations seem to be adequate, and relief goods including tents, food, water, and essentials reached people to satisfy basic needs. However, there is still need for more good drinking water, food, and shelter.

Facilities such as schools, universities, and hospitals were damaged and need to be repaired so they can reopen. There is much need for construction material and professional help in the rebuilding process including planning, design, construction, and so on. There was already a backlog of 20,000 homes before the storm; now, the demand for shelter is even more urgent.

Hospitals that were not damaged, such as the Romualdez Foundation Hospital, are functioning and giving care to the people. Since bottled water was available until recently, gastroenteritis-related cases are only just now surfacing. There is a lot of trauma, especially among children, and psychological cases that need attention. Local doctors and volunteers are working closely with foreign doctors and volunteers to provide medical care for the people as needed. There are two large water filters, which were donated, that are helping to provide clean water to the people. However, most people are using the limited municipal water that is available. It is unclear how clean this water is, as there are more cases of people with gastroenteritis than before.

Tacloban Visit

A Tacloban visit by ULI members that was sponsored by an Urban Innovation Grant on December 28 and 29 was crucial to really see and comprehend the extent of damage caused by Typhoon Yolanda, which destroyed most of the coastal areas including the downtown area of Tacloban. The airport was barely in operation, with flights landing and taking off only during daylight hours. Power and electricity were not fully restored, and drinking water was just beginning to be available.

From the accounts of the local people, winds exceeding 300 kilometers (186 miles) per hour came from both directions, and it was more like a tsunami rather than a storm surge that caught them by surprise. Water was gushing in waves of three meters (ten feet) at first, which was manageable, but as the waves started rising higher, the damage caused was exponential. There were no killings, but lootings were reported right after the storm.

After the typhoon hit and the roadways were full of debris, initial clearing was done by the local people including the mayor himself and, subsequently, the military. Also, many international organizations such as the Tzu-Chi Foundation were paying people 500 Filipino pesos to work and clean up the debris. There was no heavy equipment; most clearing of debris was being done by hand by people from the United Nations Development Program (UNDP) and other first responders.



Govada, S.

Debris along the road after Typhoon Yolanda.

The national government has declared a “no-build zone” of up to 40 meters (131 feet) or so from the coastline. The national government and the local government are seriously thinking of relocating the city, including the central business district (CBD), to a safer place on higher ground. Some people think this is acceptable and are waiting to hear the relocation plan, but others would prefer to rebuild where they were. In order to help the people, the local government is working hard to fill in the gaps where the national government was slow to respond to the initial disaster and help in the rebuilding process.

3

Assessment of the Situation

Many of the badly affected areas are still without electricity and clean running water. Although a couple of innovative water filtration systems using solar and wind energy have been installed—one within the hospital and the other within the downtown—they are far from sufficient. Only some of the more central areas of Tacloban have access to running water again. With access to bottled water now decreasing, there are concerns that tap water may not be completely safe and may cause gastrointestinal issues. Moreover, as mentioned previously, many more bodies are being found every day, leading to an increasing number of decomposing bodies not yet buried, raising the risk of spread of disease and creating an intolerable smell.

Also previously mentioned, Typhoon Yolanda destroyed between 65 and 90 percent of structures in various parts of the central Philippines. In Tacloban, the worst affected area, the extensive damage was largely caused by two-story-high storm surges, leaving a mere 10 percent of structures standing. The waves were so powerful that many boats and ships were pushed inland. Google crisis maps—one showing central Philippines and the other showing only Tacloban—show the areas of the central Philippines that have been damaged and the extent of that damage. Typhoon Yolanda caused widespread destruction in the city of Tacloban and surrounding towns, located on Leyte Island, connected to Samar Island. Due to the location of Tacloban, the tsunami-like storm surges suffered within the city were much more severe than those suffered in other places due to the funneling effect of the waves.

There also is extensive damage on the islands of Bantayan and Cebu, in particular Bogu City and surrounding cities and towns. Many towns and cities will have to rebuild from the ground up, but some historical and heritage sites that were lost cannot be fully recovered. Toward the east, part of Guiuan Province—the first area to be hit by Typhoon Yolanda—suffered great destruction and loss resulting from the super-typhoon. It is a peninsula extending into the Pacific Ocean with great historical and heritage value in the Philippines. Many of the areas affected are home to historical churches, some of the oldest in Asia.

The Google crisis maps also illustrate areas that are in danger and, more specifically, areas that have suffered low to severe levels of damage as a result of the super-typhoon. The city is considered to be in a state of calamity and many areas are severely damaged. The map also indicates registered evacuation centers, communication posts, and information points in the area. Most of the evacuation centers are churches, schools, and municipal buildings such as the convention center, presumably because they are among the few structures still standing. The map also shows other information such as the number of displaced people the



Tacloban inundated with water due to Typhoon Yolanda.

center is housing. Furthermore, the map shows a relief goods drop-off center toward the north of Tacloban.

Other areas, such as Cebu City and Manila, have a higher concentration of relief goods drop-off centers—presumably because they are bigger cities, but also because they suffered less damage and remain internationally accessible.

USAID has outlined the extent of damage, aid response, and the need for further aid across the following six sectors: agriculture and food security, health and hygiene, nutrition, protection, shelter and settlement, and international assistance.

Agriculture and Food Security

- The coordination of the provision of infrastructure and services should be enhanced. The super-typhoon damaged more than 63,200 hectares (156,200 acres) of rice crops across the Eastern Visayas region. In response, the U.N. Food and Agriculture Organization (FAO) and other partners are donating rice seed to help offset any future lack of supply.
- The World Food Program (WFP) and the Government of the Philippines Department of Social Welfare and Development (DSWD) have agreed to a US\$6 million cash transfer program for affected people on the is-

lands of Leyte, Panay, and Samar. This fund will cover each household with a monthly allowance for food over a two-month period. USAID agreed to a further US\$10 million contribution for food aid.

- Specialized nutrition produced for vulnerable populations was dispatched by the WFP in early December 2013.

Health and Hygiene

- The most common health problems include respiratory infections, fever, gastrointestinal issues, skin diseases, and wounds from the typhoon itself or from the clearing of debris.
- The Philippines national government, the U.N. World Health Organization, UNICEF, and others have vaccinated around 36,000 children against diseases such as measles and polio. Vitamin supplements also have been provided. However, as people start returning to communities, continued immunizations will be needed.
- Within Tacloban, international organizations have aided in the repair of drainage systems, water systems, and solid waste management. Moreover, hygiene kits have been distributed to as many as 45,000 people.

Nutrition

- Partners have screened thousands of children for moderate to acute malnutrition and have implemented treatment programs. Blanket supplementary feeding has been used to prevent malnutrition from increasing among children. Similar outreach efforts were done for other vulnerable groups such as pregnant women and caregivers.

Protection

- Various international agencies and organizations are providing direct support to ensure that protection mechanisms and protocols are in place. For instance, numerous measures have been activated to prevent gender-based issues, such as violence.
- The International Organization for Migration (IOM) is present to track displacements and to ensure that displacement sites employ protective measures for the people—especially women and children—staying in them.
- Catholic Relief Services (CRS) and USAID/OFDA have engaged in protection activities in Tacloban including replacing critical documents; providing training on violence, child protection, and trafficking preven-

tion; and educating government officials on land and property rights issues.

Shelter and Settlements

- Many affected families require appropriate building materials to start repairing and rebuilding their damaged or destroyed homes.
- Shelter Cluster partners have already provided basic emergency shelter materials, but much more are needed.
- To help them understand the risks and vulnerabilities emanating from natural disasters, communities in Tacloban have been educated on disaster risk reduction by USAID/OFDA.

International Assistance

- In mid-December, many international funding agencies pledged emergency assistance loans to the Philippines. These donors include the Asian Development Bank (ADB), the Asia-Pacific Disaster Response Fund, and the European Commission.

Furthermore, within Tacloban and the surrounding areas, there seems to be a “disconnect” between national government and local government. Because they stem from different political parties, differences in views and priorities may slow down rebuilding and rehabilitation efforts. The temporary shelters provided by the national government in Tacloban are yet to be completed and occupied by the locals. In two and a half years, a presidential election will bring forward new governmental representatives, possibly disrupting any long-term rehabilitation plan. With this in mind, the current goal seems to be the completion of most of the rebuilding efforts within this two-and-a-half-year period. If these efforts are successful, they may boost the political future of those involved. The reverse is also true.

As mentioned earlier in this report, there also is some discussion of moving downtown Tacloban further inland by creating a 40-meter (131 feet) “no-build zone” along the coast. This should be reviewed carefully before being seriously considered. Over the longer term, many areas may face issues with displacement and land disputes, and certain mechanisms need to be in place so that these issues are prevented or otherwise resolved. Addressing social issues that were prevalent before the disaster—including shantytowns and previously ongoing land disputes—is also a concern.



IONM/Joe Lowry 2014

Residents finding ways to commute after Typhoon Yolanda.

4 Case Study Examples

This section describes some natural disaster case studies and resiliency models and the lessons that can be adapted and applied to the case of Tacloban.

Natural Disaster Case Studies

The Indian Ocean Tsunami and Hurricane Katrina are two case studies that are relatable to the Typhoon Yolanda disaster. These case studies can give insight into how previous disasters were dealt with and the take-away messages.

Indian Ocean Tsunami, Thailand

The Indian Ocean Tsunami in 2004 caused vast destruction to various coastlines across Asia. Thailand suffered immensely from the tsunami, with many coastal towns needing to be rebuilt afterward. Besides immediate and short-term responses, new land use zoning was instituted by the government, and a long-term planning and rehabilitation strategy was put into action. Interestingly, the United Nations Office for Disaster Risk Reduction (UNISDR) stated that despite its proximity to the epicenter, Thailand was hit about two hours after the earthquake. This delay was attributable to the shallow waters of the Andaman Sea, causing the tsunami to travel more slowly toward the Thai coast. The UNISDR office in Thailand reported a number of planning lessons learned from the disaster and subsequent rehabilitation efforts, including the following:

- When it comes to planning, include disaster preparedness and safety structures for new construction for risk reduction (e.g., watch towers, detection stations, designated spaces for safety from flooding and strong winds, and so on).



Indian Ocean Tsunami, Thailand.



Asian Disaster Preparedness Center

Flood-response exercises with schoolchildren in Thailand.



Destruction and debris left by Hurricane Katrina.

- Promote public awareness of and engagement in planning, especially the involvement of the affected community.
- Identify key issues that must be addressed and incorporate them into planning.
- Promote public, private, and community engagement. Engage civil society and the private sector with the government, and not only in government-led actions.
- Be aware of the environmental impacts the disaster has caused, including contaminated groundwater sources.

- Review mitigation and building codes.
- Create coastal buffer zones by planting trees and plants to prevent further erosion and damage to coral reefs and shallower waters.
- Build vertical structures that allow for evacuation during flooding.

Hurricane Katrina, New Orleans

As in Tacloban with Typhoon Yolanda, New Orleans suffered great levels of destruction as a result of storm surges generated by Hurricane Katrina in 2005. As a result, large sections of this American city needed to be rebuilt, calling for a planning strategy. The Urban Land Institute (ULI, 2005) addressed the following five key areas within its report: government effectiveness, economic development and culture, urban and city planning, infrastructure, and housing.

Some planning lessons learned from Hurricane Katrina include the following:

- Planners seeking to assist the city in devising a recovery and redevelopment plan must resist the temptation to return the community to its historic form and function.
- “Spatial quality” zoning allowed there to be divisions of areas based on the areas’ quality, which determined the priority of rebuilding and investment strategies. This can be useful during the rebuilding phase, making it clearer where to start. However, it can be a sensitive topic to the affected communities as the quality of a place is highly subjective and must be addressed in a collaborative manner with the local people’s involvement.

- What residents need and deserve is not simply a blueprint to restore the city to its former status, but rather a visionary plan to transform the city into a more vibrant, sustainable, and equitable place.
- Relocating business owners and civic leaders could present a formidable challenge that few planning and design professionals have confronted.
- The experience of these communities underscores the importance of actively involving the residents affected by these events, along with the community-based organizations representing them, as equal partners with local elected officials and professional planners at each step in the planning and redevelopment process.



Sarah Garcia, 2013

Dutch coastal beaches with sandbars.

Resiliency Models

Both the Dutch coast and Bangladesh provide useful examples of resiliency from which Tacloban can learn. The management of the Dutch coast can inform protection measures relevant for the Tacloban coast, as it is also a low-lying coast. Similarly, Bangladesh's experience with typhoons and flooding is comparable to the Philippines' experience, and Bangladesh has a strong community disaster preparedness network that could be implemented in Tacloban as well as the rest of the Philippines.

The Dutch Coast

Integrated planning is used to address the growing risk of coastal flooding in the Netherlands. This planning is tailored to reduce the risk to people and capital investments. This integrated approach looks at spatial quality and sustainable safety, based on a set of integrated coastal zone management (ICZM) principles.

The Dutch coast consists of the Delta coast, the Holland coast, and the Wadden coast (Roode & van Heuvel, 2011). Most of the coast consists of sandy beaches with multiple sandbars. Dutch coastal beaches have multiple shallow banks or "bars" formed by sedimentary deposits. These are sometimes submerged and sometimes not. Approximately 290 kilometers (180 miles) of the coast is dunes and 60 kilometers (37 miles) is protected by structures such as dikes and dams (de Ruig & Hillen, 1997). The dunes offer a natural, sandy defense to the sea as 30 percent of the Netherlands lies below sea level. Some land can be up to six meters

(19.6 feet) below sea level. For this reason, these dunes are crucial for the Dutch sea defense and are often natural conservation areas.

The Netherlands also manages the sediment budget of the sandy coast as one of its main strategies. (A sediment budget considers the coastal sediment “inputs” and “outputs,” a tool used to predict coastal morphology.) The coast is dynamic and constantly changing shape. Approximately 12 million square meters (129 million square feet) of sand is shifted from the North Sea to the Wadden Sea annually as a result of the rising sea level and coastal erosion (Isle of Wight Council, 2005). Precise monitoring of coastal morphodynamic processes along the entire coastline informs where sand nourishment is needed.

The Netherlands has a longstanding history of coastal defense strategies and is internationally renowned for them. The Dutch often provide coastal defense guidance to other coastal regions in need of it.

Lessons learned include the following:

- The importance of natural conservation in coastal defense.
- The importance of protecting the coast against erosion and implementing sand nourishment strategies.

Bangladesh

Bangladesh is frequently affected by natural disasters, often in the form of cyclones, floods, and storm surges. Due to the funnel shape of San Pedro and San Pablo Bay, these three natural disasters are naturally guided in toward Bangladesh (Khan, 2008). The damage caused by the annual cyclone season negatively affects the economy and stunts overall development. Therefore, both disaster mitigation measures and disaster preparedness are crucial for sustainable development in Bangladesh (Khan, 2008).

In previous decades, storms that hit the coast of Bangladesh caused many casualties, largely because of the lack of awareness of what to do in such situations (Mathbor, 2007). Nowadays, a national framework for disaster management exists, and government and NGOs provide both formal and informal disaster education and awareness (Mallick et al., 2005; Kahn, 2008). This education starts at the primary level and goes up to the postgraduate level, and involves teaching children, volunteers, and other members of the community how to react in emergency situations and properly make use of shelters. These programs share the objective of promoting resilient communities that are prepared in emergency situations.

Despite the many setbacks that Bangladesh has suffered as a result of disasters, much progress has been made in disaster mitigation and preparedness, though improvements are needed for comprehensive disaster management (Khan, 2008). Coastal management is costly and requires continual investment for improvements as nature wears down barriers and defenses. Cyclone preparedness in Bangladeshi communities has become efficient and helped sustain development—and can serve as a model for preparedness planning in other places.

Similar programs are being conducted in Odisha, India, where the government emphasizes creating awareness throughout the community, especially among the younger generation. When Cyclone Phailin hit Odisha in 2013, the state government was able to evacuate 983,553 people and temporarily relocate them to a safer place. The United Nations praised the Odisha government for its successful disaster management, and commended it as being a useful disaster risk reduction model for other cities (*Urban News Digest*, 2013).

One lesson learned through the Bangladeshi experience with natural disasters is the importance of community disaster preparedness and awareness, including disaster awareness and emergency response education for residents of all ages.

Bangladeshi students.



Dey, S. 2010

5

Preliminary Observations

Tacloban and other areas in the central Philippines require rebuilding and rehabilitation strategies for immediate use as well as for the short term, mid term, and long term. It is imperative that these strategies be a result of appropriate and collaborative planning involving the local people. The national and local governments need to work together to help the affected people. Moreover, there needs to be recognition that these typhoons will recur and may only worsen. A strategic framework should be mapped out before a master plan is developed. Any planning should be done with the local government, and should include input from the local people affected. More than one strategy may be applicable, but the local support—and consequent success—of a strategy is always highly dependent on a collaborative process that includes members across society.

Furthermore, the affected LGUs must draw from the lessons learned in previous global, regional, and local case studies and apply those that are most relevant to the Philippines and, more specifically, to the Tacloban situation. It is recommended to come up with a strategic framework, involving an integrated vision for the rebuilding strategy that incorporates the aspirations and needs of the local people, making sure they are better prepared for such natural disasters in the future.

On behalf of ULI, I make the following preliminary observations for Tacloban and its environs for the following time frames: the immediate to the short term, the short term to the mid term, and the mid term to the long term.

Immediate to Short-term

The people's immediate and short-term needs—food and temporary shelter, their livelihoods, local needs—should be addressed to ensure that they can recover and rebuild their lives. These needs include the following:

- Help with identifying the dead bodies, clearing debris, and repairing buildings such as schools and hospitals.
- Medical supplies and provision of medical care with local and international input.
- Education and awareness to ensure that people know how to respond and what assistance is available; also, knowing how others are coping with the situation will help empower people as well.
- Communication so that people are more aware of how their needs are being addressed. This will need to be done at the local, regional, national, and international levels as well.

- Assistance to people and businesses to aid in rebuilding.
- Financial and other assistance to LGUs so they can better manage the rebuilding and rehabilitation efforts.
- The involvement of NGOs and the private sector in the process, rather than relying entirely on the public sector.

Short-term to Mid-term

Basic needs for food, shelter, education, health, and businesses need to be addressed in the short term to mid term to begin to get people back to normal and to regain their livelihood. This may involve temporary shelters, and even repairing some of the damaged buildings, while longer-term plans for rebuilding are being drawn up. Many international relief efforts are underway in affected areas. There is a spread of humanitarian aid efforts by large organizations across the affected areas. They seem to be organizing among themselves and are able to deliver their services in a prompt manner. However, there is still a widespread need for electricity and clean water. Running water has been restored in some of the more central areas of Tacloban, but other areas on the islands of Leyte and Samar are still without water. Water purification is another important consideration that can be addressed with more donated equipment.

Temporary shelter should be planned well, although it is a short-term solution before permanent structures are rebuilt. Temporary shelter should be built and located in a way that follows certain planning principles and that is conducive for community building and livability. As observed during previous disasters, temporary shelter ends up being used longer than first envisioned. Rebuilding can take a long time, so temporary housing must be good enough to support the demand for shelter as well as other needs such as rebuilding commerce. Temporary shelter can be planned as mixed-use communities with markets and shops below and housing above, which will make areas more economically viable and more convenient for the people.

- Provide for basic needs, such as food, shelter, electricity, clean water, and sewage facilities.
- Restore education, health, and economic livelihood to restore normalcy for affected people.
- Offer psychological care, community support, and spiritual healing for the people as needed, including children who experienced grief and trauma.

- Build properly planned temporary shelter and communities while long-term planning is underway.
- Coordinate and align various parties and funding involved to streamline the rebuilding efforts.
- Help prepare programs for education and awareness for disaster preparedness and resiliency in coastal communities in the area.

Mid-term to Long-term

In the mid to long term, there needs to be a strategic vision and framework in place for the long-term planning and development of a proper master plan for Tacloban and the coastal communities. This may involve relocation strategies not only for housing areas, but also for the central business district. These tasks need to be executed in a well-thought-out manner involving the LGUs and local people. New planning and building codes may need to be developed that are more appropriate for the area, and the rebuilding effort will need to be evaluated and monitored well.

Deciding where to rebuild will be a crucial part of the rebuilding strategy. In some towns and cities, the typhoon destroyed up to 80 to 90 percent of all structures. As such, there is a huge amount of rebuilding to be done. Some of the previous locations of people's homes and buildings may not have been suitable for building in the first place. Professionals must be involved to help decide where building is safe or unsafe. There has been discussion of relocating towns and cities more inland, which will mean that some displaced people will be permanently displaced if their previous homes are deemed to have been located in an unsafe area. For example, fishermen may not be allowed to live as close as they once did to the coast; this decision may cause protests, as this will have an impact on their livelihood. Innovative alternatives to address these situations should be investigated.

Related problems, such as displacement and land disputes, need to be properly addressed. For example, it is estimated that one-third of Tacloban's residents are squatting on land that is not theirs. Moreover, up to 175,000 people lived in shantytowns with no sewerage before the storm. These social problems must be addressed and not allowed to go back to as it was (or worse). Social conflict is bound to become an issue during the planning stage, and extensive collaboration with local people must be part of the planning process. Moving forward, the national and local governments should work together and involve the people in the planning process in developing a strategic vision, the master plan, and rebuilding strategies for the devastated areas.

When it comes to relocating vulnerable populations, the terms of resettlement should ensure basic amenities and sustainable livelihoods as entitlements (Kartiki, 2011). Forced migration should be avoided; however, migration that is unavoidable needs to be planned properly and institutionally supported. Providing better infrastructure, social protection, and livelihoods must be stepped up in such a scenario so that local populations being relocated more readily accept the change.

The Philippines is often subject to typhoons, and there is little doubt that similar disasters will happen again. This must be a consideration in the relocation strategy as well as in the coastal defense strategy. Typhoon Yolanda caused severe storm surges, which caused the majority of the destruction to identified parts of the coastlines that are more vulnerable. Proper measures must be taken to prevent similar occurrences. Moreover, disaster management measures must be continually updated to reflect trends in population growth and changes.

An early disaster awareness network and reinforced communication networks will enable people to be better prepared in case of an emergency, which can save more lives. Awareness education can be implemented into schooling systems and other community programs to enhance overall community resilience in a disaster situation. This can also ensure the proper usage of shelters and other emergency procedures.

As applied in the Netherlands, the concept of coastal conservation for coastal defense may be applicable in Tacloban as well. Tacloban and the surrounding areas may not have dunes, but conserving coral reefs is also important as a coastal defense. Coral reefs help break waves down during hurricanes, typhoons, and other storms. This strategy also helps prevent coastal erosion.

Sand nourishment may benefit Tacloban as a form of coastal protection. Coastal areas losing mass as a result of long shore drift or other coastal erosion processes can be manually replenished to retain the coast's natural buffer.

The Philippines as a whole can look into implementing similar coastal defense mechanisms at a smaller scale, especially once "spatial quality" of different parts of the coast has been determined. For example, a barrier such as a sandbar or levee may reduce the impact by helping to prevent similar funneling effects of storm surges along the coast of Tacloban.

- Involve people in planning and rebuilding efforts through a transparent, inclusive, and participatory process.
- Formulate a strategic vision for developing sustainable and livable communities, including coastal conservation and defense strategies.

- Prepare a sustainable master plan involving relocation strategies and regulatory framework as appropriate.
- Ensure that the national and local governments work together with multiple stakeholders for proper implementation.
- Amend planning and building codes with an appropriate institutional mechanism for proper implementation.
- Measure preparedness and resiliency, and also monitor and evaluate progress.

6 Next Steps

Govada, S.



PIEP Forum in Manila.

After discussions with a diverse group of local people from various segments of society, it became quite apparent that, due to the strategic location of Tacloban, most people are there because it is a good place to work and live; it is an easy place to do business, and also a comfortable city in which to live. They like the peace and quiet, and look forward to rebuilding the city into an even better place and being better prepared for future storms. ULI can share its experience and best practices to help Filipinos in this effort so that the rebuilding process in Tacloban can become a model for other vulnerable communities that face similar threats from natural disasters in the future.

ULI Advisory Services panel for Clark Air Base in the Philippines.

ULI



Project Staff

Project Director and Report Author

Dr. Sujata S. Govada

Dr. Sujata S. Govada is a member of the ULI North Asia Executive Committee, founding and managing director of Urban Design & Planning Consultants Limited (UDP International), and an adjunct associate professor at the School of Architecture at the Chinese University of Hong Kong. She is an award winning, qualified urban design and certified planner with almost 30 years of international experience involved in practice, teaching and research in Hong Kong, China, Philippines, India and the United States. She was educated in India, (B. Arch, JNTU) and in the United States (M. Arch and PhD, Va. Tech) and has been based in Hong Kong since 1994.

UDP International Team

Anil K. Govada

Director, Business Development

Ravi K. Govada

Marketing and Communications Director

Merel Krebbers

Assistant Sustainability Consultant

Kalpesh Narkhede

Assistant Urban Designer, Architect

ULI Philippines Team

Carlos S. Rufino

Chairman

Jocelyn B. Capal

Administrator

ULI Asia Pacific Team

John Fitzgerald

Chief Executive

Stephanie Ng

Director, Memberships and Events

ULI Team

Patrick Phillips

Chief Executive Officer

Lela Agnew

Executive Vice President, Communications

Kathleen B. Carey

Executive Vice President/Chief Content Officer

David Howard

Executive Vice President, Development and ULI Foundation

David Rose

Copy Editor

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1025 Thomas Jefferson Street, NW
Suite 500 West
Washington, DC 20007-5201
United States
www.uli.org

ULI Asia Pacific

Level 16, Nexus Building, 41 Connaught Road, Central
Hong Kong
uli_asiapacific@uli.org

ULI Japan

COI Uchikanda Building 8F, 3-2-8 Uchikanda, Chiyoda-ku
Tokyo 101-0047
info@japan.uli.org

ULI Philippines

Unit 9-2, 9/F Net One Center, 3rd Ave. cor. 26th St., Bonifacio Global City,
Taguig City, Metro Manila, Philippines 1634
ULI_Philippines@uli.org
uliphilcouncil@gmail.com