

DEPARTMENT OF FINANCE (DOF)
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)
DEPARTMENT OF INTERIOR AND LOCAL GOVERNMENT (DILG)
THE REPUBLIC OF THE PHILIPPINES

**THE URGENT DEVELOPMENT STUDY ON
THE PROJECT ON
REHABILITATION AND RECOVERY
FROM TYPHOON YOLANDA
IN
THE PHILIPPINES
FINAL REPORT (I)
SUMMARY**

JUNE 2015

JAPAN INTERNATIONAL COOPERATION AGENCY

**ORIENTAL CONSULTANTS GLOBAL CO., LTD.
CTI ENGINEERING INTERNATIONAL CO., LTD.
PACIFIC CONSULTANTS CO., LTD.
YACHIYO ENGINEERING CO., LTD.
PASCO CORPORATION**

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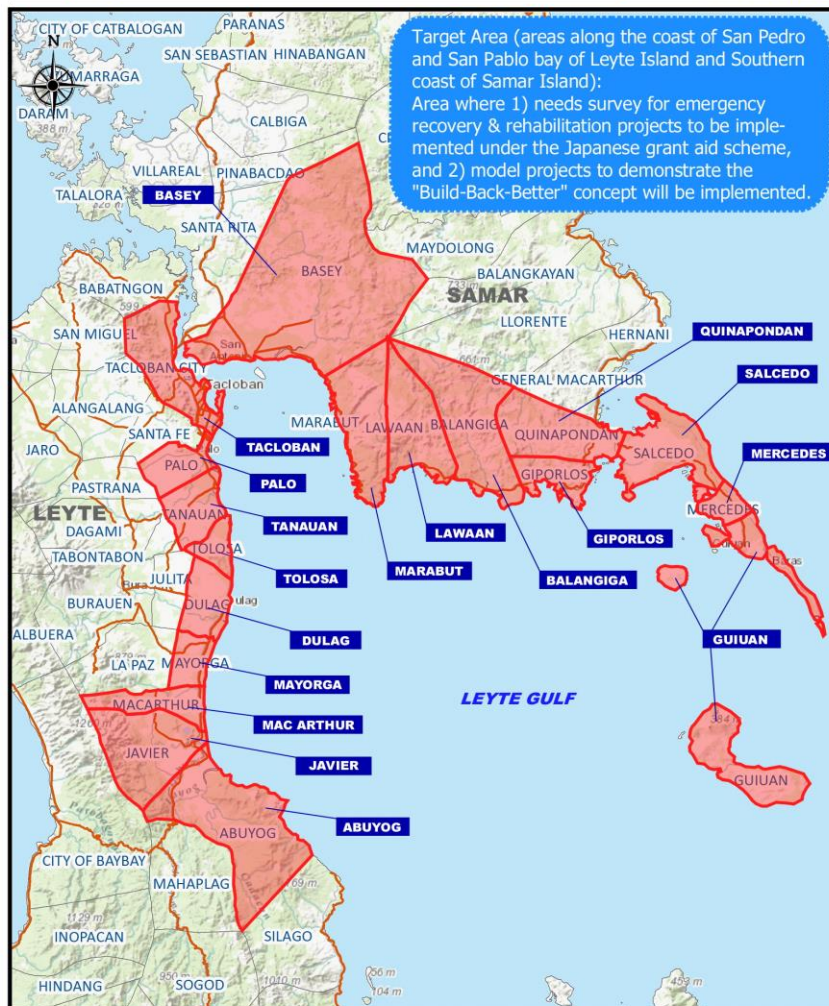
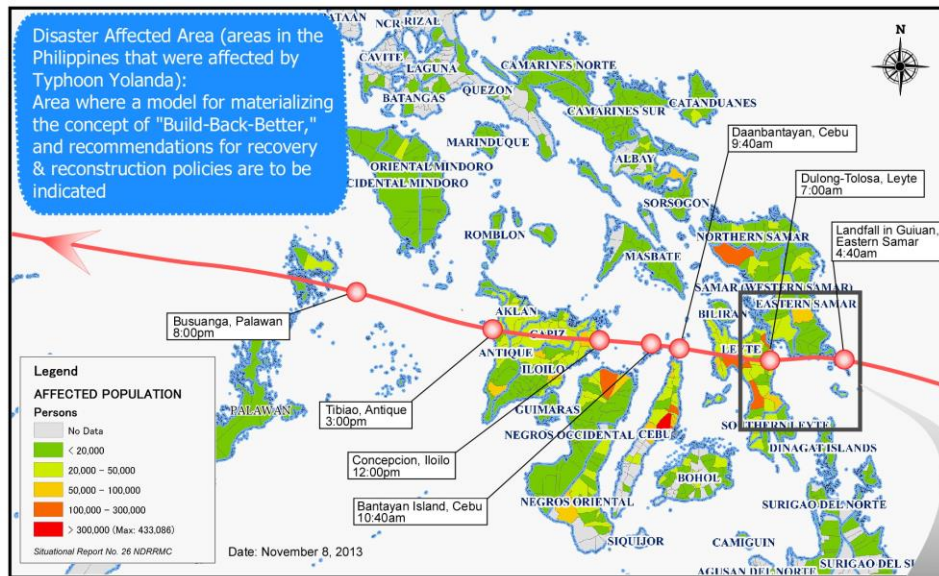
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Composition of Final Report (I)

Summary		
Main Report	Volume 1	Recovery and Reconstruction Planning
	Volume 2	General Grant Aid Project
	Volume 3	Quick Impact Projects
Appendix		Technical Supporting Report

US\$ 1.00 = Philippines Peso (PHP) 44.56 = Japanese Yen ¥ 123.96
(June, 2015)



Map of the Disaster Affected Area and Target Area

Executive Summary

1. Grasping of the Disaster Situation by Typhoon “Yolanda” and Understanding of Recovery and Reconstruction Policy of the Philippine Government

The Republic of the Philippines (hereinafter, “the Philippines”) has experienced severe damage by the Typhoon Yolanda in 36 of its provinces and the total over 7000 victims and missing and 89.5 billion PHP were caused. Region VIII was the most seriously affected and particularly LGUs along the sea shores of Leyte Gulf (eastern coasts of northern Leyte Island and on the southern coast of Samar Island). The Philippine Government immediately issued a national emergency declaration and set-up OPARR to coordinate between LGUs to develop CRRP. The president also announced to establish RAY which is mainly prepared by NEDA. Simultaneously, the Government asked the international community for their support in emergency relief. In response, international organizations and donors are currently providing support for the “emergency” phase such as delivery of food and water, medical and hygienic relief, construction of evacuations sites, and clearing of debris. Considering that the subsequent phase will be “recovery and reconstruction,” a multilayered approach for disaster relief, comprised of both measures for reconstructing social infrastructure as well as those for formulating a society / region that is more resilient to disasters, should be applied by donor organizations aiming at materializing the concept of “Build-Back-Better.”

The Japan International Cooperation Agency (JICA) dispatched an expert team for international emergency relief to the Philippines on November 26, 2013 to identify the needs for recovery and reconstruction as well as to find actual projects that should be supported immediately.

As a result, the Project was identified targeting the severely hit coasts of San Pablo and San Pedro of Leyte Island and the southern coasts of Samar Island as model area.

2. Framework of Urgent Recovery and Reconstruction Aid and Activity Summary

The Project, which has been implemented as a Development Study-Type Technical Cooperation, aims to comprehensively support the process of recovery and reconstruction; early recovery & reconstruction of the areas affected by Typhoon Yolanda and the formulation of a disaster resilient nation / society, taking the lessons learned from past disasters in Japan in consideration.

Priority recovery & reconstruction projects that was identified in the course of the Project has been implemented within the Project frame, with due consideration to local participation. At the same time, efforts was made to link other priority needs to other Japanese assistance schemes including grant aid and loans. In order to facilitate collection of information, and preparation and implementation for such priority activities in a prompt manner, project formulation and technical support (design and cost estimation) was also carried out through this Project.

The Target Area of this study includes 18 LGUs along the Leyte Gulf: namely,

- Leyte Province: Tacloban, Palo, Tanauan, Tolosa, Dulag, Mayorga, Macarthur, Javier, and Abuyog;
- Samar Province: Basey and Marabut;
- Eastern Samar Province: Lawaan, Balangiga, Giporlos, Quinapondan, Salcedo, Mercedes, and Guiuan.

3. Supporting on Development of Comprehensive Recovery and Reconstruction Plan

A recovery and reconstruction process of the Study Area is guided by three principles proposed for the recovery and reconstruction policy: (1) Building safer cities, (2) Recovering people's daily lives, and (3) Restoring the regional economy and promoting industries.

Among the targeting 18 LGUs of the JICA Study, 5 LGUs such as Tacloban, Palo, Tanauan, Basey and Guiuan were selected as the model areas and have been given the technical support on the comprehensive planning on recovery and reconstruction including the interpretation of JICA hazard maps.

LGU(s) have been mandated by some guidelines to consider the hazard assessment mainstreaming climate change in various planning process such as CLUP after Typhoon Yolanda. At the same time, most of the LGUs are facing the end of period of present local plans such as CLUP. In parallel to the above, JICA Study Team proposed some fine tuning of the existing local plans by September 2014 based on the hazard map interpretation in the course of technical support for planning in the model areas.

The LGUs in the model areas are planning to implement some projects and update the existing plans after 2015.

3.1. Building Safer Cities

The recovery and reconstruction approach aims at disaster mitigation primarily for protection of human lives. Development of recovery and reconstruction policy requires careful consideration of topography and spatial structure of urban settlements for comprehensive evaluation of preventive effectiveness, costs, and construction periods of various countermeasures.

3.1.1. Hazard Analysis

In this study, hazard maps of storm surge, flood inundation and tsunami are prepared. In particular, simulation analysis was conducted for hazard analysis of storm surge and flood inundation.

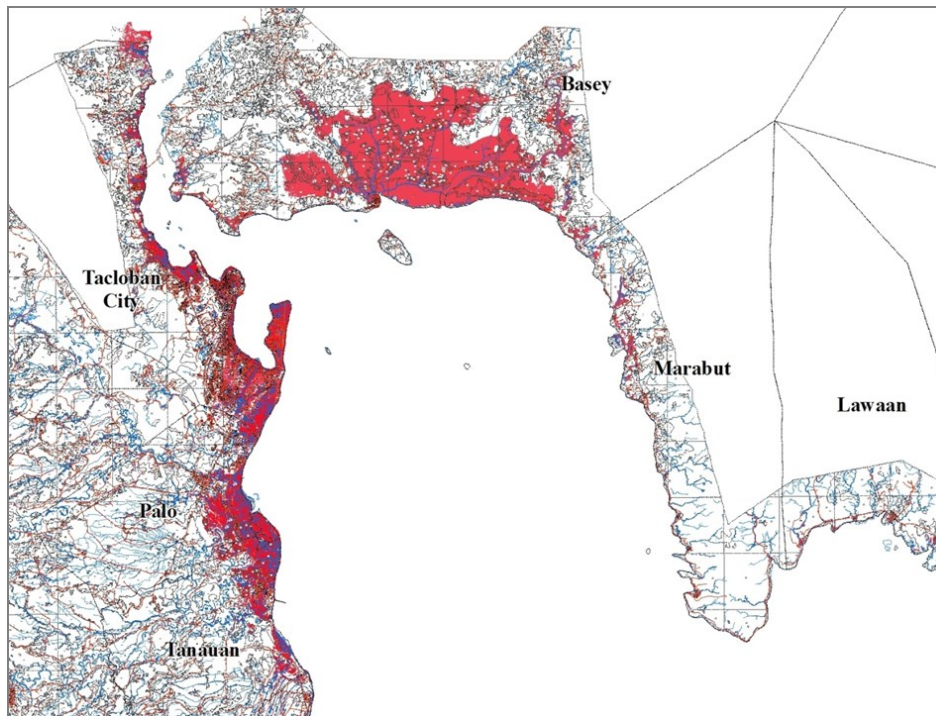
Table 1: Objectives, Procedures, and Outputs of Hazard Analysis

Hazard	Objectives	Procedures	Hazard Maps (Information)
Storm Surge Simulation Analysis	<ul style="list-style-type: none"> • Clarification of mechanism for storm surge and factors causing the storm surge disaster • Establish the target level or magnitude of external forces to be reflected into the planning for DRRM • Determination of information items to be indicated on the hazard maps 	<ol style="list-style-type: none"> (1) Establishment of the simulation model by using the data collected and setting of the simulation scenarios. (2) Performance of the simulation of storm surge and inundation analysis by Typhoon Yolanda. (3) Setting of the details of assumed typhoon by clarification of conditions of the past storm surge events. (4) Performance of the simulation for the assumed typhoon and determination of the information items on the hazard maps 	Storm surge hazard map a) Inundation area b) Inundation depth c) Arrival time of storm surge (Not described)
Wind	<ul style="list-style-type: none"> • Evaluate the wind speed 	<ol style="list-style-type: none"> (1) Data collection: collection of topographical 	Wind speed distribution maps

Simulation Analysis	<p>caused by Typhoon Yolanda.</p> <ul style="list-style-type: none"> • Prepare a wind speed distribution map • Estimate the distribution of the wind speed as well as its time series variation to determine timing of evacuation 	<p>data of the land area</p> <ol style="list-style-type: none"> (2) Establishment of simulation model: creation of terrain model, fixing ground roughness for forests and other areas (3) Calculation of wind speed ratio (4) Wind speed distribution map: creating wind speed distribution map 	<p>(10-min sustained wind speed)</p> <ol style="list-style-type: none"> a) Maximum value b) Every 30 minutes from 4:30 am on Nov. 8 2013 to 7:30 am on Nov. 8 2013.
Flood Inundation Simulation	<ul style="list-style-type: none"> • Evaluate flood hazard as a part of the multi-hazard analysis 	<ol style="list-style-type: none"> (1) Data collection (2) Rainfall analysis (3) Flood condition survey (4) Evaluation of flood characteristics (5) Flood inundation analysis (6) Flood inundation mapping 	<p>Flood inundation map</p> <ol style="list-style-type: none"> a) Inundation area b) Inundation depth

Source: JICA Study Team

It is important to choose the level of external force (magnitude of the storm surge) that fits the purpose of “Hazard Maps”. In general, hazard maps are made based on the maximum external force that is predicted to happen.

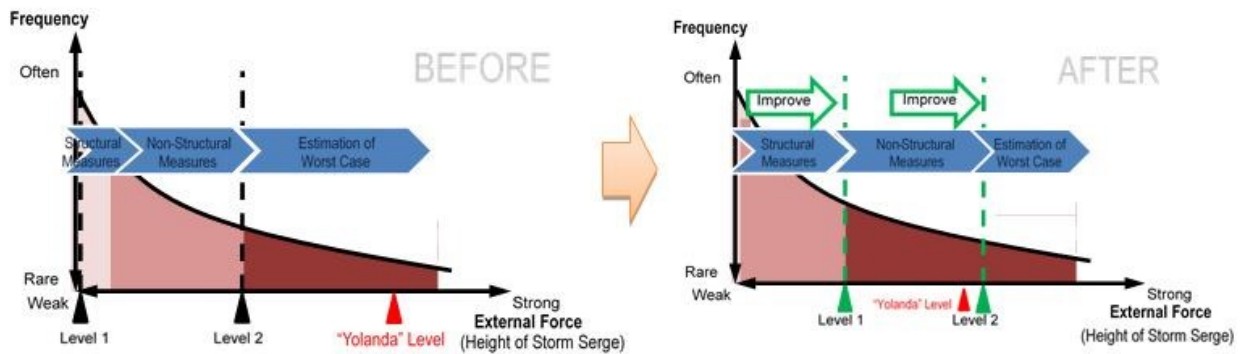


Source: JICA Study Team

Figure 1: High Hazard Zone of Storm Surge in the Study Area

The idea of external force level is easily understood in relation with measures to be taken against each external level. External force is the maximum level of force against which structural measures or non-structural measures withstand or are effective in prevention of disaster.

By improving structural measures (i.e. heightening an existing road, provision of tidal embankment, etc.) external force level shall be minimized.



Source: JICA Study Team

Figure 2: Before and After Improvement of Disaster Mitigation Measurements

As for non-structural measures, an evacuation plan can be improved by examining the locations of evacuation centers and evacuation routes. By taking consideration together with Structural Measures and Non-Structural measures for improving countermeasures against storm surge, it is possible to prevent disaster even if an enormous typhoon such as “Yolanda” strikes the region.

3.1.2. Structural Measures

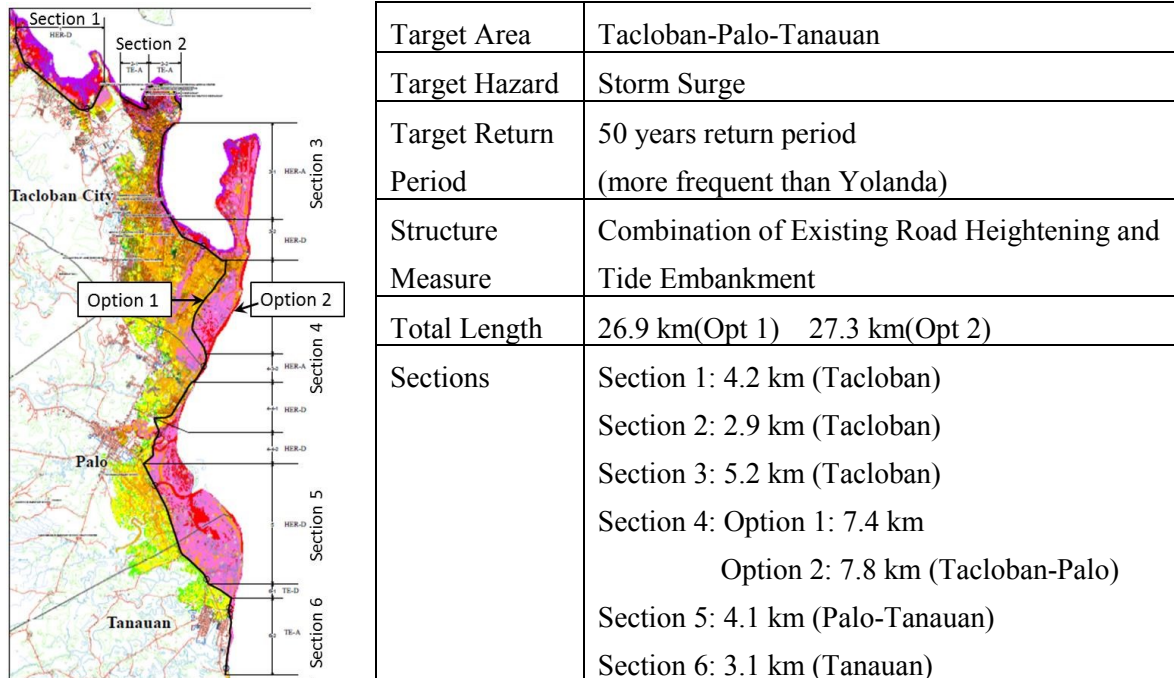
Development of structural measures should be promoted if disaster risk and damage could be significantly reduced and prevented by installing structural measures such as tide embankments or seawalls. Structural measures are most expected for protection of built-up urban areas where economic and business activities are concentrated. Learning from the experiences of Yolanda, disaster resilient nation building should be promoted by expanding the policies for installing structural measures to nationwide level.

Table 2: Policy for Structure Measure

Policy		Projects/ Programs	Organization/ Agency	Implementation term		
				Short-term	Mid-term	Long-term
Build safer cities by structural measures	Develop major protection facilities against disasters	Construction of tide embankments/ seawalls/ river dikes	DPWH			
		Elevation of arterial roads	DPWH			
	Promote structural measures throughout the country	Need assessment of structural measures throughout the country	DPWH/ LGUs			
		Construction of structural measures in priority areas	DPWH			

Source: JICA Study Team

The Construction of Heightening of existing road and tidal embankment at Tacloban-Palo-Tanauan was decided by Philippine Government based on the Hazard Analysis performed by JICA Study Team, and Section 3 and 4 were selected as poetized section to be implemented.



Source: JICA Study Team

Figure 3: Outline of Structure Measures

In addition, there is a need for comprehensive disaster prevention and mitigation. To do this, the implementation of structural measures and non-structural measures is important.

3.1.3. Non-Structural Measures

A decision of relocation is one of the most important issues in land use policy development. A newly proposed no dwelling zone policy to specify safe, unsafe and controlled zones after the Yolanda calls for a careful study of its effectiveness and impact on the community. For the delineation of safe, unsafe and controlled zones, LGUs should develop own criteria acceptable to their citizens, examining hazard maps and anticipated damages.

A primary strategy for disaster mitigation is evacuation because weather disasters such as typhoons are predictable. The level of community preparedness greatly impacts the risk of and vulnerability to disasters so that appropriate support for evacuation, such as evacuation drills and education, development of evacuation centers, selection of evacuation routes, identification of high risk areas and the vulnerable, etc. should be provided for the community in advance. At the same time, special attention should be made to the vulnerable group such as the children, women, senior citizens, disabled, etc. in the whole aspect of the non-structure measures by leaders of LGUs, barangay with inclusive of community. A community evacuation plan describing evacuation strategies needs to be

prepared based on hazard map analysis and consideration for the vulnerable.

In order to reduce the area's disaster risk as disaster prevention plan, there is a need for a system to manage the disaster. To do this, the development of the management system of disaster information, strengthening of disaster management and public information dissemination capacity, the creation of municipal level DRRM, strengthening of community level DRRM, it is important to the spread of disaster prevention education.

3.1.4. Response of Model Area to Recent Typhoons

The large-scale typhoon Ruby which landed on Dec.6, 2014 in Eastern Samar was a major typhoon affecting the model areas after the JICA Seminar in Nov. 17, 2014. Thus, the response of the model area to typhoon Ruby was an occasion to put into practice what they learnt in particular the response to the evacuation in the seminar as well as the workshops.

JICA Study Team provided the storm surge hazard maps with LGUs, international donors and INGOs based on their request to the team prior to the typhoon Ruby landing. Thus using the already recognized JICA hazard maps, the check of evacuation center and evacuation route were conducted by LGU, INGOs supported by international donors. JICA Study Team conducted a questionnaire survey on the LGU's response to typhoon Ruby in January 2015.

Based on the above survey the following analysis was made.

- Hazard map was utilized to check the affected area, to check the capacity of evacuation center and evacuation route.
- It was difficult to response to typhoon Ruby in the halfway of preparing evacuation centers
- Safe evacuation was accomplished, nevertheless of the lack of evacuation centers. Effort was done to compensate the gaps between the capacity of evacuation center and the number of people to be evacuated.
- Conclusion: Each LGUs have accomplished a certain degree of achievement in Disaster reduction planning and discussion on evacuation plan

Also, Future challenges recognized in the model area by typhoon Ruby

- Continuous effort to compensate the gap between the capacity of evacuation centers and evacuee population
- Challenges in transportation of evacuees
- Challenges in stock and supply of food in evacuation centers
- Challenges in identification of affected population and confirmation of residents safety and ID
- Ensuring the reliability of communication of disaster information, emergence warning system and safety confirmation

- Promoting hazard map and disaster reduction education
- Human resource development in LGU for disaster reduction measures and risk management
- Strengthening cooperation between social sector and schools as an information desk of disaster reduction

The landslide caused by the tropical storm Seniang occurred in the places where the existing hazard map has not identified.

The landslides occurred not only in the mountain but also on the steep slope on which residential houses were placed in downtown of Tacloban.

It is understood that the some mountain areas lost the water retention potential because of the land cover change. The residential steep slope areas may have inappropriate foundation and drainage system, which are quite vulnerable for heavy rainfall.

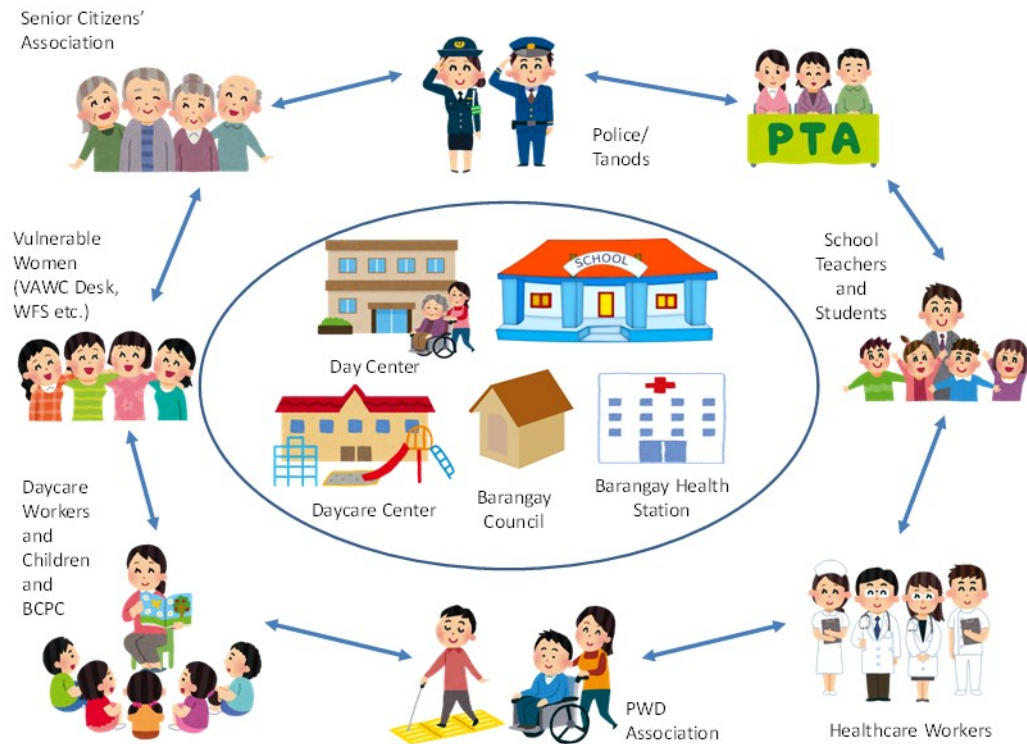
In such way, the model areas has potential of various kind of natural hazards other than storm surge, especially caused by heavy rainfall.

LGUs in the model area recognized this and should have capacity to handle wide variety of natural hazards

3.2. Recovery of People's Daily Life

In order to activate strongly the community affected by disaster, it is necessary to enhance resistance of community to disaster. To do so, reconstruction of shelters of community, supply of housing to support the self-help efforts, capacity building of DRRM committee of barangays, the creation of barangay level of vulnerability map is important. In addition, mutual assistance is necessary to establish a community that mainly, ensure clear communication between the relocated residents in it, the promotion of dialogue in the community, reconstruction of Barangay Hall and the like are important.

Presently, one of the biggest gaps observed in the social sector is the lack of systematic integration of DRRM at municipal/city and barangay levels. While MDRRMCs' capacity has increased to coordinate preparedness and response across various sectors and between municipality and barangay levels, generally, comprehensive contingency plans, evacuation plans and community vulnerability maps have yet to be developed or updated after Yolanda.

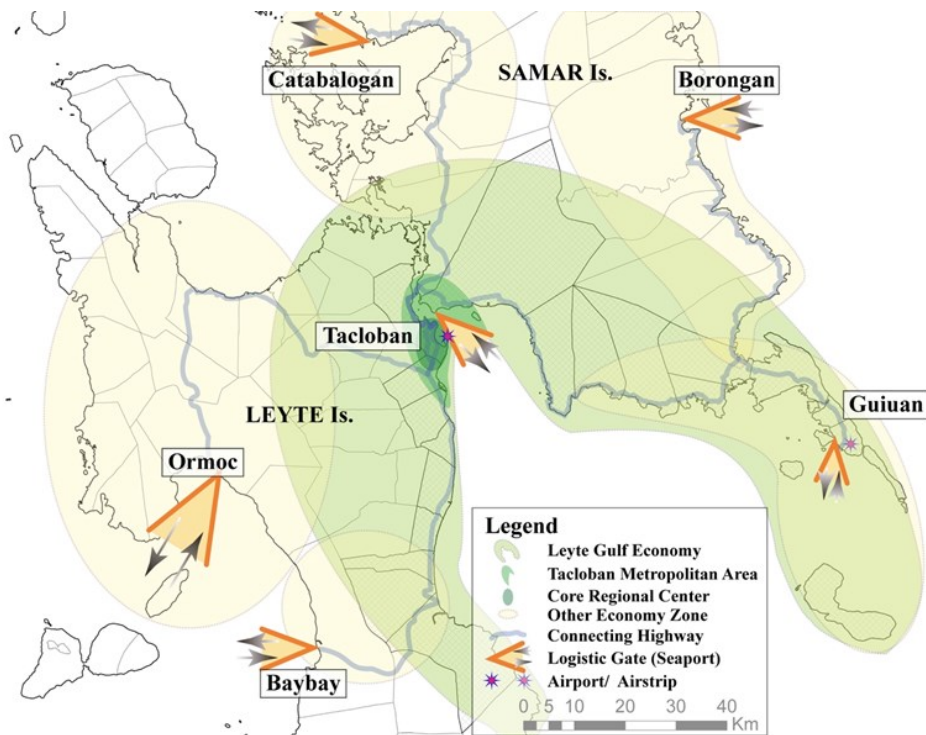


Source: JICA Study Team

Figure 4: Barangay Actors to Rebuild a Disaster-resilient and Inclusive Community

3.3. Restoration of Local Economy and Promote Industry

The Leyte Gulf Area where Yolanda hit most seriously among the affected areas has a potential of formulating a united economy area considering the geographic and transport system development conditions.

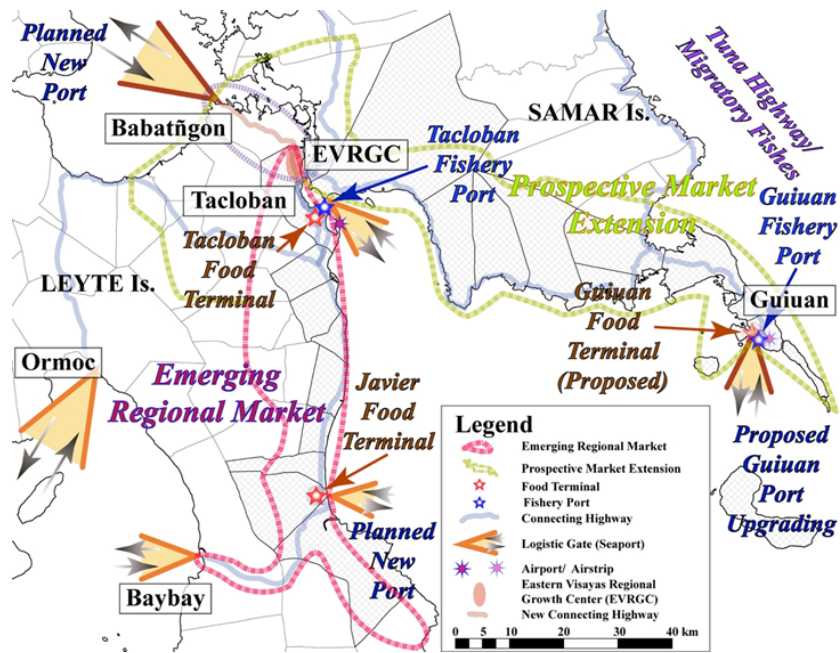


Source: JICA Study Team

Figure 5: Possible Leyte Gulf Area Economy

Considering the potential for formulating the economy area following directions for re-development of the area economy have become evident among stakeholders other than the directions of re-planting of coconut trees and modernization of traditional crop farming such as paddy:

- Formulation of regional market as a base for the efficient economy activities,
- Agro/ fishery enhancement by crop diversification and value chain fostering,
- Coordinated tourism promotion and development with Tacloban Gateway Town,
- ICT industry promotion utilizing advanced ICT infrastructure covering Tacloban and Palo with existing 2 ICT industrial parks, and
- Innovative technology based industry promotion.



Source: JICA Study Team

Figure 6: Formulation of Regional Market and Key Facilities

Each LGU's Direction for Development beyond the Recovery was discussed based on its locational and resources potentials. Necessity of Collective Approach as Region/ Area is recognized.

4. Program Grant Aid Projects

By the typhoon Yolanda, the region suffered catastrophic damage to houses, public facilities such as schools, government office buildings and medical institutions, transport infrastructures including bridges, roads, airports and harbors, and finally, public services such as drinking water, sewerage, and electricity.

Considering the above mentioned circumstances, to support the early recovery activities in devastated areas through the facility reconstruction and equipment procurement, especially targeting prioritized activities among the social infrastructures such as medical institutes, schools and government office buildings, economic infrastructures and disaster management infrastructures with the aim of contribution to a disaster resilient society, the facilities to be constructed with grant aid were studied based on the following policies considering the result of a site survey and consultation with a counterpart agency.

- The study was carried out with the principle of quick rehabilitation of infrastructures, facilities and equipment.
- In order to reduce the damage when another typhoon which has the same strength as Typhoon Yolanda comes, design criterion was applied for designing successful examples for disaster resilient construction of infrastructures, facilities, and equipment.
- The project was classified as a “General Grant Aid Project” to ensure transparency in the procurement process for disaster recovery and reconstruction, which was mentioned by the Presidential Assistant for Rehabilitation and Recovery.

In the JICA Study, 15 of construction projects and 5 of procurement of equipment projects were formulated as “Program grant aid project”. Based on the output from the Study, construction and procurement will be implemented.

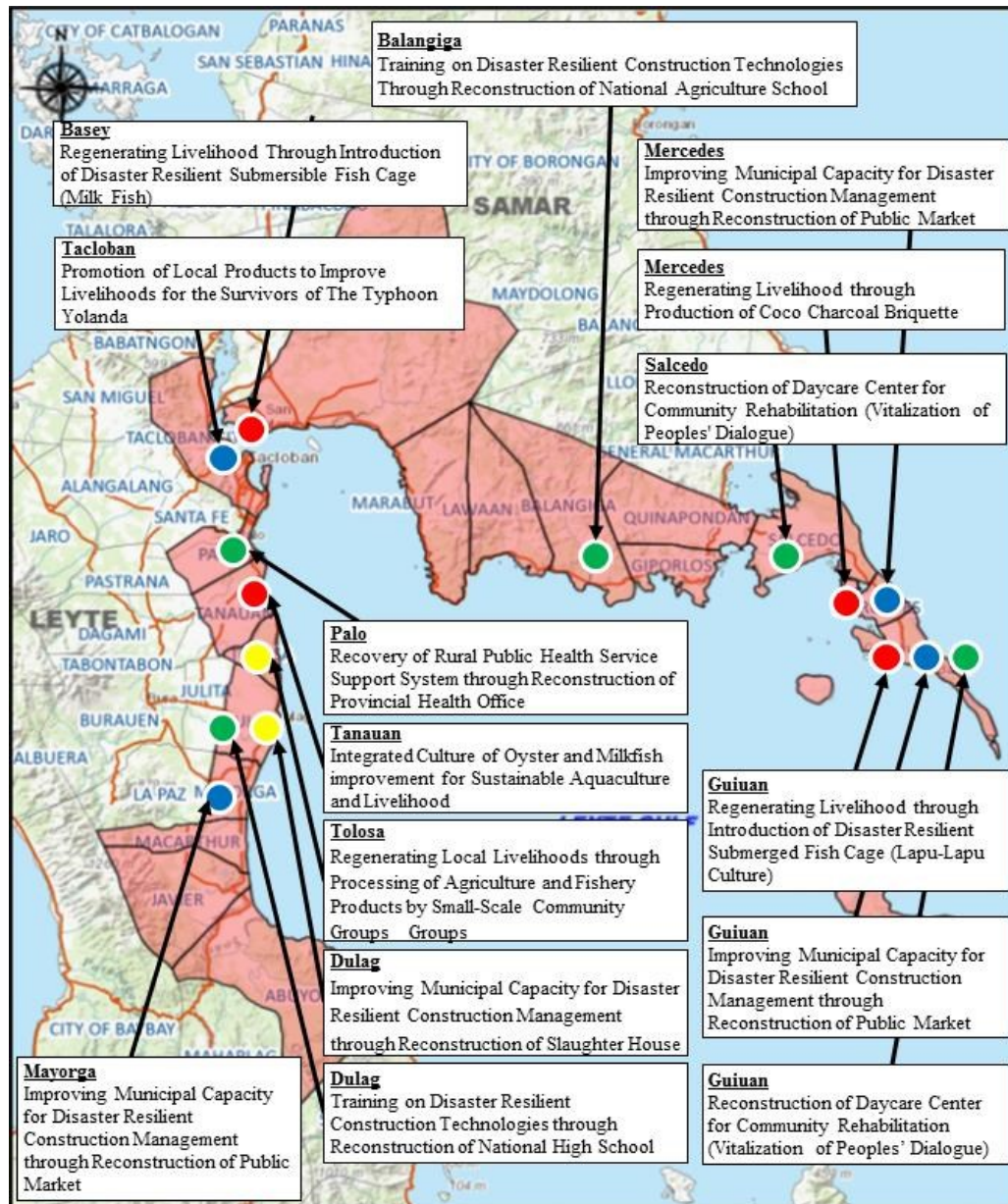
Table 3: Program Grant Aid Projects

Items			Implementing Agency	Remarks	
1. Recovery of Basic Human Needs	Reconstruction of Elementary School		Facilities	1. DPWH 2. DepEd	
	Reconstruction of Medical Facilities	EVRMC	Facilities	3. DOH	Building for Outpatient
		RHU Facilities	Facilities	1. DPWH 3. DOH	4 locations
		RHU Equipment	Equipment	3. DOH	4 locations
	Rehabilitation of Electricity Equipment		Equipment	4. DOE	Boom Truck with Bucket and Winch: 7 units Boom Truck with Digger and Crane: 7 units
2. Recovery of Livelihood and Economic Activity	Recovery of Construction Equipment		Equipment	1. DPWH	Dump Truck, etc.
	Rehabilitation of Equipment for National Maritime Polytechnic		Equipment	5. DOLE	Fast rescue boat and Davit, etc.
	Rehabilitation of Equipment for Guiuan Marine Fisheries Development Center		Equipment	6. DA	Sterilizer, etc.
3. Rehabilitation of Damaged Public Infrastructure	Rehabilitation of Equipment for Tacloban Airport		Equipment	7. DOTC	Airport Rescue and Fire Fighting Vehicles, etc.
4. Rehabilitation of Disaster Prevention System	Reconstruction of Local Government Office		Facilities	1. DPWH 8. DILG	2 locations

Source: JICA Study Team

5. Quick Impact Projects

In this study, 15 QIPs have been carried out to contribute to urgent recovery and reconstruction in the Study site and promote to improve livelihood as well as transfer technology of Japan. QIPs are divide in 4 groups, (1) Production/ cultivation, (2) Processing, (3) Distribution/ market, and (4) Public service/ human resource development. The project sites are shown in the following map.



Source: JICA Study Team

Figure 7: Location of QIPs

5.1. Evaluation on Quick Impact Projects

In terms of relevance, effectiveness and impact, efficiency, sustainability, the implemented QIPs can be evaluated in the course of the JICA Project.

In the fifteen (15) Quick Impact Projects, public facilities have been restored and local livelihood of disaster victims have been regenerated introducing disaster resilient technologies and management. The implementation of the QIPs is consistent with the three (3) principles of development policy and needs for Recovery and Reconstruction from Typhoon Yolanda both during the planning stage and ex-post evaluation.

Table 4: Relevance of QIPs

QIP No.	Name of Municipality	Project Name	Major C/P Agency	Facility	Project Purpose	Target Group	Building Safer Cities			Recovering People's Daily Life				Restoring Regional Economy		
							Introducing Technologies in Japan	Structural Measures	Non-Structural Measures	Healthcare	Education	Social Welfare	Livelihood Improvement	Agriculture	Fishery	Services and Industry
Type A: Training/Capacity Development for Disaster Recilient Construction Technologies/Management & Function Recovery																
QIP-02	Palo	Recovery of Rural Health Service Support System Through Reconstruction of Provincial Health Office	PHO	PHO Reconstruction	Recovery of PHO System	PHO, RHU, PHO Users		Disaster Recilient Building	Function Securing at Disaster	Function Recovry					Local Industry Vitalization	
QIP-04	Balangiga	Training on Disaster Resilient Construction Technologies Through Reconstruction of National Agriculture School	TESDA	National Agriculture School Reconstruction	Training on Construction Technologies	TESDA graduates/trainers, School teachers/trainees	Training by Japanese Skilled Worker	Disaster Recilient Building	Function Securing at Disaster		Training on Japanese Technology				Local Industry Vitalization	
QIP-05	Dulag	Training on Disaster Resilient Construction Technologies Through Reconstruction of National High School	TESDA	National High School Reconstruction	Training on Construction Technologies	TESDA graduates/trainers, School teachers/students	Training by Japanese Skilled Worker	Disaster Recilient Building	Function Securing at Disaster		Training on Japanese Technology				Local Industry Vitalization	
QIP-10	Dulag	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Slaughter House	Municipality of Dulag	Slaughter House Reconstruction	LGU Capacity Development	LGU, House users		Disaster Recilient Building	Function Securing at Disaster		Capacity Development of LGU Staff				Local Industry Vitalization	
QIP-09	Guiuan	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Public Market	Municipality of Guiuan	Public Market Reconstruction	LGU Capacity Development	LGU, Market tenants		Disaster Recilient Building	Function Securing at Disaster		Capacity Development of LGU Staff				Local Industry Vitalization	
QIP-11	Mercedes	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Public Market	Municipality of Mercedes	Public Market Reconstruction	LGU Capacity Development	LGU, Market tenants		Disaster Recilient Building	Function Securing at Disaster		Capacity Development of LGU Staff				Local Industry Vitalization	
QIP-12	Mayorga	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Public Market	Municipality of Mayorga	Public Market Reconstruction	LGU Capacity Development	LGU, Market tenants		Disaster Recilient Building	Function Securing at Disaster		Capacity Development of LGU Staff				Local Industry Vitalization	
Type B: Introduction of Disaster Recilient Technologies & Community Rehabilitation																
QIP-06	Salcedo	Reconstruction of Daycare Center for Community Rehabilitation (Vitalization of Peoples' Dialogue)	Municipality of Salcedo	Daycare Center Reconstruction	Vitalization of Community Dialogue	Center users, Community People	Prefabricated Building	Disaster Recilient Building	Function Securing, Disaster Prevention Education		Function Recovery				Local Industry Vitalization	
QIP-07	Guiuan	Reconstruction of Daycare Center for Community Rehabilitation (Vitalization of Peoples' Dialogue)	Municipality of Guiuan	Daycare Center Reconstruction	Vitalization of Community Dialogue	Center users, Community People	Prefabricated Building	Disaster Recilient Building	Function Securing, Disaster Prevention Education		Function Recovery				Local Industry Vitalization	
Type C: Introduction of Disaster Recilient Technologies and/or Sustainable Livelihood Improvement																
QIP-03	Tolosa	Regenerating Local Livelihoods Through Processing of Agriculture and Fishery Products by Small-Scale Community Groups	Municipality of Tolosa	Construction of Livelihood Activities Support Facility	Livelihood Improvement	Community group		Disaster Recilient Building				Promotion	Production Processing	Production Processing	Sales and Marketing	
QIP-01	Basey	Improving Livelihood Through Introduction of Disaster Resilient Submersible Fish Cage	BFAR, Municipality of Basey	Submersible Fish Cage for Milkfish	Livelihood Improvement	BFAR, Fishermen's families	Submersible Fish Cage	Disaster Recilient Facility	Function Securing at Disaster			Promotion		Fishery Cultivation	Processing and Sales	
QIP-08	Guiuan	Introduction of Disaster Resilient Submersible Fish Cage for Lapu-lapu Culture	BFAR, Municipality of Guiuan	Submerged Fish Cage for Lapu-Lapu	Livelihood Improvement	BFAR, Fishermen's families	Submersible Fish Cage	Disaster Recilient Facility	Function Securing at Disaster			Promotion		Fishery Cultivation	Sales and Marketing	
QIP-15	Tanauan	Community Aquaculture Resources Management by Re-establishment of Oyster Farming	BFAR, Municipality of Tanauan		Livelihood Improvement & Resources Management	BFAR, Fishermen's families	Oyster Culture		Function Securing at Disaster		Resource Management	Promotion		Fishery Cultivation	Processing and Sales	
QIP-14	Mercedes	Regenerating Livelihood Through Production of Coco Charcoal Briquette	Municipality of Mercedes		Livelihood Improvement	Farmers' families						Promotion	Production Processing		Sales and Marketing	
QIP-13	Tacloban	Promotion of Local Products to Improve Livelihoods for the Survivors of Typhoon Yolanda	City of Tacloban		Livelihood Improvement & Market Promotion	Production/sales workers (QIPs-1, 3, 14, 15)						Promotion			Sales and Marketing	

Source: JICA Study Team

5.2. Lessons Learned from the Quick Impact Projects

For the construction work aspect, there are a kind of common lessons learned were derived such as concreting, foundation, scaffolding, material issues and safety and payment conditions. These are their issues to be solved immediately, so that further and continuous capacity development is needed.

Regarding the aquaculture projects, significant potential in integrating of milkfish farming and processing in collaboration with the women's group was revealed as well as be sufficient income generation to boost the whole economy.

6. Result of Manila Forum

A forum was held in Tacloban on March 2, 2015 to confirm result and challenges of the Project of about one year, and a forum was also held based on the result in Manila on March 5, 2015. During the Manila Forum the following messages were confirmed.

The outcome through the Project;

- Modified land-use, enhanced people's awareness to disaster prevention, realized early responses to disaster by use of Hazard maps.
- Improved target people's livelihood
- Developed capacity for disaster resilient construction management and livelihood

And Lesson and Learnt from the Project;

- Build common understanding on necessity of disaster prevention among by use of hazard maps
- Seamless improvement of evacuation plan
- Consolidate livelihood means, secure and expand market

Necessary activities to implement to strengthen "Build Back Better";

- Update hazard maps by LGUs for proper disaster prevention: update evacuation center / route
- Clarify prospects of budget disbursement from central government for approval of CRRP
- Ensure appropriate structures taken by smooth coordination between central government and LGUs
- Consolidate and disseminate Project outcomes

In response to the results of the Manila forum, JICA has expressed an extension of this project to further 2016 the end of March in order to ensure the sustainability and consolidate of the outcomes of the project.

7. Recommendations

The Philippines encountered typhoon Yolanda and gained various lessons learned, paying a heavy price. However there are countless issues which remain for the people living in disaster-prone areas like Japan, as the frequent occurrence of serious natural disasters in many countries will happen in the future. It can be pointed out that it is impossible to eliminate the damage by disasters so it is better to focus on disaster prevention and mitigation, which will help the efforts toward reconstruction after disasters.

Just after a disaster happens, when the area loses a lot of things, the actions towards reconstruction starts. The Philippines knows their extent of vulnerability against natural disasters and concentrate on the daily activity of disaster prevention and share the basic policies on reconstruction composed of community activity, enhancement of social welfare and education, and the restoration of local economy contributing to recovery of livelihood resulting in success for the next generations.

At the end of 1st year of the JICA Study, the following key messages were confirmed among all the stakeholders at the JICA Forums in March 2 and 5, 2015:

- Update hazard maps by LGUs for proper disaster prevention: update evacuation centers/routes
- Clarify prospects of budget disbursement from the central government for approved CRRP
- Ensure appropriate structural measures taken by smooth coordination between the central government and LGUs
- Identification of an organization for the operation and maintenance of hazard maps
- Consolidation of livelihood means, securing and expanding markets

The JICA Study Team recognizes the recommendations to be prepared based on the above messages in order to secure the sustainability of the outcome by the JICA Project towards the realization of BBB in the Philippines.

7.1. Recommendations based on Comprehensive Planning Activities

7.1.1. Capacity Development of LGUs for Update hazard maps for proper disaster prevention such as update evacuation centers/routes

As confirmed in the Forums, the proper DRRM planning by each LGU is expected such as updating hazard maps and seamless efforts to update evacuation plans. LGU's DRRM plan is expected to be integrated into CLUP as the mother plan of the LGU. To do this, capacity development of LGUs is highly necessary as explained below.

Institutional Capacity Development

The governments of cities and municipalities based on the Local Government Code should play

major roles on public policies for reconstruction and formulate necessary plans and programs together with local people under the assistance from the central governments.

The improvement of organization, staffing and instruction flow should be necessary in order to work together with local people on a daily basis, revision of local plans, monitoring of work progress and immediate response to emergency.

For example,

- Preparation for disaster prevention in normal time (distribution and education of hazard maps, providing evacuation centers, evacuation routes)
- Planning of local plans (CLUP, CDP, DRRM) based on scientific hazard assessment
- Monitoring of Progress of Planning, Evaluation of Programs and Governance
- Improvement of organization, staffing and instruction flow

Capacity Building of DRRM in Each LGU

LGUs lack in human resources for disaster measures including recovery and reconstruction and risk management. Especially in small scale LGUs, staff with the capacity and technical knowledge of disasters is quite limited. This is one of the reasons why preparation before a disaster and emergence response after the disaster are not always effectively implemented.

Therefore, in a middle or long term time frame, it is necessary to foster human resources with capacity and technical knowledge about disaster reduction and risk management.

Thus, in order to foster officers that can take charge in disaster reduction and risk management on a provincial level, an academic education of disaster reduction and risk management against officers in the mainstay should be considered. Dispatching LGU officials to universities and programs of collaboration with universities are appropriate options.

By receiving education, it is possible to construct a network between the officers in charge of disaster reduction and even in a hazard that effects a broad area like typhoon Yolanda did, it is possible for several LGUs to cooperate and arrange effectively for recovery and reconstruction. Plus, it will be easy to construct a wide range risk management system in the future.

Importance of Community

There has to be a broader and a more people-centered preventive approach to disaster risk reduction practices need to be multi-hazard and multi-sectoral based, inclusive and accessible in order to be efficient and effective.

LDRRMP at the barangay level should be divided into the plan during normal times and the plan during the disasters, in which the organizational arrangement and the procedure of necessary actions are specified. During normal times, prevention measures, education, training, and review of the actions

should be done in order to enhance the capacity of response to the disaster, and deepening the relationship with governmental organizations and NGOs and the publicity actions should proceed. During a disaster, the necessary actions by whom, of what, to what extent and how should be specified for the phase of preparedness, early response, emergency response, recovery and reconstruction.

In addition, the check of emergency storage such as food, the assessment of safety of evacuation center, and the promotion of disaster education and training should proceed.

Inheritance of the Experience of Disaster

Disaster might happen again soon or may happen again after a long time, after the experience is forgotten.

In countries and areas like Japan where natural disasters happen every year, it is often that disaster reduction measures which are imprinted in the lifestyle and festival, and the system is based on the past experience of disaster.

However, because of regeneration and inflow of residents from other areas, disaster experiences in the community are easily forgotten.

In order to never suffer miserable disaster, it is necessary to root the experience to the society as a culture in the lifestyle of residents and companies and into the administrative sector. It is important to think about disasters in a comprehensive way and mature “disaster culture” as an inheritance to the next generation. This should not be done only by the local community but also on the country level.

For example;

Enlightenment of disaster reduction education and inheritance of disaster memorials (release, preserve and arrange disaster records, preparation and preserving of memorial facilities especially for things which needs a vast amount of money to conserve and preserve, support from the country is needed, the idea of a disaster museum on a country level)

Preservation and verification of disaster response and creation and updating of manuals as an organization.

Introduction of a disaster reduction point of view in ordinary plans and systems such as the use of land, social welfare and education.

7.1.2. Clarify Prospects of Budget Implementation from Central Government for Approved CRRP

OPARR’s information management system, the electronic Management Platform: Accountability and Transparency Hub for Yolanda or eMPATHY, was already public. While the OPARR has done the best efforts to assure the accountability and transparency in terms of the progress of recovery and reconstruction, further rapid implementation is expected in the clusters in particular, the social services,

resettlement and livelihood.

7.1.3. Ensure Appropriate Structural Measures Taken by Smooth Coordination between Central Government and LGUs

The GOP decided to implement the project of road heightening and tide embankment from Tacloban to Tanauan which was proposed in the JICA Study. In the course of the planning, design and implementation of the project, DPWH Region VIII office is expected to take a lead role and the Project Implementation shall be supported by the JICA Study Team. The project can be regarded as a pilot project in the Philippines in terms of the introduction of a structural measure for the area devastated by the storm surge in order to build safer cities.

The project is expected to be immediately implemented by DPWH and the experience in the course of the implementation be expanded in other storm surge prone areas in the Philippines.

With regard to the above, in April 2015 the memorandum order 79, providing for the institutional mechanism for the monitoring and of rehabilitation and recovery programs, projects, and activities (PPAs) for Yolanda-affected areas, was signed by the President. Section 1 of MO 79 states that the NEDA Director-General shall assume the coordination, monitoring, and evaluation of all disaster-related PPAs and ensure full implementation of the said MO.

7.1.4. Identification of an organization for the operation and maintenance of hazard maps

Hazard maps, in general, are expected to be updated and modified if necessary, periodically based on the latest disaster event happening and substantial physical change in area. Hazard maps are prepared based on some specific conditions in terms of the hazard occurrence. After a hazard map is disseminated, if a significantly different hazard occurs in terms of its scale and aerial patterns, the current hazard map can be translated carefully and be considered for an update and modification. Also, the topographical map as the supportive background information of the hazard maps are expected to be periodically updated because the physical conditions such as land use, road network, flood control facility, etc. are changing. The JICA hazard maps are not an exception for this issue and can become outdated.

Regarding the preparation and dissemination of hazard maps in the Philippines, a Joint Memorandum Circular (DENR-DILG-DND-DPWH-DOST) was issued in late 2014¹. According to this, DOST is expected to prepare and make available the hazard maps for the 171 cities and municipalities affected by Yolanda, involving the storm surge and other natural disasters at a scale of 1:10,000 or better.

¹ Joint Memorandum Circular (DENR-DILG-DND-DPWH-DOST) , Adoption on hazard zone classification in areas affected by typhoon Yolanda (Haiyan) and providing the guidelines for activities, 2014

DOST is supposed to provide DENR-NAMRIA with all hazard maps for integration into a multi-hazard map and inclusion in the Geoportal. The Geoportal will be managed by DENR-NAMRIA in coordination with DILG, DPWH, DND (OCD) and DOST for access of all concerned.

In this line, at the central government level, hazard maps in the area affected by Yolanda is supposed to be basically prepared by DOST and managed by DENR-NAMRIA.

As the JICA Study Team worked with LGUs in the concerned area affected by Yolanda, the users of the hazard maps are communities, LGU officials and the regional office of line agencies and international communities. Their concerns are how to identify the unsafe and safe zones, how to prepare evacuation plans, and how to enlighten the people's awareness for DRRM. In this sense, such local information must be reflected into the updating work of hazard maps by the central government. However, there are some gaps in terms of the capacity of the central government in order to grasp the local conditions for each LGU as the JICA Study Team conducted its Study in 2014.

The challenging issues are how to collaborate among the LGUs and the central governments in particular DILG, OCD and DOST in terms of reflecting local conditions into hazard maps.

NEDA Region VIII suggests the involvement of Visayas State University (VSU) to carter to this process. The VSU is the Climate Change Research Center of Eastern Visayas.

Scientific hazard maps can be prepared by DOST for each LGU, as already materialized in project NOAH. Each LGU should receive the hazard maps and have the capability to understand and interpret their own hazard extent and make necessary measures by themselves.

7.2. Recommendations based on QIPs Implementation

The recommendations based on the implementation of QIPs are the following items (refer to Main Report Volume 3 Chapter 4.2). The recommendations are categorized into mainly 2 items such as "Regenerating Livelihood" and "Construction Work".

7.2.1. Regenerating Livelihood

- 1) Working with the People in Emergency Livelihood Support Projects
- 2) Flexible Implementation
- 3) Holistic approach to restore aquaculture production
- 4) Follow-up supports
- 5) Strengthening of organizational capacities for group activities
- 6) Developing ownership for the activities through obtaining cash benefit
- 7) Necessity of technical support in restarting agricultural activities

- 8) Continuous Support for the Activities that have not achieved objects

7.2.2. Construction Work

- 1) Payment Condition
- 2) Technical Transfer to LGU Engineers
- 3) Documentation skill of the contractor
- 4) Welding Skills
- 5) Concreting Management
- 6) Support Installation
- 7) Installation of Scaffolding
- 8) Quality Identification of Material
- 9) Alternative for important works
- 10) Fixing of column formwork
- 11) Site Inspection
- 12) Safety Management

7.3. Institutional Framework of Recovery and Reconstruction

For the sake of improvement of recovery and reconstruction, suggestions have been made from a year-long JICA's reconstruction assistance as listed:

- Needs for Strengthening the National Institutional Framework for Recovery and Reconstruction,
- Institutionalization of a Recovery and Reconstruction Plan in a LDRRMP, and
- From Recovery and Reconstruction to Development.

Among the four aspects of DRRM, there have been attempts to improve disaster response and preparedness. It is awaited to take action to enhance the rest of the two aspects of disaster prevention and mitigation, and rehabilitation and reconstruction.

- Adjusting Roles and Functions of the Center, Regions, Provinces, and Cities/ Municipalities in Recovery and Reconstruction
- Capacity Building of NEDA on Recovery and Reconstruction
- Roles of Region and Province
- Promotion of Inter-LGU Cooperation and Regional Linkages

Improving a recovery and reconstruction process not only benefits the affected community by

accelerating the process to bring back to normality but also contributes to improvement of disaster resilience. For the sake, two suggestions proposed are 1) preparation of a manual for recovery and reconstruction planning and 2) preparation of a prior recovery and reconstruction plan as part of a LDDMP.

In order to lead recovery and reconstruction properly, it is necessary to conduct periodical monitoring and evaluation. At first, a plan for assessment of recovery and reconstruction shall be prepared to clarify the goals and objectives of the assessment, evaluation items, evaluation criteria, and indicators, which are derived from the mid-term goals and objectives stated in RRP. The assessment items are to evaluate 1) the progress of implementation of programs and projects for recovery and reconstruction, 2) accomplishment of the stated goals and objectives, and 3) the overall long term recovery and reconstruction. Clear and measurable indicators should be selected to evaluate the micro and macro level progress in recovery and reconstruction.

The results of the assessment become inputs to adjust the policies, and programs and projects in RRP, LDRRMP, local development plans and investment plans. It is recommended to update the RRP periodically in accordance with the progress of recovery and reconstruction. In principle, the monitoring and evaluation schedule should be adjusted to a plan of the revision of the RRP.

The recovery and reconstruction policies proposed in this report are prepared for the planning period of eight years after the disaster. The phases of recovery and reconstruction shift from provision of temporary shelter and emergency livelihood support to rehabilitation and reconstruction of facilities and infrastructure, permanent shelter construction, development of disaster mitigation measures, and recovery of regional economy. Along with the progress of the recovery, reconstruction programs and projects are gradually replaced by programs and projects for DRRM and development in the long run. This transition should be carefully facilitated by reflecting the RRP in R/LDRRMP and local development plans, including CLUP and CDP, PDPFP, and RDP. Particularly, in the case of recovery and reconstruction from a mega disaster like Yolanda, which would bring about devastating impacts on across regions, regional and/provincial strategies for recovery and reconstruction may be required to raise the standard of resilience of the region/ province as a whole. LGOs, organizations and agencies in charge of preparation and implementation of DRRMP, development plans, and relevant programs and projects, such as LGUs, LDRRMC and development council should be engaged in coordination and integration of the strategies for recovery and reconstruction. It is also essential to adjust the strategies, policies, and projects and programs for DRRM and development to the RRP. At the regional level, RDMMC, which is in charge of preparation of RDRRMP, and RDC responsible for approval of RDP and development projects and programs in the region shall be closely coordinated to facilitate the progress of recovery and reconstruction and development.

8. The Way Forward

In the JICA Forums in March 2015, one of the most frequently stressed by the LGUs and the central government was that they were facing the challenge how to assure the sustainability of the collaborative works between the Philippine side and JICA. It was widely recognized that such assuring sustainability definitely contribute to the realization of Build Back Better after typhoon Yolanda.

In this line, it is expected that the JICA Project will continue further focusing on the following.

- Build common understandings on necessity of disaster prevention among LGU officials by use of hazard maps
- Seamless improvement of evacuation plan
- Consolidate livelihood means, secure and expand market

The line agencies of central government as well as LGUs are expected to continue and develop the outcomes in the course of the efforts for recovery and reconstruction toward Build Back Better.

Republic of the Philippines
The Urgent Development Study on
The Project on Rehabilitation and Recovery from Typhoon Yolanda
Final Report (I)
Summary
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Abbreviations

ALS	:	Alternative Learning System
AusAID	:	Australian Agency for International Development
BFAR	:	Bureau of Fisheries and Aquatic Resources
BHS	:	Barangay Health Stations
CCC	:	Climate Change Commission
CDP	:	Comprehensive Development Plan
CDRA	:	Climate and Disaster Risk Assessment
CFS	:	Child-friendly Space
CICL	:	Children in Conflict with Law
CLUP	:	Comprehensive Land Use Plan
CSO	:	Civil Society Organization
CSWDO	:	City Social Welfare Office
DA	:	Department of Agriculture
DENR	:	Department of Environment and Natural Resources
DILG	:	Department of Interior and Local Government
DOE	:	Department of Energy
DEPED	:	Department of Education
DOF	:	Department of Finance

DOH	: Department of Health
DOLE	: Department of Labor and Employment
DORELCO	: Don Orestes Romualdez Leyte Electric Cooperative
DOST	: Department of Science and Technology
DPWH	: Department of Public Works and Highways
DRRM	: Disaster Risk Reduction Management
DSWD	: Department of Social Welfare and Development
EVRMC	: Eastern Visayas Regional Medical Center
ESAMELCO	: Eastern Samar Electric Cooperative
FAO	: Food and Agriculture Organization
FLET	: Fishery Law Enforcement Team
GBV	: Gender Based Violence
GDP	: Gross Domestic Product
GIZ	: Gesellschaft für Internationale Zusammenarbeit
GRDP	: Gross Regional Domestic Product
GRSDG	: Guiuan Recovery and Sustainable Development Group
GRP	: Gross Regional Product
Ha	: Hectare
HFEP	: Health Facility Enhancement Program
HLURB	: Housing and Land Use and Regulatory Board
hPa	: hecto Pascal
IEC	: Information, Education, and Communication
INGO	: International Non-government Organizations
ICT	: Information and Communications Technology
IOM	: International Organization for Migration
IT	: Information Technology
ITCZ	: Inter Tropical Convergence Zone
JICA	: Japan International Cooperation Agency
JRC	: Joint Research Center
LDC	: Local Development Council
LGU	: Local Government Unit
LDRRM	: Local Disaster Risk Reduction and Management
LEYECO	: Leyte Electric Cooperative
LMWD	: Leyte Metropolitan Water District
MFARMC	: Municipal Fisheries and Aquatic Resource Management
MFDC	: Municipal Fisheries Development Center
MHC	: Main Health Center
MHO	: Municipal Health Office

MHPSS	: Mental health and Psycho-social Program
MICE	: Meeting, Incentive, Convention and Event
MDRRMO	: Municipal Disaster Risk Reduction and Management Office
MRF	: Materials Recovery Facility
MSWD	: Municipal Social Welfare Development
MW	: Mega Watt
NAFC	: National Agriculture and Fishery Council
NAMRIA	: National Mapping and Resource Information Authority
NBZ	: No Build Zone
NDRRMC	: National Disaster Risk Reduction and Management Council
NDRRMP	: National Disaster Risk Reduction and Management Plan
NEDA	: National Economic Development Agency
NGCP	: National grid Corporation of the Philippines
NGO	: Non-government Organizations
NHA	: National Housing Authority
NOAA	: National Oceanic and Atmospheric Administration
NSCP	: National Structural Code of the Philippines
NOAH	: Nationwide Operational Assessment for Hazards
OCD	: Office of Civil Defense
OPARR	: Office of the Presidential Assistant for Rehabilitation and Recovery
OSCA	: Office for Senior Citizens Affair
OSY	: Out-of-school youth
PAGASA	: Philippines Atmospheric Geophysical & Astronomical Services Administration
PAR	: Philippine Area of Responsibility
PARR	: Presidential Assistant for Rehabilitation and Recovery
PCA	: Philippine Coconut Authority
PD	: Presidential Decree
PDFI	: Pailig Development Foundation, Incorporation
PDO	: Planning and Development Office
PFDA	: Philippine Fisheries Development Authority
PFZ	: Philippine fault zone
PhATS	: Philippine Approach Total Sanitation
PHIVOLCS	: Philippine Institute of Volcanology and Seismology
PIDSR	: Philippines Integrated Disease Surveillance and Response
PLUC	: Provincial Land Use Committee
PNP	: Philippine National Police

PRAP	:	Poverty Reduction Alleviation Program
PWD	:	People With Disabled
RA	:	Republic Act
RHO	:	Regional Health Office
RHU	:	Rural Health Unit
RRP	:	Recovery and Reconstruction Plan
RAPID	:	Resilience and Preparedness for Inclusive Development
RAY	:	Recovery Assistance for Yolanda
SDCC	:	Social Development Center for children
SNS	:	Social network Services
SPEED	:	Surveillance Post Extreme Emergencies and Disasters
SPED	:	Special Education
SWM	:	Solid Waste Management
TESDA	:	Technical Education and Skills Development Authority
TFP	:	Total Factor Productivity
UN	:	United Nations
UNDP	:	United Nations Development Programme
UNICEF	:	United Nations International Children's Emergency Fund
VAW	:	Violence Against Women
WFS	:	Women-friendly Space
WHO	:	World Health Organization
ZO	:	Zoning Ordinance

Preface

Composition of Final Report (I)

The Final Report (I) is composed of Summary, Main Report and Appendix. The significant study result is included in the Main Report. The Main Report is composed of Vol.1, 2 and 3. The Appendix is the Technical Supporting Report, which contains main the study results from January 2014 until March 2015.

In the Main Report, Volume 1 is Recovery and Reconstruction Planning. Volume 2 is Japan Grant Aid Project. Volume 3 is Quick Impact Projects.

In the Volume 1, there are three parts namely Part 1, 2 and 3. The Part 1 is the proposed general policies for recovery and reconstruction after Typhoon Yolanda. The Part 2 is the technical assistance on comprehensive recovery and reconstruction planning for the model areas until September 2014 by JICA Study Team. The Part 3 is the outcome and remaining challenges by Philippine side, which were discussed in JICA Forum in March 2015, and draft recommendation by the JICA Study Team.

Chapter 1 Outline of JICA Urgent Development Study

1.1 Background

The Republic of the Philippines (hereinafter, “the Philippines”) has experienced severe damage by the historical storm surge and strong wind in thirty-six of its provinces from the devastating typhoon “Yolanda,” which occurred on November 8, 2013. The total number of victims and missing was over 7,000 and the economic loss reached 89.5 billion Php.

Region VIII was the most seriously affected area on which the powerful typhoon landed among the Yolanda affected area, particularly on the eastern coasts of northern Leyte Island and on the southern coasts of Samar Island.

The Philippines Government after the disaster occurred, quickly responded. Executive Office of the President issued a national emergency declaration on November 11, 2013, based on the advice of the National Disaster Risk Reduction Management Committee (NDRRMC).

The Executive Office of the President on December 6, 2013, set up the Office of President Assistance Rehabilitation and Reconstruction (OPARR) chaired by Senator Lacson. The role of the office was the coordination of rehabilitation and reconstruction planning of LGU with NDRRMC and leading authorities, and the support of the budget of the rehabilitation and reconstruction plan.

The President, on December 18, 2013, announced the Rehabilitation Assistance for Yolanda (RAY) which was prepared mainly by NEDA.

OPARR instructed the creation of a recovery and reconstruction plan to local governments (LGUs) that were affected by the typhoon Yolanda.

From November 26, 2013, the Japan International Cooperation Agency (JICA) has dispatched an expert team for international emergency relief to the Philippines to identify the needs for reconstruction and recovery as well as to find actual projects that should be supported immediately.

As a result, two subjects were identified as priority projects targeting the severely hit coasts of San Pablo and San Pedro of Leyte Island and the southern coasts of Samar Island as a model area: 1) Preparation of recovery & reconstruction plans (RRPs) and recommendations for further expanding of the plans to areas outside of the model area, Implementation of pilot projects, and Planning and designing of emergency recovery and reconstruction projects which are expected to be implemented through Japanese grant aid; and 2) Early recovery of the weather radar system in Guiuan on Samar Island that was damaged by Typhoon Yolanda, which is essential for weather observation in Region VIII. This project aims to cover “item 1)” of the above.

1.2 Study Contents

The Project, which was implemented as a Development Study-Type Technical Cooperation, aims to comprehensively support the process of recovery and reconstruction; early recovery & reconstruction of the areas affected by Typhoon Yolanda and the formulation of a disaster resilient nation / society, taking into view the lessons learned from past disasters in Japan. The Project is composed of the following three (3) components.

Component 1: Outcomes related to general issues on recovery and rehabilitation of disaster damage

Component 2: Formulation of Recovery & Reconstruction Projects

Component 3: Implementation of Emergency Recovery & Reconstruction Projects as Pilot Quick Impact Projects (improvement of livelihood, strengthening of public services, etc.)

The Project started January 2014 and lasts until May 2015 (Refer to Figure 1.3-1).

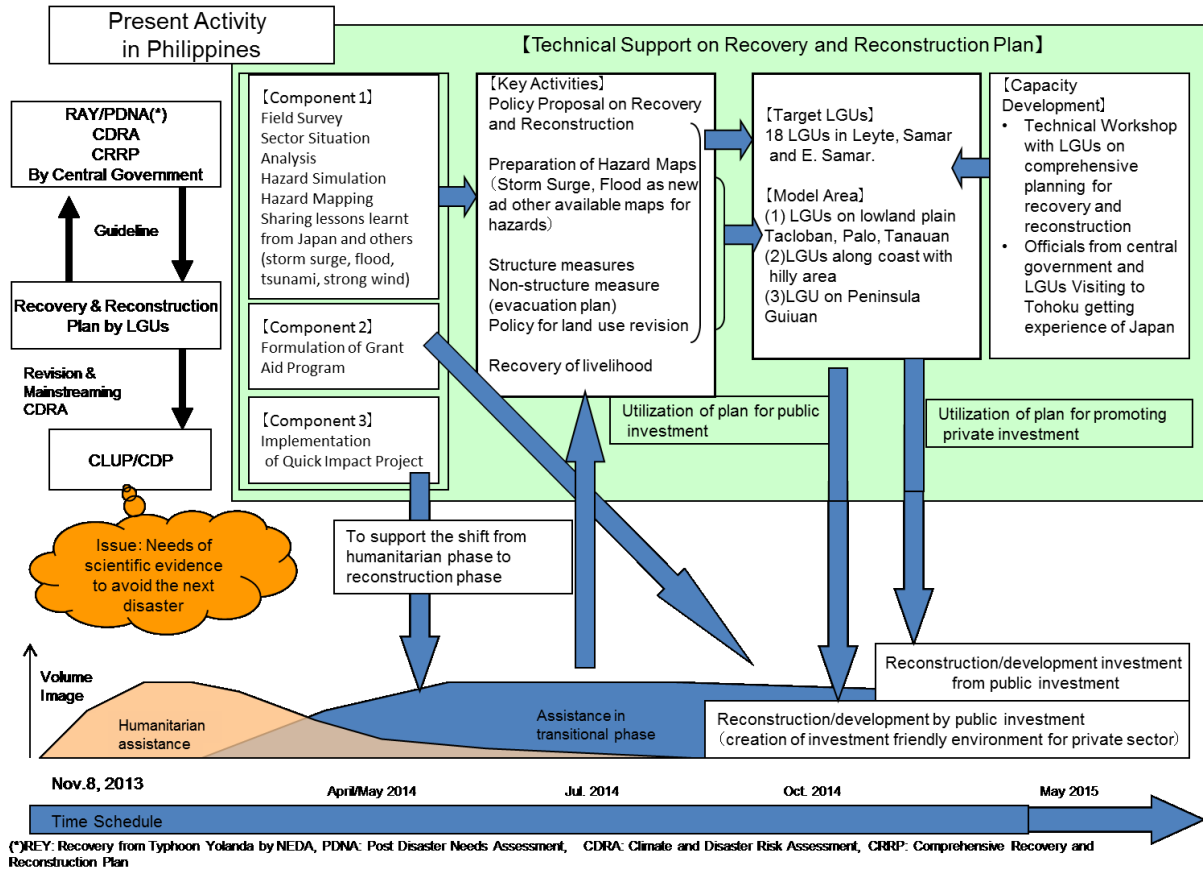
1.3 Target Area

The Target Area will consist of 9 Local Government Units (LGUs) of Leyte Province, along the San Pedro coast and San Pablo bay, and 2 LGUs of Samar Province and 7 LGUs of Eastern Samar Province, along the southern coast of Samar Island. Tacloban City, Leyte there is state capital, has an economic hub function of Region VIII. In addition, in Palo Municipality, Region VIII local agency of the central government are integrated.

Areas along the Leyte State of Leyte Gulf, has become a flat portion Leyte plains spread. Samar province along the Leyte Gulf, approaching the hill behind, small settlements are scattered along the coast. Whereas along the Leyte Gulf of Eastern Samar province have similar characteristics and Samar province, the easternmost of Guiuan Municipality is located on a peninsula overlooking the Pacific Ocean.

Total population of 18 LGU surveyed are 696,000 people in the statistical data of disaster before 2013. Of these, Tacloban City of population accounted for 221,000 people.

Land use prior to the disaster is farmland mainly of coconut and rice, low wetlands and urban (residential and commercial land) along the coast.



Source: JICA Study Team

Figure 1.3-1 Timeline Concept of JICA Project

Chapter 2 The Disaster Situation

2.1 Damage Situation

Typhoon Yolanda that entered the area of responsibility of the Philippines on November 6, 2013, recorded the central pressure 895 hPa, maximum wind speed (wind gust) reached 235mph. As a result, the storm surge occurs in the Leyte Gulf, the coastal lowlands, including the city was flooded.

Inundation by storm surges, became the most prominent in the vicinity of Tacloban City where was located in the bay back of Leyte Gulf. The flooding in the coastal part of Leyte province is remarkable in Leyte plains while the flooding in Samar and Eastern Samar provinces along coastal lowlands was limited.

Building damage due to high winds, of the building structure and the member of the residential buildings has become enormous. Steel structure building also caused damage to the roof destroyed by wind pressure.

Damage of coconut farms by strong winds, 34 million pieces of coconut trees has collapsed among 52 million of the trees in Region VIII. The coconut industry in Region VIII, also of the population copra trade 1.7 million people, had been involved in the distribution of coconut processed products. This coconut damage left a catastrophic damage to the economy of the region.

Fishery damage is that, among the registered fishermen 60,300 people of Region VIII, 49,090 people of fishermen suffered. 10 000 vessels of small fishing boats, 24 commercial fishing vessels have been lost. Fish cage of 1,723 places have been washed away in the eastern Samar province.

Commerce and industry-related facilities, received the devastating damage by high storm surge and strong winds caused by typhoon. The warehouse for store goods flowing from outside, wholesale system for distributing became dysfunction. Large-scale building such as a call center (more than 1,000 of employment) in the ICT Park of Palo Municipality was also destroyed.

Electrical system, communication facilities, highway, bridges were damaged to some extent. Although the power of the target area is supplied from the national grid, power transmission towers damaged by strong winds, the power supply was stopped. Communication facilities completely stopped by the collapse and loss of power of communication towers, terrestrial telephone and mobile phone has become disconnected. This due to the impact in many places comes into information transmission collection of post-disaster. Damage to the highway was limited.

Evacuation

November 7, 2013, President's Office called for vigilance in preparation for typhoon approaching to the public. Typhoon Yolanda was reported in some areas as extremely low atmospheric pressure. LDRRMC or BDCC in the current laws and regulations has been decided to call the pre-evacuation for

residents. Indication of evacuation in the study area has been issued from DRRMC of city or municipality. Although some residents had wished to remain at home, the majority of the residents was the refuge at the stage when the house was likely damaged.

2.2 Emergency Assistance, Recovery and Reconstruction Activities

Immediately after the disaster, the Philippines government, bilateral and multilateral aid agencies and NGO has embarked on support and assistance of victims. These series of aid activities have been made the adjustment by OPARR. OPARR submitted on August 2014, a comprehensive rehabilitation and reconstruction plan (CRRP) Statement of more than 8000 pages to the President, and the release of budget for the projects is under discussion.

2.3 Problems and Challenges to the Rehabilitation and Reconstruction

2.3.1 Public Facilities (electricity, communication, transportation network, public building)

Electric: transmission tower, utility poles and its support structure that weak against momentum of water flow of high winds and storm surge. The presence of the power transmission and distribution office of improper position with respect to the disaster.

Communication: must have functional maintenance of satellite communication device. The need for a generator owned sites for mobile phones.

Transport network: Most of the current road need an alternate route for passing through the disaster-prone areas. Access road to Tacloban Airport is easily exposed to storm surge damage. Road traffic congestion is likely to occur.

Public building: Many public buildings were damaged by the storm surge and high winds are not in accordance with the building standards of Philippines. There is a problem on inappropriate material in construction, and construction schedule. Building location conditions for the hazard is also a problem. The solution of these problems is a challenge, or is an important improvement to how the ongoing functional maintenance of public buildings in the event of a disaster.

2.3.2 Livelihood Improvement (health care, social welfare, education, debris processing, housing supply)

Health care, social welfare, education: health, education, social welfare facilities is weak situation against disaster, there is a need for repair and improvement. Patients of disaster vulnerable can not be subject to medical services necessary for the facility affected. Inadequate sanitary conditions of temporary housing lead to victims of health problems. Women, children, the elderly, a group of persons with disabilities loss and sexual discrimination violence of life means, has been facing difficulties, such as inappropriate living environment. Health care, education, personnel involved in

social welfare is less personnel, and had a lot of work, there is no time for training and knowledge acquisition necessary.

Debris processing: rubble process is a mechanism making multiple government agencies to carry out in cooperation challenges. Open dumping site is closed quickly, there is a need for the construction of the disposal facility in compliance with the law.

Housing supply: sufficient number of temporary housing is not supplied in a safe place. Measures of NDZ is not in accordance with the law. In addition, the development of relocation and temporary housing has been delayed for land acquisition. Basic infrastructure underdeveloped relocation destination, the provision of livelihood insufficient, there is a distance from the transfer source is isolated problems of community.

2.3.3 Economic Development (agriculture and forestry, fisheries, commercial and industrial)

Agriculture: damage to agriculture, resulted in a loss of farmers' livelihoods. Several years it takes to recover the agricultural sector. Therefore, there is a need for livelihood improvement measures for the time being of farmers. In especially coconut industry, processing of fallen trees, there is a need for supply of new seedlings. Conversion from a single crop to multi-product crop, there is a need for the introduction of strong varieties to disaster.

Fisheries: there is a need to provide a means of livelihood for fishermen who lost their fishing boats and aquaculture facilities by typhoon. Sustainable fisheries in addition to the recovery of fishing, there is a need for strong fishing facilities in disaster.

Commerce and industry: Excluding copra, lacks products and services, such as make externally. In addition, market biased to local production for local consumption is formed.

2.3.4 Local Government Preparedness and Emergency Response

When the Yolanda disaster occurred, in the town of the study area had places where it does not work or enough does not have a LDRRMO. It is necessary to ensure the LDRRMO established a sufficient lineup in line with RA10121. Emergency all of LGU regarding correspondence was hit in the corresponding at its maximum power. However, due to damage and fixtures of building itself by high storm surge and strong winds, there is a loss of equipment, so their correspondence was extremely difficult. LGU is with the help of international humanitarian organizations, including the UN, situational awareness of staff, allowance of wounded, recovery of transportation networks, supply of relief supplies, the maintenance of public order.

Chapter 3 Basic Policy of the Rehabilitation and Reconstruction

3.1 Idea of the Basic Policy of the Rehabilitation and Reconstruction

Basic policy to the rehabilitation and reconstruction in the region of the Project shall be based on the Philippines of policy, a variety of experiences of mega disaster in the past.

Planning period of the basic policy is about eight years that are to be completed reconstruction after Yolanda accident occurred.



Source: JICA Study Team

Figure 3.1-1 Planning Period

Rehabilitation and reconstruction from Yolanda disaster shall be done based on the slogan called Build Back Better. The slogan, when reconstruction of the region, has the region is strongly in disaster, and is put as much as possible long-term perspective to have the ability to support tenaciously to the next disaster.

In the Project, as Japan's experience, it is to incorporate the experience of rehabilitation and reconstruction from the Great East Japan Earthquake in 2011.

Relationship with Rehabilitation and reconstruction plans and other the local planning

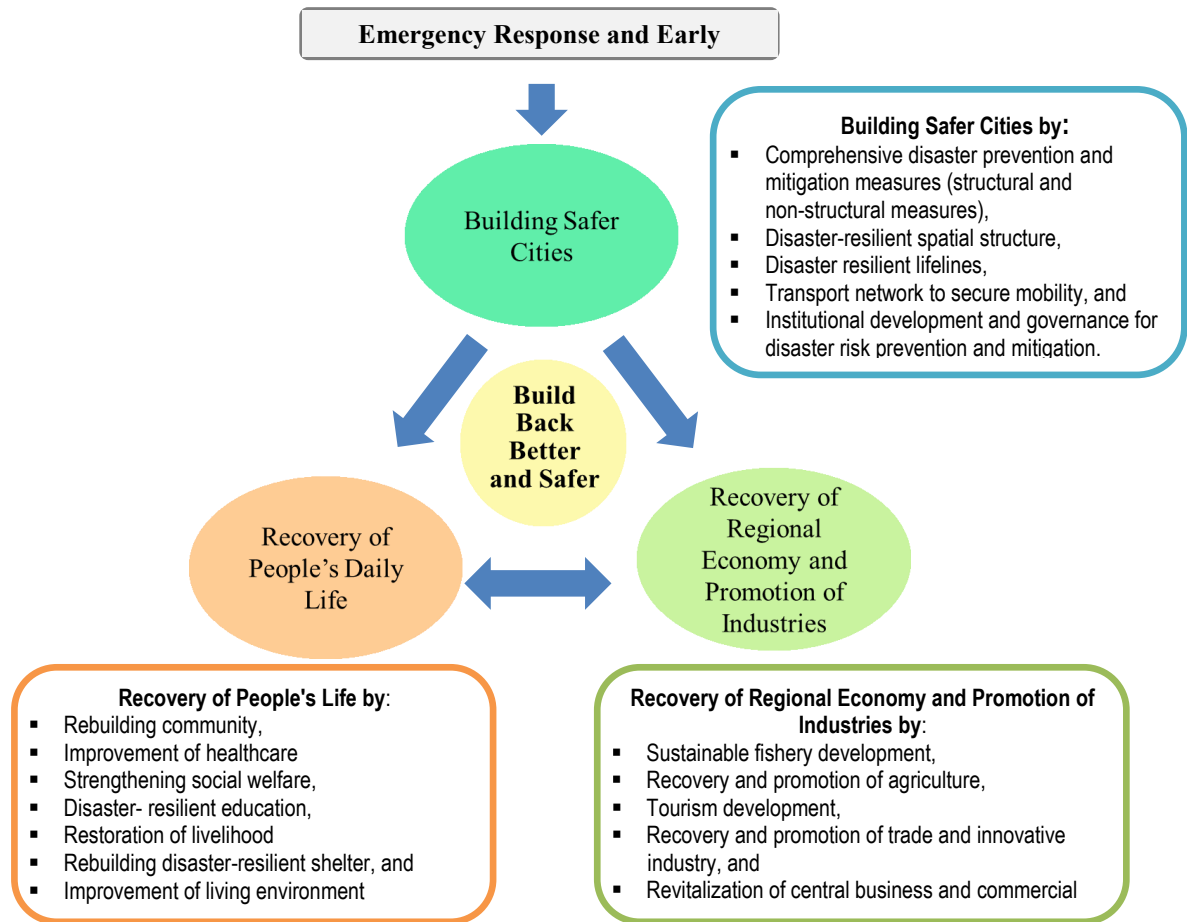
Development of rehabilitation and reconstruction plan, in laws and regulations RA10121, prevention of disasters, are listed in the priorities in the preparedness and response. In addition, RA10121 stipulates that the LGU is to formulate a LDRRMP. Furthermore LGU is obliged to do development of comprehensive land use plan (CLUP) and Comprehensive Development Plan (CDP). CLUP consists of the development and management plan and zoning ordinance of the land of the long-term (10 years). CDP over a multi-year, is a comprehensive development plan for multi sectors. CDP has a characteristic that action plan in the long-term development of the original frame that is enshrined in the CLUP.

3.2 Basic Policy of the Rehabilitation and Reconstruction

3.2.1 Policy Setting

Path to rehabilitation and reconstruction of the area of this study, three basic policies, ie, to promote "Building safer cities", "Recovery of people's daily life", "Recovery of regional economy and

promotion of industry ", and will be.



Source: JICA Study Team

Figure 3.2-1 Three Principles of Recovery and Reconstruction Policy

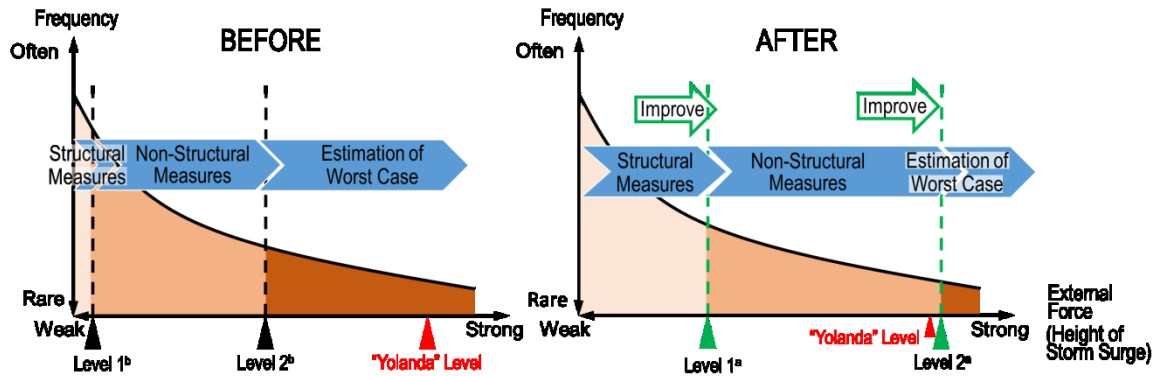
For policy of "building safer cities" the planning involved in disaster prevention consists of scientific structural measures utilizing the hazard map based on the evidence and non-structural measures, and for it to implementation the modification of the land use plan. From the lessons learned of Yolanda disaster, it is to emphasize the planning of evacuation plan.

A direction for disaster risk reduction measures in the Study Area is suggested in Figure 3.2-2 where "BEFORE" indicates the present situation, while "AFTER" describes the situation with sufficient measures installed.

By improving structural measures such as heightening an existing road, urban areas can be protected from the storm surge with stronger external force of Level 1a than the external force of Level 1b. In case of road heightening measures, the appropriate height of the road can be determined through storm surge height analysis.

As for non-structural measures, an evacuation plan can be improved by examining the locations of

evacuation centers and evacuation routes. It results in increase of the external force from Level 2b to Level 2a, or in other words, evacuation can save more lives even in the case of much stronger storm surge. As shown in Figure, by improving countermeasures against storm surge, it is possible to prevent disaster even if an enormous typhoon such as “Yolanda” strikes the region.



Source: JICA Study Team

Figure 3.2-2 Before and After Improvement of Disaster Mitigation Measurements

In order to make a safe people living environment, there is a need for structural measures for disaster mitigation, non-structural measures, such as shelters, resilient building, and induction of land use.

As the pattern of recovery reconstruction, depending on the extent of the affected area it can be distinguished from the urban part and the suburbs and sets the way of appropriate land use.

For policy of "recovery of people’s daily life", the rebuilding of community, improving the livelihoods of households affected, reconstruction of resilient living in the disaster, improvement of living environment, debris processing and solid waste management are the significant themes.

For policy of “recovery of regional economy and promotion of industry “, fisheries fishing, agriculture, tourism and promote distribution and industrial creation are the significant themes.

3.2.2 Policy for Building Safer Cities

In order to reduce the area’s disaster risk as disaster prevention plan, there is a need for a system to manage the disaster. To do this, the development of the management system of disaster information, strengthening of disaster management and public information dissemination capacity, the creation of municipal level DRRM, strengthening of community level DRRM, it is important to the spread of disaster prevention education. In addition, there is a need for comprehensive disaster prevention and mitigation. To do this, the implementation of structural measures and non-structural measures is important.

For the creation of resilient spatial structure to disaster, consideration of land use that can respond to

disaster risk in space development, relocation of residents living in dangerous areas, ensuring the appropriate evacuation centers and evacuation routes, important public facilities transfer to toughening and safe place of, it is necessary to establish a strong lifeline to disaster.

In order to reduce the disaster risk to properly continue the administrative services, it is necessary to establish a disaster management system. To do this, quality management of public facilities, ensuring information transmission system, educational activities of residents is important. In addition, development of basic infrastructure is needed.

In order to ensure the transport network in the event of a disaster, the establishment of a disaster management system, create a safe town at the facility specific response, strengthening of transport-related infrastructure is important.

For governance improvement for the reduction and management of disaster risk, and improvement of ability involved in DRRM of LGU, there is a need for coordination mechanisms with the government agencies. To do this, establishment of cooperation between government organizations involved in disaster response, the introduction of broad-based disaster risk reduction and management system is important.

3.2.3 Policy for Recovery of People's Daily Life

In order to activate strongly the community affected by disaster recovery, it is necessary to enhance resistance of community to disaster. To do so, reconstruction of shelters of community, supply of housing to support the self-help efforts, capacity building of DRRM committee of barangays, the creation of barangay level of vulnerability map is important. In addition, mutual assistance is necessary to establish a community that mainly, ensure clear communication between the relocated residents in it, the promotion of dialogue in the community, reconstruction of Barangay Hall are important.

To quality of reconstruction of healthy community with access to high health care, ensuring access to health care services, the establishment of a strong health care system in the disaster, prevention of epidemic spread, to the victims the provision of care to mental health are important.

In order to strengthen the bonds of community facing the weak against the disaster, and rebuilding and strengthening of access to social welfare services, it is important to strengthen the service for disaster.

To ensure the access of establishment of strong education system for disaster to it, ensure access to education, , reduce teacher of vulnerability of disaster affected students, young people, and as a space of rest of community strengthening of disaster resistance against school are important.

For improving the livelihoods of the affected families, it is important to increase opportunities for securing livelihoods, and to provide a life means to the people (weak) with vulnerability.

For reconstruction of strong residential environment in disaster, the introduction of strict land use

regulations such as NDZ, support tools and materials to the housing supply, resettlement from the danger zone, to improve the building structure are important.

Because of the improvement of living environment, improvement of safety and quality of living environment, environmental improvement promotion to management and disaster risk reduction is important.

For rapid rubble processing and solid waste disposal, it is important to establish wider area of adjustment and cooperation, to the development of long-term waste disposal plan based on the laws and regulations.

3.2.4 Policy for Recovery of Regional Economy and Promotion of Industries

In order to provide a sustainable livelihood to fishermen family, recovery of coastal fisheries, promotion of aquaculture, the establishment of production and processing distribution system of marine products, the introduction of the compensation system to fishery damage, and the aquaculture each and Fisheries plan making of fishery development are important, such as.

The recovery of coastal fishing, fishing boat, engine, and the provision of fishing gear.

The promotion of aquaculture, the introduction of strong submergible fish farming technology to typhoon. Participation in the production and processing of fishermen of marine products, including women.

The establishment of production and processing distribution system of marine products, learn processing technology of marine products from advanced regions, soft and hard infrastructure necessary to fish of transport, development of, a new market development of fish is important.

For the introduction of compensation system to fishery damage, that securing of fishermen of life means through the accident compensation system is important.

For the plan making fishery development and aquaculture as a core, validity collateral of planning is important.

In order to make the affected agriculture community strong for disaster, reconstruction such as coconut farmers, promotion of production and processing distribution of agricultural products, strong agricultural systems in disaster are needed.

For the reconstruction of coconut farmers, the provision of seedlings, coconut breeding, introduction of intercropping, to support of charcoal use promote through farmers or farmers' organizations of fallen trees are important.

For the reconstruction of farmers other than coconut, support of farmers or farmers' organizations through agriculture continued by securing and soft loan of new revenue means such as mushroom cultivation are important.

For the development of the tourism industry, it is necessary to strive to provide a safe and high-quality hospitality, re-discovering existing tourism resources, development of more attracted tourist facilities for tourists.

To promote trade and new industries creation, it is necessary to grow local economy stimulated by more external demand. To do this, revival of the center business district of the region, the creation of a wholesale market of goods flowing from the outside, elicit external demand, the adoption of technology that accepts a variety of goods is important.

Chapter 4 Formulation of Japan Grant Aid Project

4.1 General

By the typhoon Yolanda, the region suffered catastrophic damage to houses, public facilities such as schools, government office buildings and medical institutions, transport infrastructures including bridges, roads, airports and harbors, and finally, public services such as drinking water, sewerage, and electricity.

According to the Philippine government, the total cost of damage is estimated at PhP 571.1 billion (US\$ 12.9 billion), and the requirement for rehabilitation is at PhP 360.9 billion (US\$ 8.2 billion). Considering that the revenue of the Philippine government was US\$ 4.61 billion in the 2013 fiscal year, the Philippine government will experience a heavy burden for some years ahead.

Considering the above mentioned circumstances, the goal of this project is to support the early recovery activities in devastated areas through the facility reconstruction and equipment procurement, especially targeting prioritized activities among the social infrastructures such as medical institutes, schools and government office buildings, economic infrastructures and disaster management infrastructures with the aim of contribution to a disaster resilient society. The facilities to be constructed with grant aid was studied based on the following policies considering the result of a site survey and consultation with a counterpart agency.

- The study was carried out with the principle of quick rehabilitation of infrastructures, facilities and equipment.
- In order to reduce the damage when another typhoon which has the same strength as Typhoon Yolanda comes, design criterion was applied for designing successful examples for disaster resilient construction of infrastructures, facilities, and equipment.
- The project was classified as a “General Grant Aid Project” to ensure transparency in the procurement process for disaster recovery and reconstruction, which was mentioned by the Presidential Assistant for Rehabilitation and Recovery.

4.2 Project Outline

JICA committed around USD 46,000,000 under its “Programme for Rehabilitation and Recovery from Typhoon Yolanda” for Leyte, Samar, and Eastern Samar. The assistance comes with this Component. The Component consists of the construction of disaster-resilient schools, government office complexes, health facilities, livelihood facilities, provision of various technical equipment for an airport and maritime school; provision of power distribution facilities; and provision of debris-clearing equipment.

In the JICA Study, the construction projects and the procurement of equipment projects were formulated as “Program grant aid project” as shown in Table 4.2-1. Based on the output from the

Study, construction and procurement will be implemented.

Table 4.2-1 Target Japan Grant Aid Project in the JICA Study

Items			Implementing Agency	Remarks	
1. Recovery of Basic Human Needs	Reconstruction of Elementary School		Facilities	1. DPWH 2. DepEd	
	Reconstruction of Medical Facilities	EVRMC	Facilities	3. DOH	Building for Outpatient
		RHU Facilities	Facilities	1. DPWH 3. DOH	4 locations
		RHU Equipment	Equipment	3. DOH	4 locations
	Rehabilitation of Electricity Equipment		Equipment	4. DOE	Boom Truck with Bucket and Winch: 7 units Boom Truck with Digger and Crane: 7 units
2. Recovery of Livelihood and Economic Activity	Recovery of Construction Equipment		Equipment	1. DPWH	Dump Truck, etc.
	Rehabilitation of Equipment for National Maritime Polytechnic		Equipment	5. DOLE	Fast rescue boat and Davit, etc.
	Rehabilitation of Equipment for Guiuan Marine Fisheries Development Center		Equipment	6. DA	Sterilizer, etc.
3. Rehabilitation of Damaged Public Infrastructure	Rehabilitation of Equipment for Tacloban Airport		Equipment	7. DOTC	Airport Rescue and Fire Fighting Vehicles, etc.
4. Rehabilitation of Disaster Prevention System	Reconstruction of Local Government Office		Facilities	1. DPWH 8. DILG	2 locations

Source: JICA Study Team

Most of the above Projects (Component 2) is going to implement in 2015 and 2016 and the outcome should be materialized immediately.

Chapter 5 Quick Impact Projects

5.1 Objectives

The Quick Impact Projects (QIPs) are implemented with the aim of promoting the process of reconstruction by contributing to the restarting of economic activities, reconstruction of daily lives, and strengthening of government organizations' capacities in implementing supportive measures for disaster management in the Target Area. At the same time, they also need to be completed within the Project Period, maintain appropriate quality, and secure a concrete structure for operation and maintenance.

5.2 Project Formulation

In terms of project formulation, the following directionalities were determined.

- Projects having high impact due to their implementation
- Projects having high synergetic effect when combined with the Japanese Grant Aid projects
- Projects contributing to the sharing of Japanese experience and technology
- Projects contributing to the reconstruction of livelihoods and the community
- Projects contributing to the strengthening of capacities of administrative organizations in supporting disaster management activities
- Projects that are not duplicating the activities of other donors

Based on the above, the Study Team developed the following three principles in order to materialize the six directionalities as actual candidate QIPs that respond to actual local needs. Apart from these principles, the two directionalities “projects with high impact” and “Projects that are not duplicating” were considered at the time of actual selection of the QIPs.

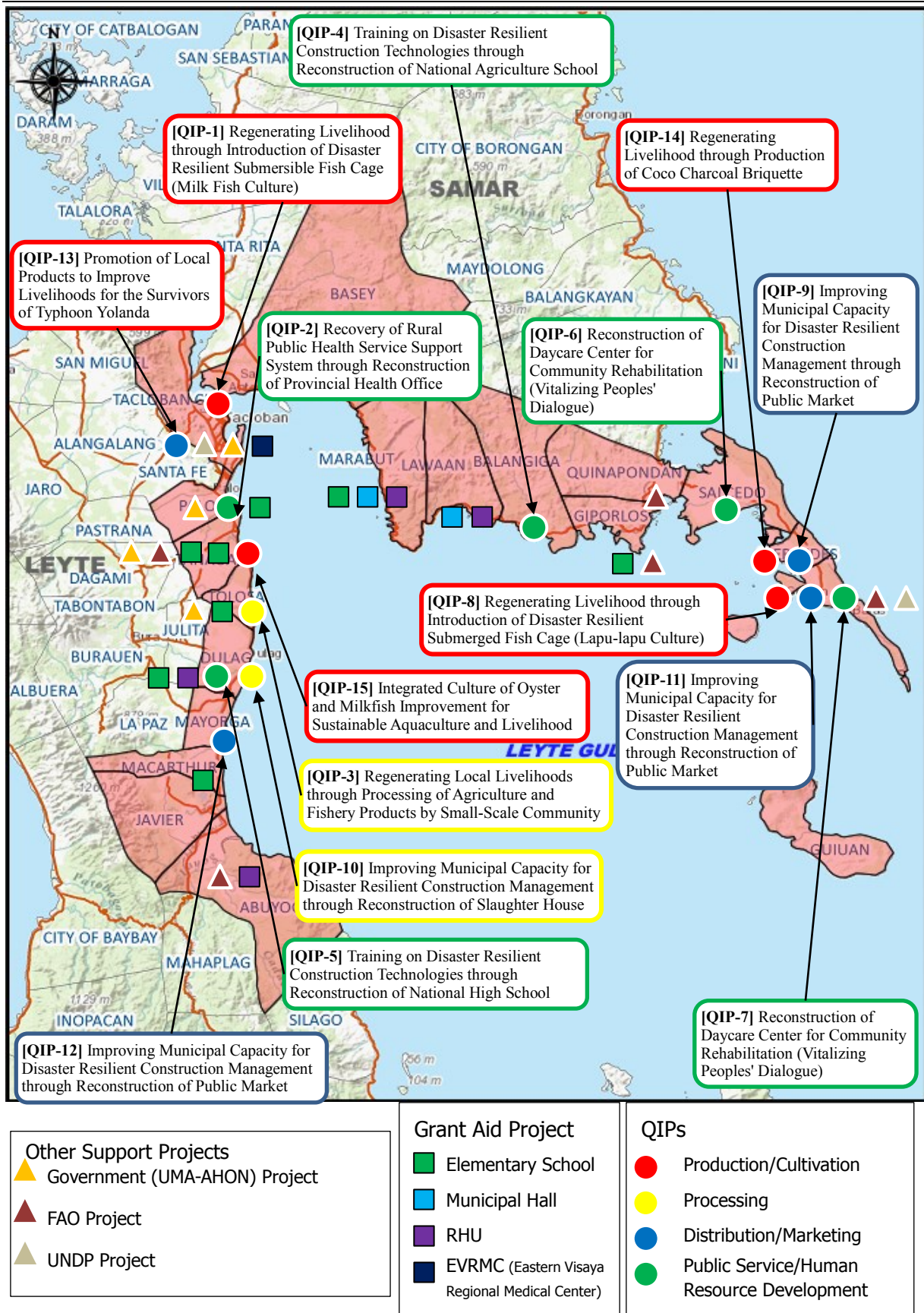
Table 5.2-1 Principles of QIPS

Principle 1 Reflecting Lessons Learned and Technologies Accumulated through Past Disasters in Japan to Recovery and Reconstruction	
(1)	Utilization of lessons learned in Higashi-Matsushima City of Miyagi Prefecture
(2)	Utilization of Knowledge and Technologies of Japanese Skilled Builders
(3)	Synergetic Effect with Grant Aid projects
Principle 2 Supporting the Regeneration of Livelihood Activities and the Community	
(1)	Regenerating Livelihoods of Coconut Farmers
(2)	Regenerating Livelihood of Fisherfolk
(3)	Regeneration of Local Small-Scale Industries
Principle 3 Strengthening Public / Community Facilities and their Disaster Resiliency	

Source: JICA Study Team

5.3 QIPs Outline

The list of prioritized QIPs and reasons for prioritization of individual QIPs are indicated in Table 5.3-1 and Table 5.3-2, respectively. Furthermore, the location of individual QIPs are indicated in Figure 5.3-1.



Source: JICA Study Team

Figure 5.3-1 Location of QIPs

Table 5.3-1 List of Selected QIPs

QIP No.	Priority Group	Municipality	Project Name	Main Counterpart Agency	Supporting Agency	Remarks
QIP-1	I	Basey	Regenerating Livelihood through Introduction of Disaster Resilient Submersible Fish Cage (Milk Fish Culture)	Municipal Govt. of Basey	BFAR	
QIP-2	I	Palo	Recovery of Rural Public Health Service Support System through Reconstruction of Provincial Health Office	DOH	Leyte Province	
QIP-3	II	Tolosa	Regenerating Local Livelihoods through Processing of Agriculture and Fishery Products by Small-Scale Community Groups	Municipal Govt. of Tolosa	VSU	
QIP-4	II	Balangiga	Training on Disaster Resilient Construction Technologies through Reconstruction of National Agriculture School	TESDA		Trainers' and Graduates' training for TESDA and evaluation
QIP-5	II	Dulag	Training on Disaster Resilient Construction Technologies through Reconstruction of National High School	TESDA	DepED	Trainers' and Graduates' training for TESDA and evaluation
QIP-6	II	Salcedo	Reconstruction of Daycare Center for Community Rehabilitation (Vitalizing Peoples' Dialogue)	Municipal Govt. of Salcedo		
QIP-7	II	Guiuan	Reconstruction of Daycare Center for Community Rehabilitation (Vitalizing Peoples' Dialogue)	Municipal Govt. of Guiuan		
QIP-8	II	Guiuan	Regenerating Livelihood through Introduction of Disaster Resilient Submerged Fish Cage (Lapu-lapu Culture)	Municipal Govt. of Guiuan	BFAR	
QIP-9	III	Guiuan	Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market	Municipal Govt. of Guiuan		Capacity Development on LGU officers
QIP-10	IV	Dulag	Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Slaughter House	Municipal Govt. of Dulag		Capacity Development on LGU officers
QIP-11	IV	Mercedes	Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market	Municipal Govt. of Mercedes		Capacity Development on LGU officers
QIP-12	IV	Mayorga	Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market	Municipal Govt. of Mayorga		Capacity Development on LGU officers
QIP-13	V	Basey, Mercedes, Tacloban, Tanauan and Tolosa*	Promotion of Local Products to Improve Livelihoods for the Survivors of Typhoon Yolanda	DTI	BFAR, Chamber of Commerce, DA, DOST, Relevant LGUs	
QIP-14	II	Mercedes	Regenerating Livelihood through Production of Coco Charcoal Briquette	Municipal Govt. of Mercedes	DA, PCA	
QIP-15	I	Tanauan	Integrated Culture of Oyster and Milkfish Improvement for Sustainable Aquaculture and Livelihood	Municipal Govt. of Tanauan	BFAR	

* Other possible areas to be identified through the QIP.

Note:

BFAR: Bureau of Fisheries and Aquatic Resources, DA: Department of Agriculture, DepED: Department of Education, DOH: Department of Health, DOST: Department of Science and Technology, NFTDC: National Integrated Fisheries and Technology Development Center, PCA: Philippines Coconut Authority, TESDA: Technical Education and Skills Development Authority, VSU: Visaya State University

Source: JICA Study Team

Table 5.3-2 Establishment of Priority Groups for QIPs and their Reasons

Priority Group	Project Title	Project Site	Points Considered for the Categorization of Priority Groups
I	Regenerating Livelihood through Introduction of Disaster Resilient Submersible Fish Cage (Milk Fish Culture)	Basey	<p>The QIP aims to re-establish milkfish farming, which was a conventional economic activity practiced in the area, in a form that is more resilient to typhoons by introducing Japanese technologies for submersible fish cages. The Municipality will co-manage the fish cages with BFAR and will lease them to the local fisherfolk. The fisherfolk will be responsible for the operation and daily maintenance, while the Municipality / BFAR shall take charge of large-scale repair and renewal of the structures. In order to do this, the Municipality/BFAR shall charge minimum service fees for the use of the equipment. Through this process, the Municipality/ BFAR will be able to obtain the know-how for the operation and management of the fish cages, and will be able to further expand the activities within the Municipality, as well as in the other areas in the region. Ultimately, the disaster resistant technology can be expected to be utilized in all areas affected by typhoons in the country, with Basey Mariculture Park being its model.</p> <p>At the same time, the QIP is also expected to contribute to the formulation of a value chain for fish through its future linkage with Guiuan Marine Fisheries Development Center, which is planned to be supported through the Japanese Grant Aid scheme.</p> <p>As indicated above, the QIP will contribute to reconstructing the local industry in a form that is more resilient to disasters and will directly contribute to the regeneration of local livelihoods. Furthermore, its effect is expected to expand beyond the borders of the Municipality. In consideration of such benefits, the QIP is categorized in Priority Group I.</p>
I	Integrated Culture of Oyster and Milkfish Improvement for Sustainable Aquaculture and Livelihood	Tanauan	<p>The QIP aims to re-establish oyster farming, which was a conventional economic activity practiced in the area. Local material will be used for the construction of fish-pens and oyster racks, so that the facilities can be easily re-established by the fisherfolk once it is damaged by possible future typhoons. Techniques for sustainable integrated culture of oyster and milkfish will be introduced in consideration of the natural production capacity of the site. The water quality of the site will be regularly monitored by the Leyte Marine Biotoxins Testing Center in order to avoid overcrowding of milkfish and oyster, which may result in eutrophication of the waters. Necessary technologies for the production system will be accumulated in the Municipality of Tanauan and BFAR (Leyte Province and Region 8 Office). A part of the products will be processed in order to add value. At the same time, the QIP is also expected to contribute to the formulation of a value chain for fish through its future linkages with the Guiuan Marine Fisheries Development Center, which is planned to be supported through the Japanese Grant Aid Scheme. Furthermore, the milkfish produced is also expected to be sold to the participants of another QIP (Regenerating Local Livelihoods through Processing of Agriculture and Fishery Products by Small-Scale Community Groups) which is also working on value adding to local agro-fishery products.</p> <p>As indicated above, the QIP will contribute to reconstructing the local industry in a form that is more sustainable, and will directly contribute to the regeneration of local livelihoods. Furthermore, the areas suitable for fish-pen culture of milkfish widely exists in the area, the effect of the QIP is expected to expand beyond the borders of the Municipality. In consideration of</p>

Priority Group	Project Title	Project Site	Points Considered for the Categorization of Priority Groups
			such benefits, the QIP is categorized in Priority Group I.
I	Recovery of Rural Public Health Service Support System through Reconstruction of Provincial Health Office	Palo	<p>The QIP aims to recover the functions of the Provincial Health Office (PHO) in supporting the Rural Health Units (RHUs), which are the terminal public health service providers in the region. The functions of the PHO include; 1) support for the 44 RHUs in the Province for the implementation of central policies and programs, and monitoring of services provided, 2) Coordination between the central administration and RHUs, 3) Collection of Provincial and Municipal level data related to public health services and health indices. Reconstruction of the PHO office as well as support for necessary equipment will enable the resumption of stagnated services (issuance of birth certificates and health certificates, provision of administrative training for RHUs, distribution of vaccines, etc.) and contribute to enhancing basic health services in the Province. Furthermore, appropriate designing and construction for the repair works will contribute to increasing the disaster resiliency of the supporting structure for basic health services.</p> <p>As indicated above, the QIP contributes to the reconstruction of the basic public health services of the entire Province by early recovery of the supporting structure for public health services. The QIP is also expected to have synergetic effects with the RHUs which are planned to be rehabilitated under the Japanese Grant Aid scheme. Moreover, urgent recovery is required by the PHO for the stagnated services, such as provision of vaccines to RHUs and issuance of documents necessary for visa applications by migrant workers (birth certificates and health certificates). In consideration of these aspects, the QIP is categorize into Priority Group I.</p>
II	Regenerating Livelihood through Introduction of Disaster Resilient Submerged Fish Cage (Lapu-lapu Culture)	Guiuan	<p>The QIP aims to re-establish grouper (Lapu-lapu) farming, which was a conventional economic activity practiced in the area, by introducing disaster resilient fish cages (submerged fish cages made of high-density polyethylene and improved mooring) and a fish culture system with less load on natural resources (regulation of capturing natural fingerlings and gradual transition to artificial assorted feed), in order to regenerate the economic foundation of fish farmers and to stabilize its production in the mid to long term.</p> <p>The Municipality will co-manage the fish cages with BFAR and will lease them to the local fisherfolk. The fisherfolk will be responsible for the operation and daily maintenance, while the Municipality/ BFAR shall take charge of large-scale repair and renewal of the structures. In order to do this, the Municipality/BFAR shall charge minimum service fees for the use of the equipment. Through this process, the Municipality/BFAR will be able to obtain the know-how for the operation and management of the fish cages, and will be able to further expand the activities within the Municipality. In the future, seedlings used for grouper farming will shift to artificially raised fingerlings that will be produced in the Guiuan Marine Fisheries Development Center, which is planned to be supported through a Japanese Grant Aid scheme, so as to reduce the dependency on natural fingerlings. Furthermore, the QIP is expected contribute to the establishment of the entire value chain through its linkage with the later mentioned QIP titled “Improving Municipal Capacity for Disaster Resilient Construction Project Management (Reconstruction of Guiuan Public Market).”</p> <p>As indicated above, the QIP will contribute to reconstructing the local industry in a form that is more resilient to disasters and will directly contribute to the regeneration of local livelihoods. Furthermore, its effects are expected to expand beyond the</p>

Priority Group	Project Title	Project Site	Points Considered for the Categorization of Priority Groups
			borders of the Municipality. However, since the sites suitable for grouper farming is rather limited, the magnitude of expansion is expected to be lower than the QIPs in Priority Group I. Therefore, the QIP is categorized into Priority Group II.
II	Regenerating Local Livelihoods through Processing of Agriculture and Fishery Products by Small-Scale Community Groups	Tolosa	<p>The QIP will contribute to promoting the diversification of income sources for the local residents by supporting residents' organizations for food processing activities through repairing a multi-purpose building that can be used as processing centers, and by providing necessary equipment for processing activities. Processing activities of agro-fishery products (deboning of milkfish, producing noodles from fish meat and vegetables, production of sausages, etc.) were already practiced by small-scale residents' groups before Typhoon Yolanda. Therefore, it is expected that it will be relatively easy to resume these activities by installing a processing center with a kitchen and necessary equipment (small equipment such as refrigerator, tables and common kitchenware, hand operated pasta machine, etc. Necessary equipment will be decided through discussions with the residents' groups).</p> <p>In addition, gathering of the individual processing activities, which were practiced in dispersed locations, to a site with good access near the Municipal Hall is expected to bear demonstration effects to neighboring areas. Through such effect, it is expected that processing activities will also expand to areas outside of the borders of Tolosa. With local means of livelihoods largely biased on coconut farming and fisheries, diversification of livelihood activities is expected to contribute to formulating a community that is more resilient to disasters.</p> <p>As indicated above, the QIP is expected to contribute to increasing disaster resiliency of the area by promoting diversification of economic activities. Furthermore, the effect of the QIP is expected to expand beyond the borders of the Municipality. However, considering that the scale of activities and area of expansion is expected to be lower than those of the QIPs in Priority Group I, the QIP is categorized into Priority Group II.</p>
II	Regenerating Livelihood through Production of Coco Charcoal Briquette	Mercedes	<p>The QIP aims to accelerate the removal of fallen trees and standing dead stocks from the coconut fields damaged by Typhoon Yolanda, in order to resume the production of coconut production and to promote inter cropping, which will be an important income source for the coconut farmers until the replanted coconut trees start bearing fruits. Promotion of inter cropping after the coconut fields are cleared is also expected to increase the resiliency of coconut farmers because their sources of income will be diversified, meaning that they will be able to obtain a certain amount of income even when coconut trees are damaged again by possible future typhoons.</p> <p>The fallen trees and standing dead stocks will be processed into charcoal by applying "Fuse Yaki" method, which is a simple method for charcoal production that has been practiced in Japan. The produced charcoal will be sold to markets in order to generate cash income, which will be an incentive for the coconut farmers for clearing their coconut fields.</p> <p>Since charcoal produced from coconut trunks are products that have not been used in the area, and because the quality of this charcoal is not as high as those produced from coconut shells, possibilities for processing them into charcoal briquettes will also be examined. Briquetting equipment and techniques will also be introduced to the area if briquetting is proved to add value to the products.</p>

Priority Group	Project Title	Project Site	Points Considered for the Categorization of Priority Groups
			As indicated above, the QIP is expected to contribute to the re-establishment of coconut farming through the clearing of coconut fields. The QIP will also directly contribute to the local livelihood through providing means for supplemental cash income. The activities are simple and can be expanded beyond the borders of the Municipality. However, taking into consideration that there are also other means for clearing the damaged coconut fields such as cash for work activities, the QIP is categorized into Priority Group II.
II	Training on Disaster Resilient Construction Technologies through Reconstruction of National Agriculture School	Balangiga	<p>The QIP aims to enhance the technical skills of skilled workers by utilizing the reconstruction of Balangiga National Agriculture School (mainly providing vocational training) as a training material for teaching disaster resilient design and construction techniques. Training will be provided in collaboration with the Technical Education and Skills Development Authority TESDA, an organization providing a series of vocational training including construction techniques, and graduates of TESDA training courses, who will be involved in the construction / repair works as skilled workers will be targeted as the trainees.</p> <p>The QIP will start by reviewing the technical drawing that is already being prepared by TESDA and training will be conducted by utilizing an existing OJT scheme (as a part of its curriculum, TESDA is sending its trainees to contractors for OJT). In the QIP, TESDA trainers and training course graduates shall be employed by a contractor in order to perform OJT under the supervision of the Study Team during the whole process of reconstruction. A skilled worker from Japan will be invited to the site, particularly at the stage of preparation to fixing of trusses and tiling of the roof, which is a critical stage as it largely influences the susceptibility to typhoons, so that the trainees can obtain the knowledge and techniques applied in Japan. Training activities with the Japanese skilled worker will be recorded on video and handed over to TESDA as training material, so that the technique can be further taught to future trainees.</p> <p>By widely sharing knowledge and technology for disaster resilient designing and construction among the trainees, the QIP is expected to contribute to the reconstruction of the disaster hit areas based on appropriate skills, and contribute to the reconstruction of disaster resilient public facilities. At the same time, the knowledge and technologies transferred to the TESDA trainers are also expected to be further inherited by future trainees after the QIP is completed. As for indirect effects, with skills improved through the training, the access of trainees to income opportunities is also expected to improve. The reconstruction of the Balangiga National Agriculture School (vocational school) will benefit the disaster hit population as a place for acquiring skills and knowledge for livelihood activities. It is also expected to contribute to the local economy through dissemination of knowledge regarding agriculture, which is one of the main industries in the area.</p> <p>As indicated above, the QIP is expected to contribute to strengthening the disaster resiliency of the area through improving the capacities of skilled workers involved in reconstruction of the facilities. The effect of the QIP is expected to expand beyond the borders of the Municipality. However, considering that the area of expansion and the number of direct beneficiaries is expected to be lower than those of the QIPs in Priority Group I, and that the economic impact to the area is not large, the QIP is categorized into Priority Group II.</p>
II	Training on	Dulag	The QIP aims to enhance the technical skills of skilled workers by utilizing the reconstruction of Dulag National High School as

Priority Group	Project Title	Project Site	Points Considered for the Categorization of Priority Groups
	Disaster Resilient Construction Technologies through Reconstruction of National High School		<p>training material for teaching disaster resilient design and construction techniques. Training will be provided in collaboration with the Technical Education and Skills Development Authority TESDA, an organization providing a series of vocational training including construction techniques, and graduates of TESDA training courses, who will be involved in the construction / repair works as skilled workers will be targeted as the trainees.</p> <p>The QIP will start by reviewing the technical drawings that are already being prepared by DepED and training will be conducted by utilizing an existing OJT scheme (as a part of its curriculum, TESDA is sending its trainees to contractors for OJT). In the QIP, TESDA trainers and training course graduates shall be employed by a contractor in order to get OJT under the supervision of the Study Team during the whole process of reconstruction. A skilled worker from Japan will be invited to the site, particularly at the stage of preparation to fixing of trusses and tiling of the roof, which is a critical stage as it largely influences the susceptibility to typhoons, so that the trainees can obtain the knowledge and techniques applied in Japan. Training activities with the Japanese skilled worker will be recorded on video and handed over to TESDA as training material, so that the technique can be further taught to future trainees.</p> <p>By widely sharing knowledge and technology for disaster resilient designing and construction among the trainees, the QIP is expected to contribute to the reconstruction of the disaster hit areas based on appropriate skills, and contribute to the reconstruction of disaster resilient public facilities. At the same time, the knowledge and technologies transferred to the TESDA trainers is also expected to be further inherited by future trainees after the QIP is completed. As for indirect effects, with skills improved through the training, the access of trainees to income opportunities is also expected to improve.</p> <p>As indicated above, the QIP is expected to contribute to strengthening the disaster resiliency of the area through improving the capacities of skilled workers involved in the reconstruction of the facilities. The effect of the QIP is expected to expand beyond the borders of the Municipality. However, in consideration of the fact that the area of expansion and the number of direct beneficiaries is expected to be lower than those of the QIPs in Priority Group I, and that the economic impact to the area is not large, the QIP is categorized into Priority Group II.</p>
II	Reconstruction of Daycare Center for Community Rehabilitation (Vitalizing Peoples' Dialogue)	Salcedo	At the time of the Great East Japan Earthquake, Higashi- Matsushima City, one of the areas strongly hit by the quake received prefabricated building units that can be used as venues for community meetings under the support of Germany. The building units are said to have been very useful for the local population to discuss issues on recovery and reconstruction. In order to utilize this experience in the areas hit by Typhoon Yolanda, this QIP aims at introducing Japanese pre- fabricated building technology, which can be easily transported and installed, and at the same time, can secure a certain level of rigidity, as a model for emergency recovery of facilities at times of disasters.
II	Reconstruction of Daycare Center for Community Rehabilitation (Vitalizing	Guiuan	The 7 daycare centers (5 in Salcedo and 2 in Guiuan) that are to be reconstructed through the QIP will primarily function to foster the healthy growth of children both physically and mentally, support working mothers in raising their children, protect children from abuse, and support expected mothers. On the other hand, the facilities should also be opened to the public during times when they are not used as daycare centers (night time, weekends, etc.) as a venue for community gathering. Its use as a venue for discussion by communities on issues on reconstruction and for enlightenment activities for disaster risk reduction and

Priority Group	Project Title	Project Site	Points Considered for the Categorization of Priority Groups
	Peoples' Dialogue)		<p>management (DRRM) should be promoted so as to strengthen the ties of the community and increase their capacity in DRRM.</p> <p>Since the requirements for installing prefabricated building units are relatively simple, preparation of bidding documents for the QIP is expected to be rather easy. In addition, introduction of simple but high quality prefabricated building unit technology is expected to function as a model for early recovery for neighboring Municipalities.</p> <p>As indicated above, the QIP is expected to be a model for early recovery from disaster damage, and at the same time, provide a venue for community meetings in order to strengthen their resilience to future calamities. The effect of the QIP is expected to expand beyond the borders of the Municipality. However, in consideration of the fact that the impact of the project is smaller than those of the QIPs in Priority Group I, and that there is small direct impact to the local economy, the QIP is categorized into Priority Group II.</p>
III	Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market	Guiuan	<p>The QIP aims at improving the project management capacity of Guiuan Municipality in terms of planning, procurement, construction supervision, operation and monitoring, through the reconstruction of public facilities. The improved capacity of the Municipality is expected to contribute to further reconstruction of public facilities with due quality, which will result in improved disaster resiliency.</p> <p>The public market to be reconstructed will also become more resilient to disasters and will contribute to securing access to safe foods during times of disasters. Furthermore, the reconstruction of the public market will contribute to resuming the revenue of the Municipality, which indirectly contributes to securing necessary budget for recovery and reconstruction of the Municipality.</p> <p>Moreover, the QIP is expected to contribute to the establishment of a value chain through its linkage with the former mentioned QIP titled “Regenerating Livelihood through Introduction of Disaster Resilient Submerged Fish Cage (Lapu-lapu Culture).”</p> <p>As indicated above, the QIP will improve the project management capacity of the Municipality. The QIP will also contribute to further reconstruction of the Municipality through resuming the revenue of the Municipality. On the other hand, the accumulation of know-how for management of projects for disaster resilient public structures will be limited within the Municipality and is not expected to extend beyond its borders. However, in consideration of the fact that the QIP is interlinked with another QIP to bear synergy (which is different from the later mentioned projects related to reconstruction of public facilities), the QIP is categorized in Priority Group III.</p>
IV	Improving Municipal Capacity for Disaster Resilient Construction Management through	Dulag	<p>The QIP aims at improving the project management capacity of Dulag Municipality in terms of planning, procurement, construction supervision, operation and monitoring, through the reconstruction of public facilities. The improved capacity of the Municipality is expected to contribute to further reconstruction of public facilities with due quality, which will result in improved disaster resiliency.</p> <p>The meat center to be reconstructed will also become more resilient to disasters and will contribute to securing access to safe foods during times of disasters. Furthermore, the reconstruction of the meat center will contribute to resuming the revenue of the</p>

Priority Group	Project Title	Project Site	Points Considered for the Categorization of Priority Groups
	Reconstruction of Slaughter House		<p>Municipality, which indirectly contributes to securing necessary budget for recovery and reconstruction of the Municipality.</p> <p>As indicated above, the QIP will improve the project management capacity of the Municipality. The QIP will also contribute to further reconstruction of the Municipality through resuming the revenue of the Municipality. On the other hand, the accumulation of know-how for management of projects for disaster resilient public structures will be limited within the Municipality and is not expected to extend beyond its borders. Also, in consideration of the fact that there are no linkages with other QIPs for synergetic effects, the QIP is categorized into Priority Group IV.</p>
IV	Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market	Mercedes	<p>The QIP aims at improving the project management capacity of Mercedes Municipality in terms of planning, procurement, construction supervision, operation and monitoring, through the reconstruction of public facilities. The improved capacity of the Municipality is expected to contribute to further reconstruction of public facilities with due quality, which will result in improved disaster resiliency.</p> <p>The public market to be reconstructed will also become more resilient to disasters and will contribute to securing access to safe foods during times of disasters. Furthermore, the reconstruction of the public market will contribute to resuming the revenue of the Municipality, which indirectly contributes to securing necessary budget for recovery and reconstruction of the Municipality.</p> <p>As indicated above, the QIP will improve the project management capacity of the Municipality. The QIP will also contribute to further reconstruction of the Municipality through resuming the revenue of the Municipality. On the other hand, the accumulation of know-how for management of projects for disaster resilient public structures will be limited within the Municipality and is not expected to extend beyond its borders. Also, in consideration of the fact that there are no linkages with other QIPs for synergetic effects, the QIP is categorized into Priority Group IV.</p>
IV	Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market	Mayorga	<p>The QIP aims at improving the project management capacity of Mayorga Municipality in terms of planning, procurement, construction supervision, operation and monitoring, through the reconstruction of public facilities. The improved capacity of the Municipality is expected to contribute to further reconstruction of public facilities with due quality, which will result in improved disaster resiliency.</p> <p>The public market to be reconstructed will also become more resilient to disasters and will contribute to securing access to safe foods during times of disasters. Furthermore, the reconstruction of the public market will contribute to resuming the revenue of the Municipality, which indirectly contributes to securing necessary budget for recovery and reconstruction of the Municipality.</p> <p>As indicated above, the QIP will improve the project management capacity of the Municipality. The QIP will also contribute to further reconstruction of the Municipality through resuming the revenue of the Municipality. On the other hand, the accumulation of know-how for management of projects for disaster resilient public structures will be limited within the Municipality and is not expected to extend beyond its borders. Also, considering that there are no linkages with other QIPs for synergetic effects, the QIP is categorized into Priority Group IV.</p>

Priority Group	Project Title	Project Site	Points Considered for the Categorization of Priority Groups
V	Promotion of Local Products to Improve Livelihoods for the Survivors of Typhoon Yolanda	Basey, Mercedes, Tacloban, Tanauan and Tolosa. Other areas to be identified through the QIP.	<p>The QIP aims to examine effective means to promote sales of value added products that are produced through other QIPs under the Study (Basey: processed milkfish, Tanauan: processed milkfish and oyster, Tolosa: processed milkfish and meat products, and Mercedes: charcoal products).</p> <p>A task force will be formulated to study the overall framework for promoting the sales of the processed products examining their target markets, requirements for sales (quality, production volume, certificates, etc.), and means for approaching the market. Furthermore, the formulated frameworks will be partially implemented to further look into possible improvements. The necessity of establishing a sales promotion center for local products will also be examined through the QIP.</p> <p>As indicated above, the QIP will identify and approaches that will further contribute to the recovery and reconstruction of the regional economy. The activities also cover a number of LGUs. However, in consideration that the QIP is dependent on the activities of the other QIPs and stable production of processed products will be a pre- condition for success, the QIP is categorized into Priority Group V.</p>

Source: JICA Study Team

5.4 Implementation of QIPs

5.4.1 Contents

The detailed contents of each QIP are described in Main Report Volume 3 Chapter 2.1 as the following items.

- (1) Location
- (2) Beneficiaries
- (3) Background
- (4) Purpose of the Project
- (5) Expected Outcome of the Project
- (6) Activities and Task Allocation
- (7) Implementation Schedule

5.4.2 Input and Achievement

The input and achievement of QIPs are summarized in Table 5.5-2.

5.5 Evaluation of QIPs

In terms of relevance, effectiveness and impact, efficiency, sustainability, the implemented QIPs can be justified as follows, (refer to Main Report Volume 3 Chapter 3)

Table 5.5-1 Evaluation Rating of Overall QIPs

Item	Rating
relevance	High (Rating: ③)
effectiveness and impact	High (Rating: ③)
efficiency	Fair (Rating: ②)
sustainability	Fair (Rating: ②)

Source: JICA Study Team

Table 5.5-2 Input and Achievement of QIPs

QIPs Name	Input	Achievement
Regenerating Livelihood through Introduction of Disaster Resilient Submersible Fish Cage (Milk Fish) (QIP-1)	<ol style="list-style-type: none"> 1. Design of Submersible Cage 2. Environmental Survey 3. Construction of Submersible Cages 4. Formation of Fish Farming Associations 5. Training on Operation of Submersible Cage 6. Supply of Fingerlings and Feeds 7. Market Survey on Milkfish 8. Training on Pressure Cooked Milkfish with Supply of Equipment 	<ol style="list-style-type: none"> 1. Strengthening Typhoon Resilience of Cage Culture System by Introduction of Japanese Submersible Cage Technology 2. Organizing Beneficiary Fisherfolk through Establishment of Fish Farming Associations 3. Technology Transfer on Operation of Submersible Cage 4. Supply of Fingerlings and Feeds to Recommence Fish Farming Operation by Fisherfolk 5. Determination of Product Form for Processed Milkfish Based on Market Survey 6. Transfer of Processing Technology from QIP-15 to QIP-1
Recovery of Rural Health Service Support System through Reconstruction of Provincial Health Office (QIP-2)	<ol style="list-style-type: none"> 1. Design of Reconstruction of Provincial Health Office (hereafter called PHO) 2. Bidding and Contracting for Reconstruction of PHO 3. Reconstruction of PHO 4. Equipment for Reconstruction of PHO 	<ol style="list-style-type: none"> 1. Revising Design of PHO for Disaster Resilient Reconstruction 2. Bidding/Contract of Reconstruction of PHO 3. Reconstruction of PHO in a Disaster Resilient form through Appropriate Construction Management 4. Support for Resuming Operation through Equipment Procurement
Regenerating Local Livelihood through Processing of Agriculture and Fishery Products by Small-Scale Community	<ol style="list-style-type: none"> 1. Design of Reconstruction of Multi-purpose Livelihood Building 2. Bidding/Contract of Reconstruction of Multi-purpose Livelihood Building 	<ol style="list-style-type: none"> 1. Revising Design of Multi-purpose Livelihood Building for Disaster Resilient Reconstruction 2. Bidding/Contract of Reconstruction of Multi-purpose Livelihood Building

Groups (QIP-3)	<ol style="list-style-type: none"> 3. Reconstruction of Multi-purpose Livelihood Building 4. Technical Transfer to LGU Engineer 5. Guidance for the women's groups (processing techniques and management) 6. Procurement of equipment for restarting processing activities by local women's groups 7. Promotion of processed products 	<ol style="list-style-type: none"> 3. Reconstruction of Multi-purpose Livelihood Building in a Disaster Resilient Form through Appropriate Construction Management 4. Technology Transfer to LGU Engineer 5. Initial Arrangements with Participant Women's Groups 6. Support for Resuming Processing Activities through Procurement of Equipment 7. Restarting of Processing Activities 8. Restarting of Production and Sales of Processed Products 9. Training Activities
Training on Disaster Resilient Construction Technologies through Reconstruction of National Agriculture School (QIP-4)	<ol style="list-style-type: none"> 1. Design of Reconstruction of NAS 2. Bidding/Contract of Reconstruction of NAS 3. Reconstruction of NAS 4. Equipment of reconstruction of NAS 5. Training of Construction Technology 	<ol style="list-style-type: none"> 1. Revising Design of NAS for Disaster Resilient Reconstruction 2. Bidding/Contract of Reconstruction of NAS 3. Reconstruction of NAS in a Disaster Resilient form through Appropriate Construction Management 4. Support for Resuming Operation through Procurement of Equipment for Food Processing 5. Technology Transfer to Relevant Workers, Engineers and TESDA Trainers
Training on Disaster Resilient Construction Technologies through Reconstruction of National High School (QIP-5)	<ol style="list-style-type: none"> 1. Design of Reconstruction of National High School (hereafter called NHS) 2. Bidding/Contract of Reconstruction of National High School 3. Reconstruction of NHS 	<ol style="list-style-type: none"> 1. Revising Design of NHS for Disaster Resilient Reconstruction 2. Bidding/Contract of Reconstruction of NHS 3. Reconstruction of NHS in a Disaster Resilient Form through Appropriate Construction Management

	4. Training of construction technology	4. Technology Transfer to Relevant Workers, Engineers and TESDA Trainers
Reconstruction of Daycare Center for Community Rehabilitation (Vitalization of Peoples' Dialogue) (Salcedo) (QIP-6)	<ol style="list-style-type: none"> 1. Design of Reconstruction of Daycare Center 2. Bidding/Contract of Reconstruction of Daycare Center 3. Reconstruction of Daycare Center 4. Equipment of Reconstruction of Daycare Center 5. Orientation of Prefabricated Method 	<ol style="list-style-type: none"> 1. Designing of Daycare Center for Improving Disaster Resiliency 2. Bidding/Contract of Reconstruction of Daycare Center 3. Reconstruction of Daycare Center in a Disaster Resilient Form through Appropriate Construction Management 4. Support for Resuming Operation through Procurement of Equipment 5. Disseminating Information on Emergency Recovery Model for Public Facilities through Orientation of Prefabricated Daycare Center (main characteristics, procurement process and work period)
Reconstruction of Daycare Center for Community Rehabilitation (Vitalization of Peoples' Dialogue) (Guiuan) (QIP-7)	<ol style="list-style-type: none"> 1. Design of Reconstruction of Daycare Center 2. Bidding/Contract of Reconstruction of Daycare Center 3. Reconstruction of Daycare Center 4. Equipment of Reconstruction of Daycare Center 5. Orientation of Prefabricated Method 	<ol style="list-style-type: none"> 1. Design Reconstruction of Daycare Center for Improving Disaster Resiliency 2. Bidding/Contract of Reconstruction of Daycare Center 3. Reconstruction of Daycare Center in a Disaster Resilient Form through Appropriate Construction Management 4. Support for Resuming Operation through Procurement of Equipment 5. Disseminating Information on Emergency Recovery Model for Public Facilities through Orientation of Prefabricated Daycare Center (main characteristics, procurement process and work period)

<p>Regenerating Livelihood through Introduction of Disaster Resilient Submerged Fish Cage (Lapu-Lapu Culture) (QIP-8)</p>	<ol style="list-style-type: none"> 1. Designing Submerged Grouper Cage 2. Construction and Delivery of Grouper Cages 3. Training of New Grouper Cage 4. Supply of Improved Diving Equipment 	<ol style="list-style-type: none"> 1. Formulation of Operational Guidelines for Sustainable Grouper Culture 2. Construction and Delivery of Typhoon Resilient Grouper Cages 3. Acquirement of Installation and Operation Techniques on the Introduced Grouper Cage through Participatory Training 4. Installation of Grouper Cages with Fisherfolk 5. Supply of Improved Diving Equipment
<p>Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market (Guiuan) (QIP-9)</p>	<ol style="list-style-type: none"> 1. Design of Reconstruction of Guiuan Public Market 2. Bidding/Contract of Reconstruction of Guiuan Public Market 3. Reconstruction of Guiuan Public Market 4. Technical Transfer to LGU Engineer 	<ol style="list-style-type: none"> 1. Revising Design of Guiuan Public Market for Disaster Resilient Reconstruction 2. Bidding/Contract of Reconstruction of Guiuan Public Market 3. Reconstruction of Guiuan Public Market in a Disaster Resilient Form through Appropriate Construction Management 4. Technical Transfer to LGU Engineer
<p>Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Slaughter House (QIP-10)</p>	<ol style="list-style-type: none"> 1. Design of Reconstruction of Slaughter House 2. Bidding/Contract of Reconstruction of Slaughter house 3. Reconstruction of Slaughter house 4. Equipment of Reconstruction of Slaughter house 5. Technical Transfer to LGU Engineer 	<ol style="list-style-type: none"> 1. Revising Design of Slaughter house for Disaster Resilient Reconstruction 2. Bidding/Contract of Reconstruction of Slaughter house 3. Reconstruction of Slaughter house in a Disaster Resilient form through Appropriate Construction Management 4. Support for Resuming Operation of Slaughter House through Procurement of Equipment 5. Technical Transfer to LGU Engineer
<p>Improving Municipal</p>	<ol style="list-style-type: none"> 1. Design of Reconstruction of Mercedes Public 	<ol style="list-style-type: none"> 1. Revising Design of Mercedes Public Market for

Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market (Mercedes) (QIP-11)	<p>Market</p> <ol style="list-style-type: none"> 2. Bidding/Contract of Reconstruction of Mercedes Public Market 3. Reconstruction of Mercedes Public Market 4. Equipment of Reconstruction of Mercedes Public Market 5. Technical Transfer to LGU Engineer 	<p>Disaster Resilient Reconstruction</p> <ol style="list-style-type: none"> 2. Bidding/Contract of Reconstruction of Mercedes Public Market 3. Reconstruction of Mercedes Public Market in a Disaster Resilient Form through Appropriate Construction Management 4. Support for Resuming Operation of Mercedes Public Market through Procurement of Equipment 5. Technical Transfer to LGU Engineer
Improving Municipal Capacity for Disaster Resilient Construction Management through Reconstruction of Public Market (Mayorga) (QIP-12)	<ol style="list-style-type: none"> 1. Design of Reconstruction Mayorga Public Market 2. Bidding/Contract of Reconstruction of Mayorga Public Market 3. Reconstruction of Mayorga Public Market 4. Technical Transfer to LGU Engineer 	<ol style="list-style-type: none"> 1. Revising Design of Mayorga Public Market for Disaster Resilient Reconstruction 2. Bidding/Contract of Reconstruction of Mayorga Public Market 3. Reconstruction of Mayorga Public Market in a Disaster Resilient Form through Appropriate Construction Management 4. Technical Transfer to LGU Engineer
Promotion of Local Products to Improve Livelihoods for the Survivors of Typhoon Yolanda (QIP-13)	<ol style="list-style-type: none"> 1. Study of the Framework of Promotion Activities for the Processed Products with the Task Force 2. Implementation of the Framework of Promotion Activities for the Processed Products 3. Examine Possibilities of a Promotion Center 	<ol style="list-style-type: none"> 1. Selection of Task Force Members and Topics to be Discussed 2. Discussions for Sales Promotion of Processed Products in 1st Task Force Meeting 3. Further Activities
Regenerating Livelihood through Production of Coco Charcoal Briquette (QIP-14)	<ol style="list-style-type: none"> 1. Invitation of Participant Farmers and Group Formulation 2. Provision of Necessary Tools 3. Provision of Training 	<ol style="list-style-type: none"> 1. Selection of Target LGU and Barangay 2. Formulation of Production Groups 3. Support for Initiating Charcoal Production through Installation of Kiln and Provision of

	4. Examine Possibilities for Charcoal Briquetting	<p>Material</p> <p>4. Production of Coco-Trunk Charcoal</p> <p>5. Sales of Coco-Trunk Charcoal</p> <p>6. Possibilities for Marketing of Charcoal Briquettes</p>
Integrated Culture of Oyster and Milk Fish Improvement for Sustainable Aquaculture and Livelihood (QIP-15)	<p>1. Cash for Work</p> <p>2. Environmental Survey and Planning Farm Layout</p> <p>3. Layout Fish Pens and Oyster Rack according to the Plan</p> <p>4. Supply of Materials for Constructing Fish Pens</p> <p>5. Supply of Materials for Construction of Oyster Seed Collection Facilities in Leyte Bay in cooperation with Leyte Municipal Government</p> <p>6. Visit to Higashi Matsushima Town in Japan for Exchange of Experiences and Series of Training</p> <p>7. Support for Developing Pressure Cooked Milkfish Product</p> <p>8. Support for Developing Aquaculture Insurance</p> <p>9. Supply of Laboratory Equipment to Leyte Marine Biotoxin Testing Center and Commencement of Plankton and Water Quality Monitoring</p>	<p>1. Recovery of Main Livelihood Support Facility for Fisherfolk by Construction of Farming Facilities</p> <p>2. Technology Acquirement and Improved Project Participation through Training Including Visit to Higashi Matsushima City in Japan</p> <p>3. Recovery of Main Livelihood Means by Harvesting Milkfish from Reconstructed Cages</p> <p>4. Strengthening Quick Recovery Capacity from Disasters by Development and Subscription of Aquaculture Insurance</p> <p>5. Development of Pressure Cooked Milkfish Product as a New and Sustainable Livelihood Means for Fisherfolk Women</p> <p>6. Establishment of Production Base of SCWFA for Pressure Cooked Milkfish through Equipment Supply and Training Implementation</p> <p>7. Technical Improvement in Production of Pressure Cooked Milkfish</p> <p>8. Reduction of Mass Mortality Risk of Overcrowding by Laying out Fish Farming Facilities based on Licenses Issued</p> <p>9. Collection of Oyster Seeds and Transplantation for Expansion of Livelihood Potential by Oyster Farming</p> <p>10. Improvement in Monitoring Function with</p>

		Commencements of Plankgon Analysis by Leyte Marine Biotoxins Testing Center with Supply of Laboratory Equipment and Water Quality Analysis by BFAR Region-VIII
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Source: JICA Study Team

Table 5.5-3 Relevance of QIPs to Recovery and Reconstruction Policy

QIP No.	Name of Municipality	Project Name	Major C/P Agency	Facility	Project Purpose	Target Group	Building Safer Cities			Recovering People's Daily Life				Restoring Regional Economy		
							Introducing Technologies in Japan	Structural Measures	Non-Structural Measures	Healthcare	Education	Social Welfare	Livelihood Improvement	Agriculture	Fishery	Services and Industry
Type A: Training/Capacity Development for Disaster Recilient Construction Technologies/Management & Function Recovery																
QIP-02	Palo	Recovery of Rural Health Service Support System Through Reconstruction of Provincial Health Office	PHO	PHO Reconstruction	Recovery of PHO System	PHO, RHU, PHO Users		Disaster Recilient Building	Function Securing at Disaster	Function Recovery						Local Industry Vitalization
QIP-04	Balangiga	Training on Disaster Resilient Construction Technologies Through Reconstruction of National Agriculture School	TESDA	National Agriculture School Reconstruction	Training on Construction Technologies	TESDA graduates/trainers, School teachers/trainees	Training by Japanese Skilled Worker	Disaster Recilient Building	Function Securing at Disaster		Training on Japanese Technology					Local Industry Vitalization
QIP-05	Dulag	Training on Disaster Resilient Construction Technologies Through Reconstruction of National High School	TESDA	National High School Reconstruction	Training on Construction Technologies	TESDA graduates/trainers, School teachers/students	Training by Japanese Skilled Worker	Disaster Recilient Building	Function Securing at Disaster		Training on Japanese Technology					Local Industry Vitalization
QIP-10	Dulag	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Slaughter House	Municipality of Dulag	Slaughter House Reconstruction	LGU Capacity Development	LGU, House users		Disaster Recilient Building	Function Securing at Disaster		Capacity Development of LGU Staff					Local Industry Vitalization
QIP-09	Guiuan	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Public Market	Municipality of Guiuan	Public Market Reconstruction	LGU Capacity Development	LGU, Market tenants		Disaster Recilient Building	Function Securing at Disaster		Capacity Development of LGU Staff					Local Industry Vitalization
QIP-11	Mercedes	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Public Market	Municipality of Mercedes	Public Market Reconstruction	LGU Capacity Development	LGU, Market tenants		Disaster Recilient Building	Function Securing at Disaster		Capacity Development of LGU Staff					Local Industry Vitalization
QIP-12	Mayorga	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Public Market	Municipality of Mayorga	Public Market Reconstruction	LGU Capacity Development	LGU, Market tenants		Disaster Recilient Building	Function Securing at Disaster		Capacity Development of LGU Staff					Local Industry Vitalization
Type B: Introduction of Disaster Recilient Technologies & Community Rehabilitation																
QIP-06	Salcedo	Reconstruction of Daycare Center for Community Rehabilitation (Vitalization of Peoples' Dialogue)	Municipality of Salcedo	Daycare Center Reconstruction	Vitalization of Community Dialogue	Center users, Community People	Prefabricated Building	Disaster Recilient Building	Function Securing, Disaster Prevention Education		Function Recovery					Local Industry Vitalization
QIP-07	Guiuan	Reconstruction of Daycare Center for Community Rehabilitation (Vitalization of Peoples' Dialogue)	Municipality of Guiuan	Daycare Center Reconstruction	Vitalization of Community Dialogue	Center users, Community People	Prefabricated Building	Disaster Recilient Building	Function Securing, Disaster Prevention Education		Function Recovery					Local Industry Vitalization
Type C: Introduction of Disaster Recilient Technologies and/or Sustainable Livelihood Improvement																
QIP-03	Tolosa	Regenerating Local Livelihoods Through Processing of Agriculture and Fishery Products by Small-Scale Community Groups	Municipality of Tolosa	Construction of Livelihood Activities Support Facility	Livelihood Improvement	Community group		Disaster Recilient Building			Promotion	Production Processing	Production Processing	Sales and Marketing		
QIP-01	Basey	Improving Livelihood Through Introduction of Disaster Resilient Submersible Fish Cage	BFAR, Municipality of Basey	Submersible Fish Cage for Milkfish	Livelihood Improvement	BFAR, Fishermen's families	Submersible Fish Cage	Disaster Recilient Facility	Function Securing at Disaster		Promotion		Fishery Cultivation	Processing and Sales		
QIP-08	Guiuan	Introduction of Disaster Resilient Submersible Fish Cage for Lapu-Lapu Culture	BFAR, Municipality of Guiuan	Submerged Fish Cage for Lapu-Lapu	Livelihood Improvement	BFAR, Fishermen's families	Submersible Fish Cage	Disaster Recilient Facility	Function Securing at Disaster		Promotion		Fishery Cultivation	Sales and Marketing		
QIP-15	Tanauan	Community Aquaculture Resources Management by Re-establishment of Oyster Farming	BFAR, Municipality of Tanauan		Livelihood Improvement & Resources Management	BFAR, Fishermen's families	Oyster Culture		Function Securing at Disaster	Resource Management	Promotion		Fishery Cultivation	Processing and Sales		
QIP-14	Mercedes	Regenerating Livelihood Through Production of Coco Charcoal Briquette	Municipality of Mercedes		Livelihood Improvement	Farmers' families					Promotion	Production Processing		Sales and Marketing		
QIP-13	Tacloban	Promotion of Local Products to Improve Livelihoods for the Survivors of Typhoon Yolanda	City of Tacloban		Livelihood Improvement & Market Promotion	Production/sales workers (QIPs-1, 3, 14, 15)					Promotion			Sales and Marketing		

Source: JICA Study Team

5.6 Lessons Learned from the implementation of QIPs

Table 5.6-1 is an overview of lessons learned from the QIPs (for the detailed description, refer to Main Report Volume 3 Chapter 3).

Table 5.6-1 Lessons Learned from QIPs

Objectives	Lessons Learned
(1) Regenerating Livelihood	<ol style="list-style-type: none"> 1. Cooperation with Local Institutions and People in Solving a Conflict in Installation of Cages with Local Fish Owners 2. Holistic Approach to Restore the Agricultural and Fishery Production and Practical Countermeasures to Prevent Delay in Stocking Fingerlings 3. Flexible Implementation to Countermeasure Unexpected Shortage of Fingerlings by Supply of Change Net Materials of Smaller Mesh Size 4. Communicating with Target and Other Local Population in Organizing Fish Farming Associations 5. Raising Awareness of Women's Association Members 6. Utilization of the Tolosa Multi-Purpose Livelihood Center for Increased Production 7. Effect of Political Conflicts 8. Supporting Locally Developed Technology for Long Term Sustainability 9. Make Haste Slowly in Mitigating a Conflict Between Utilization and Conservation of Natural Resources 10. Tasting and Sales of Processed Products in Local Events 11. Access to External Supporting Schemes 12. Duplication with other Supporting Activities 13. Developing Ownership for the Activities through Obtaining Cash Benefit 14. Utilization of Coconut Fields after Clearance of Debris 15. Working with Other Institutions for Finding Financial Partners for Operation of Fish Farming 16. Solving Problems by Active Participation of Beneficiaries in Control of Culture Area and Spacing Between Milkfish Pens 17. Increased Cost in Procurement of Construction Materials from Local Market 18. Practical Details for Developing an Insurance Package for Milkfish Farming Operation to Complement the Physical

Objectives	Lessons Learned
	<p>Structural Weakness</p> <p>19. Modification in the Oyster Seed Collection Activity that could Result in an Expansion of Impacts</p> <p>20. Potential Economic Impact of Milkfish Production for Future Planning</p> <p>21. Future Potentials in Integration of Milkfish Farming and Processing and Required Continuous Supports for the Women's Association</p>
(2) Construction Work	<ol style="list-style-type: none"> 1. Quality Identification of Steel Material 2. Concrete Aggregate 3. Quality Assurance of Welding Works 4. Control of Concrete Workability 5. Support Installation 6. Foundation Works and Installation of Scaffolding 7. Fixing of Column Formwork 8. Site Inspection 9. Safety Management 10. Alternative for Important Works 11. Payment Condition 12. Contractor's Skill for Documentation 13. Technical Transfer to LGU Engineer

Source: JICA Study Team

Chapter 6 Relation of Japan Grant Aid Projects and Quick Impact Projects with Policies on Recovery and Reconstruction

As part of the project, Grant Aid Projects and Quick Impact Projects (QIPs) were launched to accelerate the recovery and reconstruction process, guided under the three principles of recovery and reconstruction. A combination of the projects for reconstruction of facilities, livelihood supports and economic recovery aims at responding to immediate needs of the communities in the period of emergency response and early recovery, and stimulating a long term process of recovery and reconstruction. Each of the project components shall contribute to the three principles as shown in Table 6.1-1.

The project objectives and components in relation to each recovery and reconstruction policy will be provided in the subsequent chapters.

Table 6.1-1 Japan Grant Aid Projects and Quick Impact Projects in Recovery and Reconstruction

Grant Aid Projects/ QIPs	Location	Major Project Components	Recovery and Reconstruction			Emergency Response and Early Recovery		
			Building Safer Cities	Recovery of People's Lives	Recovery Economy			
Grant Aid Projects	Reconstruction of Elementary Schools (8 schools)	Polo, Tanauan, Tolosa, Dulag, Mac Arther, Marabut, Giporlos	• Construction of school buildings	✓	✓	✓	✓	
	Reconstruction of Medical Facilities	Tacloban	• Construction of outpatient quarter in EVRMC	✓	✓	✓	✓	
	Reconstruction of Rural Medical Facilities and Equipment (RHU)	Dulag, Abuyog, Marabut, Lawaan	• Reconstruction of RHUs • Provision of medical equipment	✓	✓	✓	✓	
	Rehabilitation of Electrical Equipment	DOE	• Provision of electrical equipment	✓			✓	
	Recovery of Construction Equipment	DPWH	• Provision of construction equipment	✓			✓	
	Rehabilitation of Equipment for National Maritime Polytechnic	NMP	• Provision of equipment for education and training			✓		
	Rehabilitation of Equipment for Guiuan Marine Fisheries Development Center	Guiuan	• Provision of equipment for fishery development			✓		
	Rehabilitation of Equipment for Tacloban Airport	Tacloban	• Provision of equipment for airport	✓			✓	
	Reconstruction of Local Government Office	Marabut, Lawaan	• Construction of municipal halls	✓	✓		✓	
Quick Impact Projects (QIPs)	QIP-1, 8	Regenerating Livelihood Through Introduction of Disaster Resilient Submersible Fish Cage	Basey/ Guiuan	• Livelihood Support for Fishermen • Development of disaster resilient aquaculture		✓	✓	✓
	QIP-2	Recovery of Rural Health Service Support System Through Reconstruction of Provincial Health Office	Palo	• Rehabilitation of PHO buildings • Procurement of equipment	✓	✓		✓
	QIP-3	Regenerating Local Livelihood Through Processing of Agriculture and Fishery Products by Small-Scale Community Groups	Tolosa	• Reconstruction of a multipurpose livelihood building • Training for women's groups		✓		✓
	QIP-4, 5	Training on Disaster Resilient Construction Technologies Through Reconstruction of National Agricultural School/ National High School	Balangiga/ Dulag	• Construction technique training through the repair and reconstruction		✓	✓	✓
	QIP-6, 7	Reconstruction of Day Care Center for Community Rehabilitation (Vitalization of People's Dialogue)	Salcedo/ Guiuan	• Reconstruction of Day Care Center	✓	✓		✓
	QIP-9, 10, 11, 12	Improving Municipal Capacity for Disaster Resilient Construction Management Through Reconstruction of Public Markets and Slaughter House	Guiuan/ Mercedes/ Mayorga/ Dulag	• Collaborative implementation from design to construction and supervision	✓		✓	
	QIP-13	Promotion of Local Products to Improve Livelihoods for the Survivors of Typhoon Yolanda	Tacloban	• Promotion of products at a promotion center			✓	
	QIP-14	Regenerating Livelihood Through Production of Coco Charcoal Briquette	Mercedes	• Production of coco charcoal briquette		✓		✓
	QIP-15	Integrated Culture of Oyster and Milkfish Improvement for Sustainable Aquaculture and Livelihood	Tanauan	• Recovery of the oyster farming • Livelihood Support for Fishermen		✓	✓	

Source: JICA Study Team

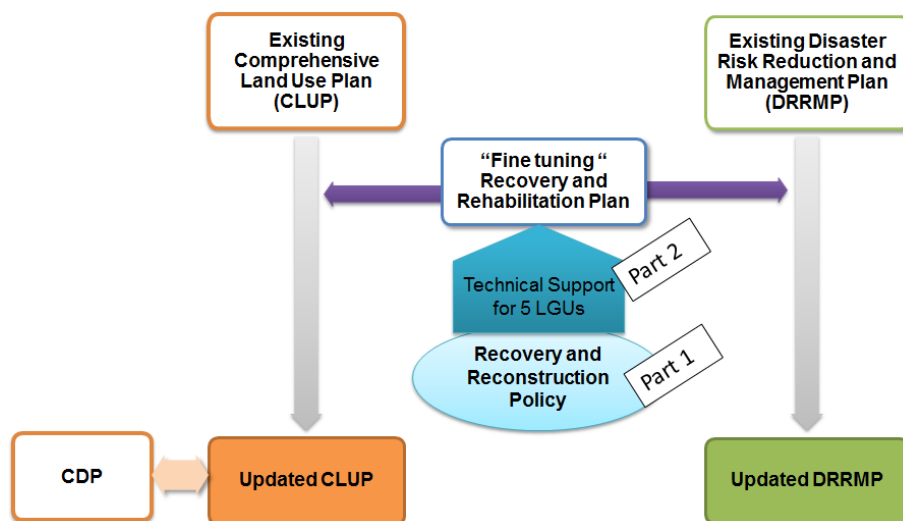
Chapter 7 Support Activities on Recovery and Reconstruction Planning for LGUs

7.1 General

Part 2 is an activity report of rehabilitation and reconstruction planning support of individual LGU. Policy recommendations to the entire affected areas that were compiled in Part 1, in order to reflect the specific rehabilitation and reconstruction plan of individual LGU, investigation team is selected five of LGU, in order to contribute to the overall recovery reconstruction planning, work shop format, was carried out technical assistance activities from July 2014 to September 2014.

7.2 Approach and Methodology

In Part 1 of the Main Report, an integrated set of policy for recovery and reconstruction planning, which would materialize the Build-Back-Better policy by GOP, was proposed. Part 2 of the Main Report is on technical support for model areas (5 LGUs) for the purpose of fine tuning Recovery and Rehabilitation Plan as shown in Figure 7.2-1.



Source: JICA Study Team

Figure 7.2-1 Relation of the Recovery and Reconstruction Plan with JICA Approach

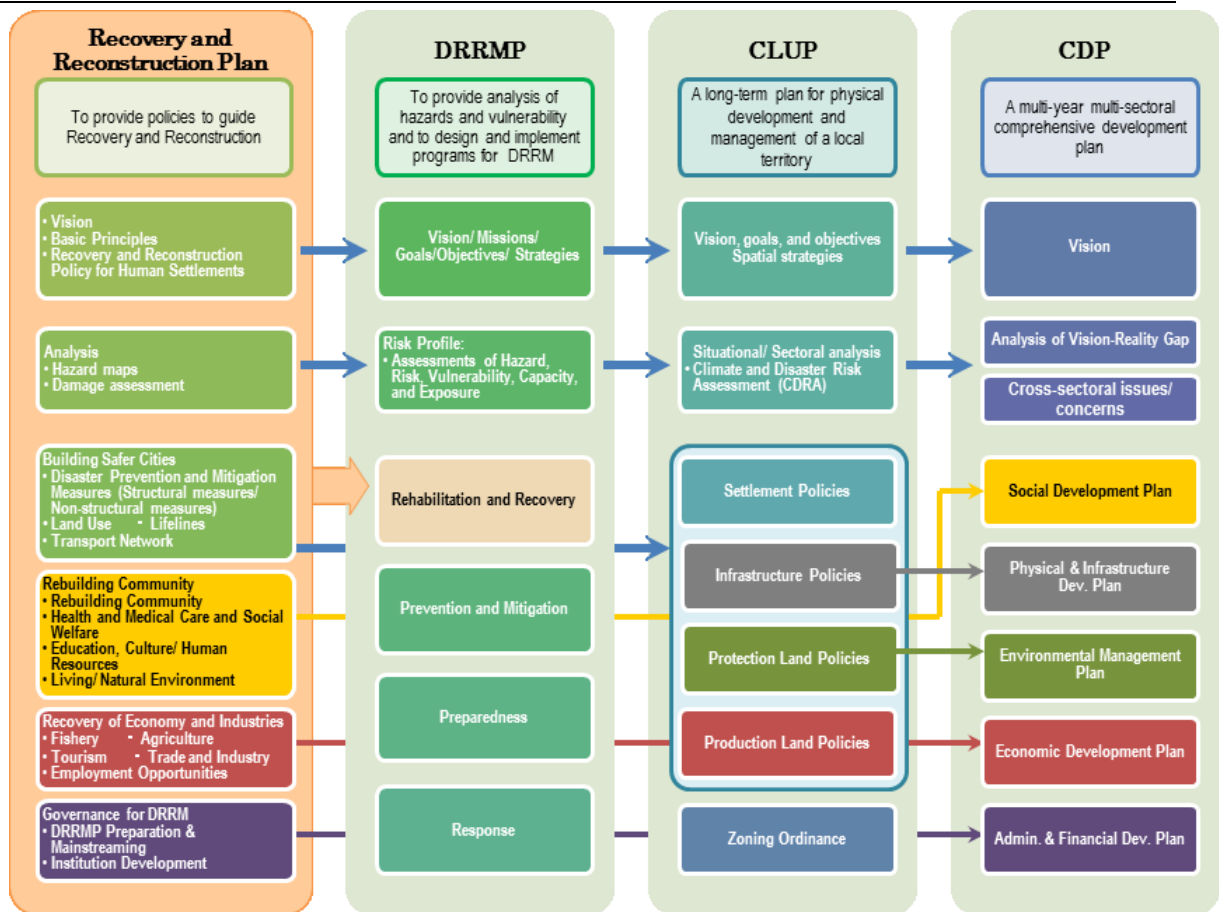
For LGUs, the derived programs and projects based on the policy are expected to be inputted into the current local plans. While the recovery and reconstruction plans have been formalized and some of the proposed projects are already implemented or funded, in the long run such plans should be continued to be updated for years. Also DRRMPs have been prepared in some LGUs based on RA10121 and they are expected to be updated based on people’s disaster experience, new technology and knowledge from international communities.

Recovery and Rehabilitation Plans in Japan are generally recognized to cover a wide range of areas including cover cross cutting concerns as well as individual areas such as the recovery of people's lives and restoration of the local economy. Such range of coverage is also recommended for DRRMPs for the Philippines even though their operational time is comparatively short.

Among the four (4) DRRM priority areas such as 1) prevention and mitigation, 2) disaster preparedness, 3) disaster response and 4) rehabilitation and recovery, certain cross cutting concerns have been recognized in the NDRRMP. These include health, human-induced disasters, gender mainstreaming, environmental protection, cultural sensitivity or indigenous practices, and the rights based approach. They are a combination of issues and approaches that should be taken into consideration in each of the priority areas.

The cross cutting concerns, as well as recovery people's lives and restoration of the local economy should be included / reflected in the CLUP of each municipality as a long-term development and management plan.

The proposed policies and technical approaches that have been initiated since Typhoon Yolanda and will be used in the preparation of the RRP shall also be linked to the planning of CLUP and DRRMP as well as CDP. In such case, the materialized programs and projects under the JICA proposed policy can be incorporated into the existing various plans. In addition, the proposed program and projects shall become direct references for the updating of mandated local government plans such as the Comprehensive Land Use Plan and Comprehensive Development Plan, Annual Investment Program, and Executive- Legislative Agenda (ELA). The areas to be reflected from the 3 principles into DRRMP, CLUP and CDP are illustrated in Figure 7.2-2.



Source: JICA Study Team

Figure 7.2-2 Relationships among LDRRMP, CLUP and CDP

7.3 Selection of LGUs as model area

7.3.1 Criteria of LGU Selection

The basic viewpoints for the selection by the JICA Study Team are as follows:

- (i) Number of victims by Typhoon Yolanda is comparatively large.
- (ii) Variation in terms of the topography such as plain area, hilly area and peninsula.
- (iii) Having highly urbanized areas as an economic growth center

The number of victims by typhoon Yolanda is the most important factor because of the significance of disaster risk reduction in the target area. The topographical variation is also important because the contents of the RRP and CLUP are closely depending on it and of consideration of future application of the JICA Study for other LGUs.

7.3.2 Selection of LGUs in Target Area

Among the target area in the JICA Study (18 LGUs), five (5) LGUs have been selected for the collaborative workshop style's technical assistance in terms of the comprehensive recovery and reconstruction planning activities.

Table 7.3-1 shows the population in 2010, the number of victims by Typhoon Yolanda, and other physical damage for 18 LGUs. Regarding the number of victims who lost their lives, it is quite clear that the number of the victims which is more than 100 is concentrated on some specific LGUs, namely Tacloban, Palo, Tanauan (in Leyte Province), Basey (in Samar Province) and Guiuan (in Eastern Samar Province).

Table 7.3-1 Basic Features of 18 LGUs in Target Area

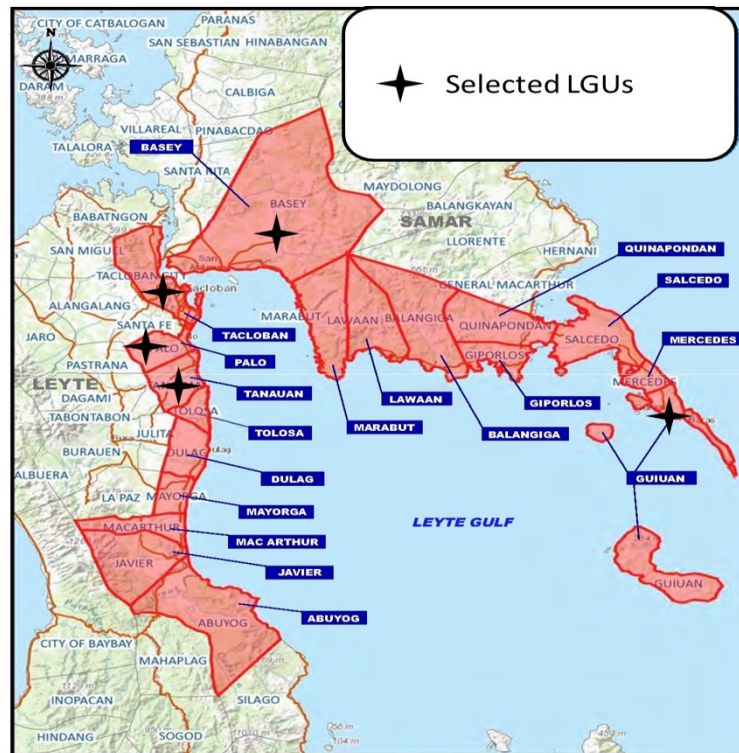
No.	Name of Municipality/ City	Population (2010 C)	Damage Data					
			Casualty			Building Damage		
			Dead	Missing	Total	Totally damaged	Partially damaged	Total
[Leyte]								
1	Tacloban	221,174	2,542	594	3,136	12,270	46,553	58,823
2	Palo	62,727	1,088	292	1,380	13,481	1,435	14,916
3	Tanauan	50,119	1,252	754	2,006	6,670	3,994	10,664
4	Tolosa	17,921	32	0	32	2,397	1,416	3,813
5	Dulag	41,757	26	3	29	8,104	780	8,884
6	Mayorga	14,694	4	0	4	2,063	1,191	3,254
7	Macarthur	18,724	10	0	10	3,741	243	3,984
8	Javier	23,878	5	0	5	3,159	1,921	5,080
9	Abuyog	57,146	33	0	33	4,270	8,006	12,276
	Sub-total	508,140	4,992	1,643	6,635	56,155	65,539	121,694
[Samar]								
10	Basey	50,423	194	38	232	1,161		1,161
11	Marabut	15,115	30	0	30	2,272	858	3,130
	Sub-total	65,538	224	38	262	3,433	858	4,291
[East Samar]								
12	Lawaan	11,612	11	0	11	2,866		2,866
13	Balangiga	12,756	14	0	14	2,919	370	3,289
14	Giporlos	12,040	14	0	14	1,000	2,971	3,971
15	Quinapond	13,841	10	0	10	2,538	582	3,120
16	Salcedo	19,970	29	0	29	2,561	1,344	3,905
17	Mercedes	5,369	1	0	1	183	1,142	1,325
18	Guiuan	47,037	106	16	122	10,008	1,601	11,609
	Sub-total	122,625	185	16	201	22,075	8,010	30,085
	Total	696,303	5,401	1,697	7,098	81,663	74,407	156,070

Source: JICA Study Team

Considering those facts, the selected LGUs are as follows:

- 1 Tacloban City (Leyte Province)
- 2 Palo Municipality (Leyte Province)
- 3 Tanauan Municipality (Leyte Province)
- 4 Basey Municipality (Samar Province)
- 5 Guiuan Municipality (Eastern Samar Province)

The location of the selected LGUs are shown in Figure 7.3-1.



Source: JICA Study Team

Figure 7.3-1 Location Map of Selected 5 LGUs

7.4 Planning Status in LGUs

Against this background, the aim of the support activities to individual LGU of JICA study team, is capacity building of LGU officials involved in the planning, rehabilitation and reconstruction planning that is based on the understanding of the hazard map, to reflect into land-use planning, materialization of the contents of the DRRMP, a clarification of cross-sectoral planning elements in the rehabilitation and reconstruction plan.

Most of the LGU at the moment has passed CLUP and DRRMP while some are outdated. However, from a long-term view, these individual plans through seamless study work, in order to incorporate disaster experience, new technology and findings from abroad, are to be revised as necessary. Based on the policy recommendations to the entire affected areas that were compiled in Part 1 by JICA study team, rehabilitation and reconstruction plans of specific individual LGU, can be reflected in the plan, such as CLUP and DRRMP, thus CDP.

7.5 Basic Policies

Policy recommendations proposed in Part1 as described above, three areas, ranging more than 10 items. JICA study team, performs grouping corresponding to this three areas when planning support activities to individual LGU, nominated LGU staff related to the item (sector) related to each group, a

discussion at the workshop style was decided. The basic action policies for each group are as follows.

7.5.1 Group on Building Safer Cities

Hazard map comprehension should be done with LGU officials using the JICA produced scientific and accurate hazard maps (storm surge, flood and tsunami) in order to discuss DRRMP. Special attention should be made to structure and non-structure measures, safety of evacuation center, practical evacuation plans and study of emergency transport plan.

7.5.2 Group on Recovery of People's Daily Life

The overall planning framework for social sectors should be based on Millennium Development Goals and Basic Human Needs that are recognized among stakeholders. Thus vision and objectives of sub-sectors are followed by existing ones. It was aimed that factors on DRRM for recovery and reconstruction planning should be reflected into the sub-sector plans. The factors on DRRM are the relationship between facilities and hazard, continuation of facility function during disasters, utilization of facilities for evacuation and education on people before and after the disasters.

7.5.3 Group on to Recovery of Regional Economy and Promotion of Industries

In general, economic sector should be strong by itself and have strong human ties among internal and external areas in order to enhance the resiliency during disasters. The overall framework of economic sector has to depend on local potential, situation and people's desire. In this sense, the direction of economic sectors has a wide variety of freedom.

7.6 Recovery and Reconstruction Planning as the Workshop Result

7.6.1 Fine-tuning of the Exiting Plans

Based on the workshop discussions, recovery and reconstruction plans for the model areas were documented. The document is composed of the following items.

1. City Profile
2. Damage caused by Yolanda
3. Progress in Recovery and Reconstruction
4. Issues and Problems in Recovery and Reconstruction
5. Vision for Recovery and Reconstruction
6. Recovery and Reconstruction Policies /Projects

7. Hazard Maps
8. Recovery and Reconstruction Map (Structural and Non-structural Measures, and Land Use)

The contents of the above items have been prepared focusing on the latest information and discussion in the workshop with each LGU. While the title of this section is recovery and reconstruction plan, each items shall be the candidate for reflecting to the CLUP and CDP as well as the current RRP. Especially the concrete proposal for Policies /Projects can be referred in the preparation of CDP.

“Supplemental Guidelines on Mainstreaming Climate and Disaster Risks in the Comprehensive Land Use Plan, 2014” has been formulated until August of 2014 by the Housing and Land Use and Regulatory Board (HLURB) which is the supervising body of CLUP and obligates each LGU to follow the guidelines for the appropriate revision of CLUP.

7.6.2 Tacloban

(1) Progress in Recovery and Reconstruction

The Tacloban Recovery and Rehabilitation Plan (TRRP) has been drafted until May of 2014 by UNDP support as well as technical assistance from UN-Habitat. Contents of the plan can be adapted to CLUP, CDP, AIP and ELA which will be revised or formulated by the city of Tacloban.

The planning process for non-structural countermeasures of Tacloban city has been progressed such as designation of evacuation shelters, etc. As for the progress of structural countermeasures which protect the city from tidal surge disaster, etc., it still remains conceptual description in the plan of the coastal zone development.

As for the LGU’s activities of Tacloban city for Climate and Disaster Risk Assessment (CDRA), the activities have been supported by international aid agencies (e.g. UNDP, etc.) as a part of the Resilience and Preparedness for Inclusive Development (RAPID) Programme. It is indispensable for the city to carry out the CDRA activity since it is a part of requirements for the approval of the Comprehensive Land Use Plan (CLUP) by the Housing and Land Use and Regulatory Board (HLURB). Moreover, the Climate Change Commission (CCC) requests the implementations of CDRA in terms of climate change impacts.

UN-Habitat has been supporting the city for revision of the CLUP from the comprehensive point of view. A series of workshops for the concerned officers have been held for assisting the CLUP revision. Continuously, the plan will be completed near in the future by the officers with the assistances from AusAID and UNDP.

It is expected that outputs of CLUP, which include index evaluations assessing possibility of

community or town development based on present available census data, will be validated with the proposed future plan supported by the JICA team, which are to be prepared based on the hazard maps with the applications of systematic simulation analyses.

The recovery and reconstruction for social sector, in general, has been progressed in the way of rehabilitation of damaged facilities, capacity building for the personnel related with the sector by the assistance from line agencies and international NGOs.

The recovery and reconstruction for economic sector such as agriculture and fishery, in general, has been supported by various agencies and international and national NGOs/organizations through providing materials, equipment and physical rehabilitation.

(2) Issues and Problems in Recovery and Reconstruction

1) Building Safer Cities

a) DRRM:

- ◆ Revision of existing land use based on the latest hazard maps
- ◆ Improvement of development along coastal area in terms of disaster risk reduction
- ◆ Insufficiency of plan for structural countermeasures
- ◆ Serious insufficiency of basic infrastructure
- ◆ Inadequate plan for evacuation shelters
- ◆ Improvement for evacuation drill
- ◆ Insufficient organizational framework and know-how for the planning of disaster risk reduction
- ◆ Necessity of consideration on development of emergency transportation roads
- ◆ Necessity of structure strengthening for public facilities and evacuation shelters

b) Public Utilities:

- ◆ Water Supply

The main issues on water supply are

- a. Leakage from water pipes, stealing water or non-payment;

- b. Inadequate Water Treatment Facility;
 - c. The Stand-by Power Source is not secured;
 - d. Lack of durability of pipe and inadequate distribution system;
 - e. Lack of covering depth of pipe;
 - f. Exposure of water meter above the ground;
 - g. Lack of water volume and water pressure.
- ◆ Electricity
- a. Lack of vehicle such as boom trucks with bucket and digger, and one truck for pole carriage.
 - b. Depletion of spare parts and potential trouble are concerning.
 - c. Replacement of heavy equipment is highly expected.

2) **Recovery of People's Daily Lives**

a) **Health:**

- ◆ Need to accelerate for repairing birthing facilities
- ◆ Gaps in prioritizing in identification and activities (human resource, equipment, technologies)
- ◆ Mental health and WASH should be given enough budget
- ◆ Weak drug management system
- ◆ Safer location for public cemetery is required

b) **Education:**

- ◆ Increased unsafe and inadequate classrooms and school buildings
 - a. Damaged classrooms and buildings
 - b. Insufficient classrooms due to the increase of enrolment in the relocation sites
 - c. Schools used as evacuation centers are still damaged or not relocated yet

- ◆ Lack of knowledge on DRRM and CCA among teachers and students at all levels
 - ◆ Increasing number of school leavers due to the distance from bunkhouses to schools and trauma among teachers and school children
 - ◆ Loss of school materials and equipment including:
 - a. Textbooks, instructional materials, educational and learning materials / supplies
 - b. ICT equipment
 - c. School furniture
- c) **Social Welfare:**
- ◆ Unrepaired social welfare facilities (e.g. Daycare Centers, OSCA, etc.)
 - ◆ Lack of social welfare facilities for the vulnerable population (e.g. children in conflict with the law (CICL)), PWD Affairs Office, separate counseling space for CSWD clients)
 - ◆ Insufficient service delivery to clients including children, women, senior citizens and PWD due to:
 - a. Shortage of CSWDO personnel including social workers
 - b. Poor referral mechanisms and case management (e.g. lack of multi-disciplinary functions at EVRMC WCPU, absence of CICL Center)
 - c. Increasing risk of VAWC, child trafficking and CICL after Yolanda
 - ◆ Increased number of displaced families
- d) **Solid Waste Management:**

The following issues were raised and discussed in the workshop held on September 19, 2014.

- ◆ The sectoral plan of “10-years’ SWM Plan 2007-2017” has to be updated and reviewed because the base scenarios for the plan have been changed after the Yolanda.
- ◆ Permanent resettlement houses will be constructed in the area adjacent to the existing dumpsite (distance of 250m).
- ◆ Need to strengthen recycling system
- ◆ Big gap between SWM revenues and expenditures.

3) **Recovery of Regional Economy and Promotion of Industries**

a) **General Economy**

Most of recovery efforts relating to the economy have been focused on rehabilitation/ reconstruction/ recovery of the damaged facilities and activities. That affected seriously to recover ordinal business activities in the town proper. A lot of in-kind and financial assistances have been extended to the suffered people for relieving purpose, although some of them were not market oriented

Although the municipality's coconut related damages were limited, the expected economic shrinkage due to production value reduction by damaged coconut trees, which may last for a several years at least for the region, in the study area has to be encountered.

Once shattered wholesale business entities have come back due to the current preferable economic climate mostly due to inflow of recovery and reconstruction assistance related monetary inflow.

b) **Agriculture**

- ◆ Lack of coco seedlings of advanced varieties for replanting
- ◆ Limited livelihood for survived farmers
- ◆ Limited work opportunity for women / no chance to fulfill women's potential
- ◆ LGU is waiting for the contribution of budget for several assistances that Central government announced.

c) **Fishery**

At the workshop, the following issues and problems were dealt with:

- ◆ Enormous increase of fishing boats provided after Typhoon Yolanda adding pressure to the sea waters.
- ◆ Decreasing fish catch due to typhoon-damaged marine environment.
- ◆ Low local supply of fish. Most of available fish come from other regions.
- ◆ Hatcheries in Guiuan were badly damaged by Typhoon Yolanda. This leads to shortage and high price of fingerlings in Tacloban.

Tacloban City needs to focus on the production side of fisheries to complement the economic needs of the sector and decrease pressure to the marine environment.

(3) Recovery and Reconstruction Policies

1) Building Safer Cities

a) Basic Strategies for DRRM:

- ◆ Protection of city center by raising up level of the whole national road to be embankment road against tidal surge disaster from Tacloban to Tanauan
- ◆ Relocation from the seriously damaged areas, estimated based on the simulation analyses
- ◆ Appropriate allocation of evacuation shelters and formulation of evacuation plan considering the distribution of the population at Barangay level

b) Structural countermeasures:

- ◆ The levels of main roads will be raised up as embankment road.

Table 7.6-1 Outline of Structure Measure

Target Area	Tacloban-Palo-Tanauan
Target Hazard	Storm Surge
Target Return Period	50 years return period (more frequent than Yolanda)
Structure Measure	Combination of Existing Road Heightening and Tide Embankment
Total Length	26.9 Km(Opt 1) 27.3 Km(Opt 2)
	Section 1: 4.2 km (Tacloban) Section 2 : 2.9 km (Tacloban) Section 3: 5.2 km (Tacloban) Section 4 Option 1: 7.4 km /Option 2: 7.8 km (Tacloban-Palo) Section 5: 4.1 km (Palo-Tanauan) Section 6: 3.1 km (Tanauan)

Source: JICA Study Team

c) Relocation:

- ◆ Planned relocation from the seriously damaged areas, which are located out of the area protected by structural countermeasures
- ◆ Relocation to the northern areas for new urban development

d) Non-structural countermeasures:

- ◆ Evacuation Plan
 - Confirmation of details of the plan at Barangay level such as evacuation procedure, emergency routes, possible number of evacuee, etc.
- ◆ Technical advice prior to evacuation drill
 - Fundamentals of early warning
 - Persons in need of aids on occasions of disaster
 - Measures for evacuations by cars and traffic jams

2) Recovery People's Daily Lives

a) Health:

Tacloban city is the regional center in medical and health care, and the number of medical facilities has been increased because of the increasing population. With those situations, Taclobanons especially those belong to the disadvantaged families and individuals has to be prioritized together with the affected population who suffered from the Typhoon Yolanda.

- ◆ Policy 1: Strength and secure access to quality health services
- ◆ Policy 2: Strict enforcement of the sanitation code
- ◆ Policy 3: Adopt the National Reproductive Health Law
- ◆ Policy 4: Standardization of Guidelines and Policies from the national and INGOs on the support and delivery of health services
- ◆ Policy 5: Safer location for public cemetery

b) Education:

Tacloban City, in collaboration with DEPED, has developed the following policy, programs and projects for the revised CLUP in order to tackle the unsafe and inadequate educational

environment, lack of knowledge on DRRM and CCA among teachers and students, and increasing risk of school drop-outs:

- ◆ Policy 1: Build a child-friendly, gender-sensitive, safe and motivating educational environment for school children and teachers

c) Social Welfare:

In order to restore its advanced social welfare services as a regional hub, Tacloban City shall incorporate the following policies, programs and projects in the sector of social welfare for the revised CLUP:

- ◆ Policy 1: Build safer and more appropriate spaces for social services for the vulnerable population / Enforce national laws and ordinances regarding the accessibility of facilities and buildings for PWD senior citizens
- ◆ Policy 2: Strengthen the social welfare system for the vulnerable population
- ◆ Policy 3: Restore the lives of the displaced people

d) Solid Waste Management:

The 10-years' SWM Plan constitutes fundamentally sectoral policies and strategies of SWM, and assume an important role also in formulating RRP, DRRMP, CLUP and annual budget.

3) Recovery of Regional Economy and Promotion of Industries

a) Basic Strategies for the Overall Economy Sector:

- ◆ Resilience of the economic sector is heightened by reinforcing strength of economy itself in principle and by fostering internal and external human/ economic linkages.
- ◆ Enhancement of regional distribution center functions such as wholesale trade center for incoming commodities from outside the Region including fishes,
- ◆ Establishment of regional market center functions both for collection and distribution of local commodity products,
- ◆ Materialization of tourism gateway and human resource development center functions,

b) Agriculture:

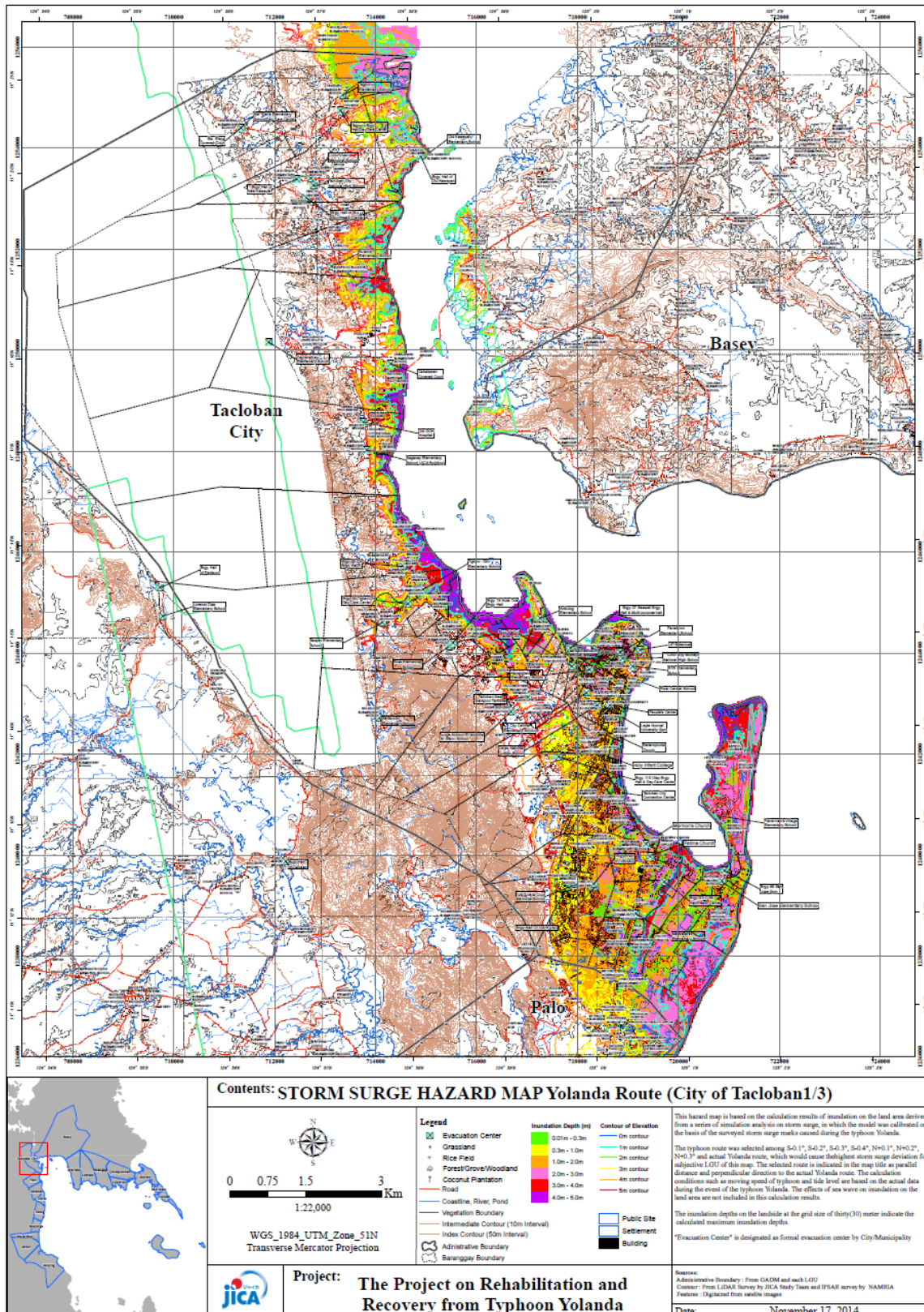
Basic Policy for Agriculture:

- ◆ Reactivate livestock raising
- ◆ Integrated farming of fruit trees, vegetables and small ruminants with coconut
- ◆ Improvement of vegetable production through organic farming
- ◆ More income for rice farmers
- ◆ Establishment of a new trading post for the federation of Tacloban farmers
- ◆ Agro-forestry

c) Fishery:

Basic strategies to achieve the goals for fishery are as follows:

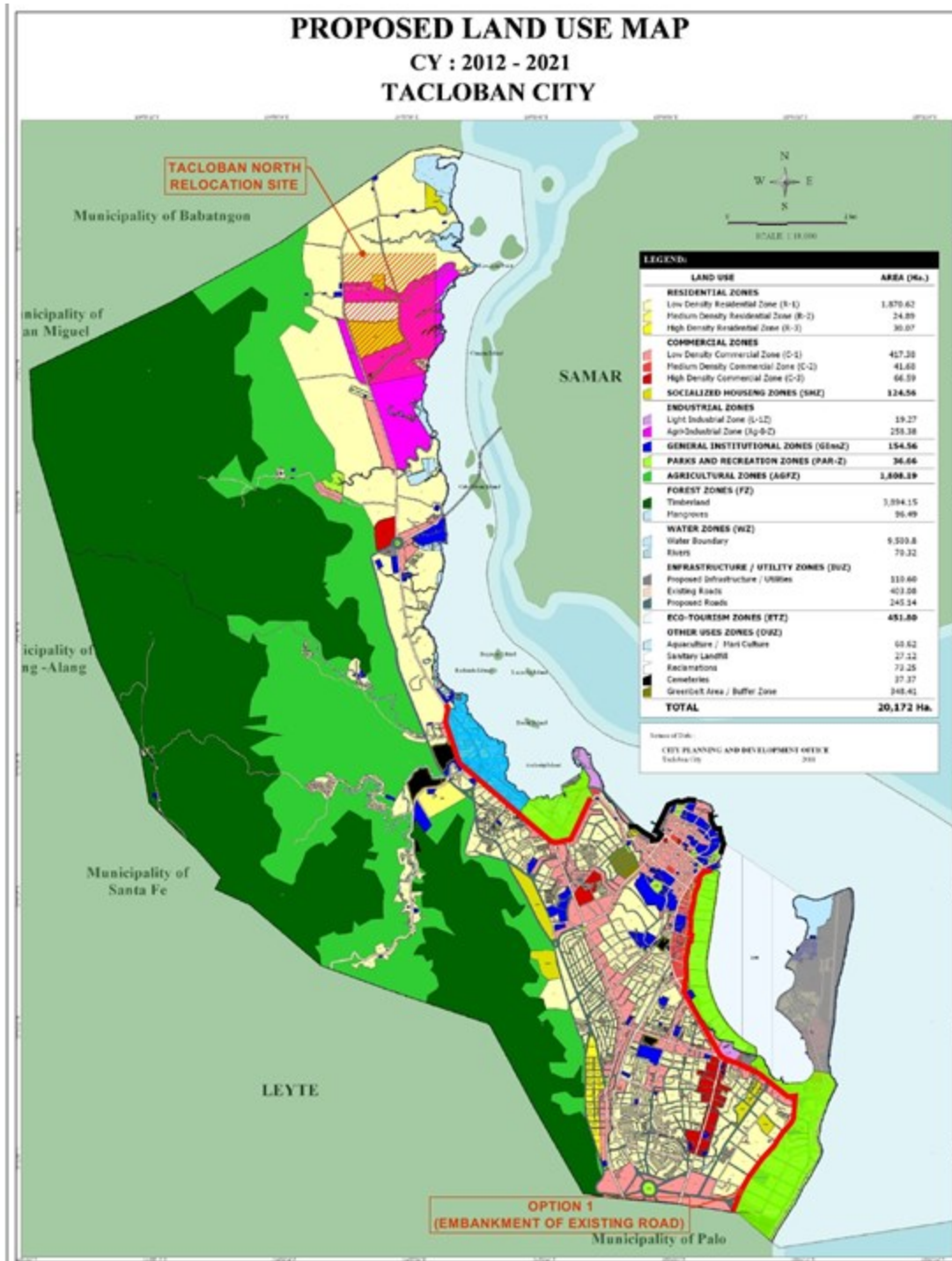
- ◆ Decrease fishing pressure in the city waters through shift from capture fisheries to aquaculture.
- ◆ Provide assistance on fish farm technology to affected fisherfolk.
- ◆ Provide alternative / additional sources of income through capacity/skills building for raising, handling, processing and marketing of fish products including high value species.



Source: JICA Study Team

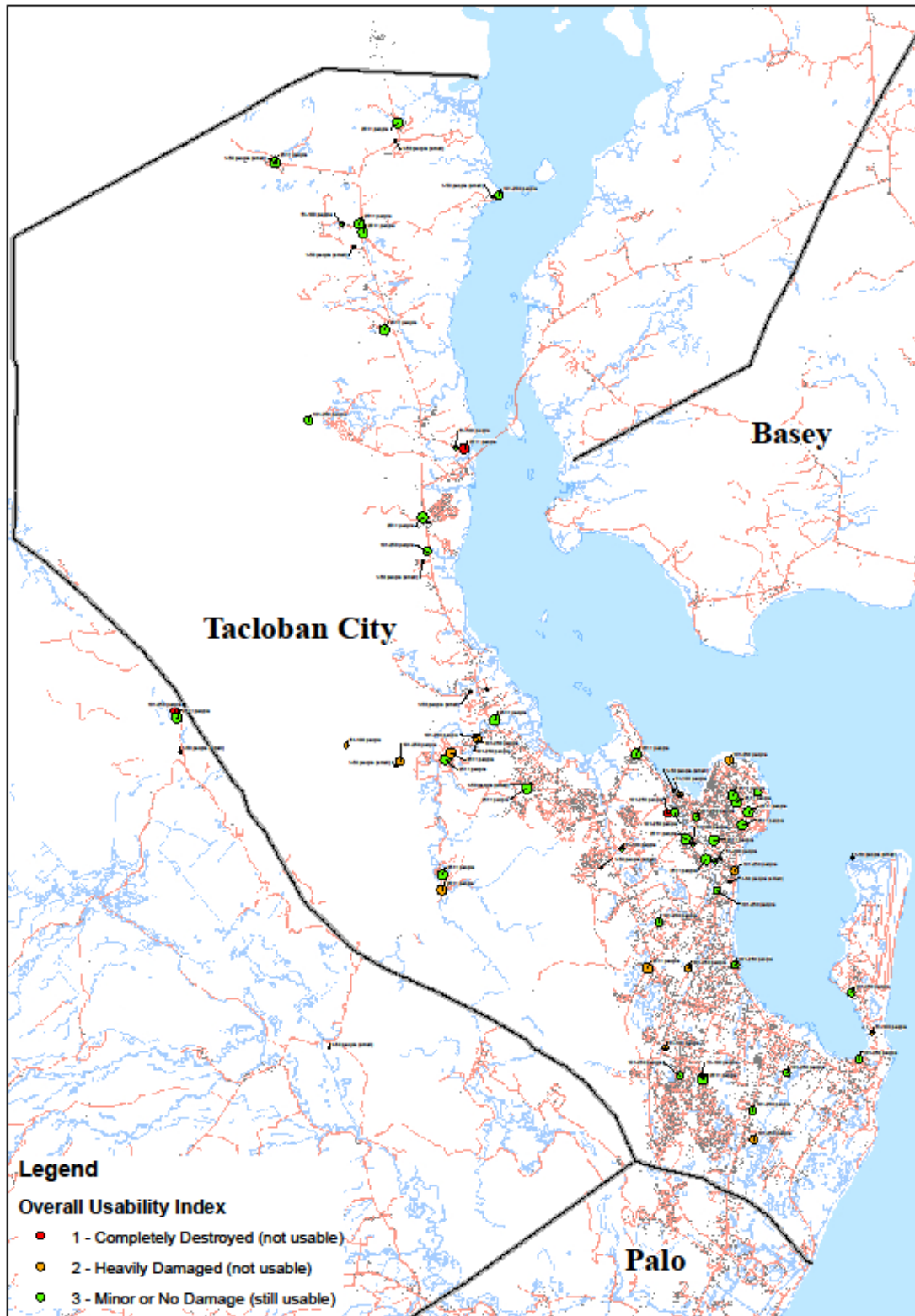
Figure 7.6-1 Storm Surge Hazard Map of Tacloban (a tool for Recovery and Reconstruction Planning)

(4) Recovery and Reconstruction Map (Structural Measures/ Land Use)



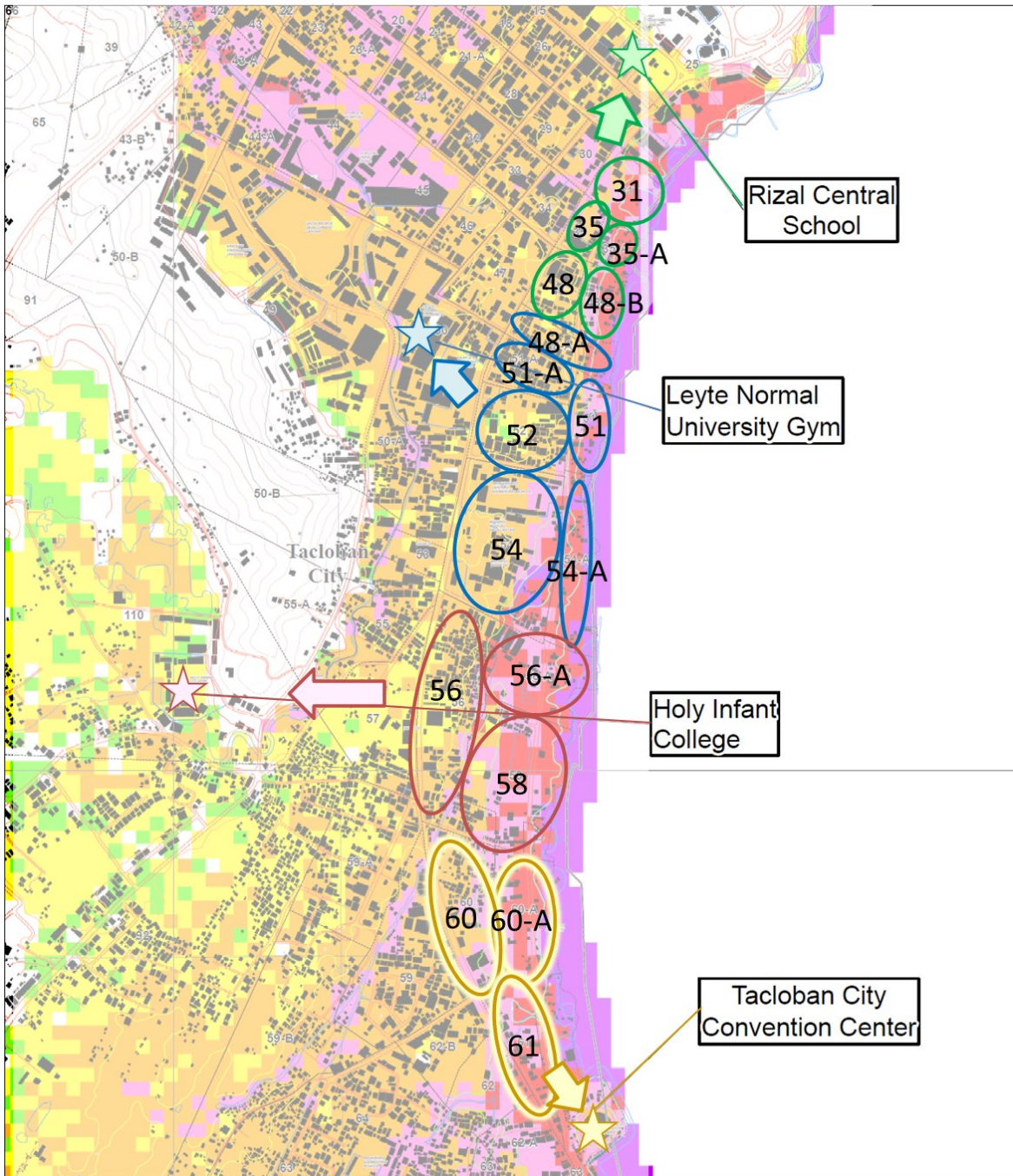
Source: JICA Study Team

Figure 7.6-2 Draft revision of the land use map of CLUP (Tacloban)



Source: JICA Study Team

Figure 7.6-3 Usability of Existing Evacuation Shelters in Tacloban city



Source: JICA Study Team

Figure 7.6-4 Allocation of Barangay Level to Evacuation Center by Tacloban city

7.6.3 Palo

(1) Progress in Recovery and Reconstruction

A post-disaster redevelopment plan for the city has been proposed until July 2014 from a private

architect group and still remains no progress since then. On the other hand, another large-scaled development plan, proposed by the province, has been progressed towards the realization in Palo city. Then, it may result two big urban developments (The one is the existing Poblacion of the city, the other will be developed by the province.) in the city.

DRRM: The planning process for non-structural countermeasures has been progressed such as evacuation plan, etc. On the other hand, effective structural countermeasures protecting from tidal surge disaster have yet to be considered. Only the damaged facilities (e.g. seawall, etc.) were repaired to the former state.

The recovery and reconstruction for social sector, in general, has been progressed in the way of rehabilitation of damaged facilities, capacity building for the personnel related with the sector by the assistance from line agencies and international NGOs.

The recovery and reconstruction for economic sector such as agriculture and fishery, in general, has been supported by various agencies and international and national NGOs/organizations through providing materials, equipment and physical rehabilitation.

(2) Issues and Problems in Recovery and Reconstruction

1) Building Safer Cities

a) DRRM:

- ◆ Revision of existing land use based on the latest hazard maps
- ◆ Serious insufficiency of basic infrastructure
- ◆ Insufficiency of plan for structural countermeasures
- ◆ Frequent flood disasters
- ◆ The CLUP needs to be consistent with the plan by the province.
- ◆ Inadequate plan for evacuation shelters
- ◆ Insufficient plan for evacuation drill
- ◆ Insufficiency of knowledge and human resources for formulation of “Disaster prevention plan”
- ◆ Lack of viewpoints for development of emergency transportation roads
- ◆ Necessity of structure strengthening for public facilities and evacuation shelters

b) Public Utilities:

- ◆ Water Supply

The main issues on water supply are

- a. Leakage from water pipes, stealing water or non-payment;
- b. Inadequate Water Treatment Facility;
- c. The Stand-by Power Source is not secured;
- d. Lack of durability of pipe and inadequate distribution system;
- e. Lack of covering depth of pipe;
- f. Exposure of water meter above the ground;
- g. Lack of water volume and water pressure.

- ◆ Electricity
 - a. Lack of vehicle such as boom trucks with bucket and digger, and one truck for pole carriage.
 - b. Depletion of spare parts and potential trouble are concerning.
 - c. Replacement of heavy equipment is highly expected.

2) **Recovery of People's Daily Lives**

a) **Health:**

- ◆ Main Health Center is required to be fully functional at new venue as soon as possible
- ◆ 2 Barangay Health Stations have no budget for repairing though the damage is very partial
- ◆ Poor management of data storage
- ◆ No mental health program for post disaster

b) **Education:**

- ◆ Damaged and unsafe school buildings and classrooms:
 - a. Reconstruction of damaged schools without application of uniformed structural standards and utilities (e.g. comfort rooms, hand washing facilities, electricity, etc.)
 - b. Lack of school buildings as evacuation centers particularly along the coastal line (school evacuation center only available in central Palo for the coastal communities)
 - c. Schools in NBZ (e.g. Brgy. San Fernando)
 - d. Lack of classrooms and teachers to accommodate additional students in communities around relocation sites (e.g. national high school)
 - e. Lack of school furniture and learning materials
- ◆ Risk of higher drop-out rates due to:
 - a. Financial burden for displaced families with children (e.g. elementary school in Brgy. Pawing 1km away from bunkhouse site in Brgy. Candahug)
 - b. Traumatized school teachers and children

- ◆ Lack of DRRM capacity at schools and surrounding communities
 - a. Limited school drills (for earthquakes and fire only)
 - b. Lack of linkages between school preparedness and community preparedness
 - c. Lack of development and implementation of evacuation plans at schools
 - d. Lack of basic equipment for disaster preparedness
 - e. Lack of updated DRRM training for teachers and students
- c) **Social Welfare:**
 - ◆ Lack/absence of safe and functional social welfare facilities:
 - a. Damaged Daycare Centers
 - b. Absence of shelters for Violence Against Women and Children (VAWC) survivors
 - c. Temporary Office for MSWD
 - d. Absence of an office for PWD to provide necessary recovery and reconstruction support
 - e. Lack of facilities and equipment for senior citizens
 - f. Partially damaged provincial and regional facilities
 - ◆ Insufficient social welfare services to respond to the increased needs of the vulnerable population after Yolanda:
 - a. Increased psychosocial needs
 - b. Recovery and reconstruction needs of PWD and senior citizens
 - c. Increasing risk of VAWC
 - d. Risk of increased school drop-out-rates among displaced children and youth
- d) **Solid Waste Management:**

The following issues were raised and discussed in the workshop held on September 29, 2014.

- ◆ The sectoral plan of “10-years’ SWM Plan (draft)” terminated in 2010.
- ◆ Needs to convert the existing dumpsite to sanitary landfill
- ◆ Recycling and MRFs are not functioning.
- ◆ SWM cost is unclear.

3) **Recovery of Regional Economy and Promotion of Industries**

a) **General Economy**

Most of recovery efforts relating to the economy have been focused on rehabilitation/ reconstruction/ recovery of the damaged facilities and activities. That affected seriously to recover ordinal business activities in the town proper. A lot of in-kind and financial assistances have been extended to the suffered people for relieving purpose, although some of them were not market oriented

In general there have been limited considerations for expansion/ enhancement of the economy to encounter the expected economic shrinkage due to production value reduction by damaged coconut trees, which may last for a several years at least, in the study area.

The Municipality is going to accommodate Leyte Provincial Government Office with associating estate development in its territory and resumption of NGA regional offices construction is expected.

b) Agriculture:

- ◆ Mechanization for rice cultivation
- ◆ Labor force is insufficient at the busy farming period, especially for transplanting and harvesting.
- ◆ Insufficient budget to repair damaged irrigation facilities
- ◆ Lack of coco seedlings of advanced varieties for replanting
- ◆ Continual on-going damage by Rhino Beetle on survived coconut
- ◆ Limited livelihood for survived farmers
- ◆ Limited work opportunity for women / no chance to fulfill women's potential

c) Fishery:

At the workshop, the following issues and problems were dealt with:

- ◆ NGOs gave boats (banca) to fisherfolk without coordination with LGU, resulting to the same fisherfolk having 2 or 3 boats while other fisherfolk did not receive any.
- ◆ Number of fishermen and number of banca have increased.
- ◆ Fish habitat designated as Palo Fish Sanctuary is in poor condition as it was heavily damaged by Typhoon Yolanda and soil erosion.
- ◆ No donors and NGOs provided support to fish pen operators.
- ◆ Mangrove rehabilitation has been slow.

(3) Recovery and Reconstruction Policies

1) Building Safer Cities

a) Basic Strategies for DRRM:

The following strategies was adopted for DRRM in the Municipality of Palo

- ◆ Protection of city center by raising up level of the whole national road to be embankment road against tidal surge disaster from Tacloban to Tanauan as well as by construction of back water levee
- ◆ Relocation is to be carried out from the seriously damaged areas by inundation along

coastal area on the basis of the latest tidal surge hazard map and the site will be artificial greenery of mangrove forest.

- ◆ Formulation of Binahan river improvement plan from a comprehensive point of view with the river rehabilitation plan of Tanauan city
- ◆ Formulation of evacuation plan consistent with large-scale evacuation shelter to be constructed by the Province
- ◆ Appropriate allocation of evacuation shelters and formulation of evacuation plan considering the distribution of the population at Barangay level

b) Structural countermeasures for Building Safer Cities:

- ◆ The levels of main roads will be raised up as embankment road.
- ◆ Constructions of back water levee at confluences with main rivers

c) Relocation:

- ◆ Planned relocation from the seriously damaged areas, which are located out of the area protected by structural countermeasures
- ◆ After completion of relocations, the site will be environmentally protected with artificial greenery of mangrove forest.

d) Non-structural countermeasures:

- ◆ Evacuation plan
 - Necessity of evacuation plan for multi-hazards (e.g. flood, storm surge, etc.)
- ◆ Technical advice prior to evacuation drill
 - Evacuation process for multi-hazards (e.g. flood, storm surge, etc.)

2) Recovery People's Daily Lives

a) Health:

In addition to rehabilitate the Main Health Center in the new building, it is required following plans as disaster management in health sector and shall incorporate them in the revised CLUP. It is necessary to incorporate the Build Back Better strategy in planning to be a disaster-resistant LGU.

- ◆ Policy 1: Rehabilitate and secure access to quality health services
- ◆ Policy 2: Provide adequate knowledge and prevent the infectious diseases
- ◆ Policy 3: Establish mental health program
- ◆ Policy 4: Re-establish Laboratory service
- ◆ Policy 5: Establish LGU's health data storage system and management system

b) Education:

Palo Municipality, in collaboration with DEPED District 1 and 2, will implement the following policies, programs and projects in order to address the current challenges in recovery and reconstruction and disaster risk reduction of the education sector:

- ◆ Policy 1: Improve disaster-resilience of schools / Ensure accessibility to schools from transitional and relocation sites
- ◆ Policy 2: Zero-out the drop-out rates at all levels
- ◆ Policy Option: Strengthen disaster preparedness of communities through safer schools

c) Social Welfare:

Social welfare services in Palo are made available by regional, provincial and municipal levels. In order to restore the services affected by Yolanda, the following policies, programs and projects have been developed:

- ◆ Policy 1: Increase availability of safer and more functional social welfare services
- ◆ Policy 2: Establish a more inclusive and effective social welfare system for the vulnerable population

d) Solid Waste Management:

The 10-years' SWM Plan constitutes fundamentally sectoral policies and strategies of SWM, and assume an important role also in formulating RRP, DRRMP, CLUP and annual budget.

3) Recovery of Regional Economy and Promotion of Industries

a) Basic Strategies for the Overall Economy Sector:

- ◆ Resilience of the economic sector is heightened by reinforcing strength of economy itself in principle and by fostering internal and external human/ economic linkages.
- ◆ Agricultural and livestock productivity increase (primary sector industry),
- ◆ Sustainable marine resources with adequate productivity (primary sector industry),
- ◆ Development/ enhancement of SMEs for agro-fishery industry and handicraft industry (related industries) by i) organizing SMEs for financial capability and skills training, ii) providing physical support for their common production facilities, and iii) providing marketing and sales supports,
- ◆ Trade and commerce activity promotion/ enhancement (trade and commerce industry)

b) Basic Policy for Agriculture:

- ◆ Coconut
 - Crop diversification under coconut
 - Coconut replanting program
 - Food processing to add product value and create work opportunity
- ◆ Vegetable
 - Training on technology modernization
 - Provision of high quality seed
 - Organic farming
 - New trading post
 - Farmers' direct sales shop
 - High Value Commercial Crops
- ◆ Rice
 - Modernize the technique and Mechanization of rice cultivation
 - Utilization of rice straw

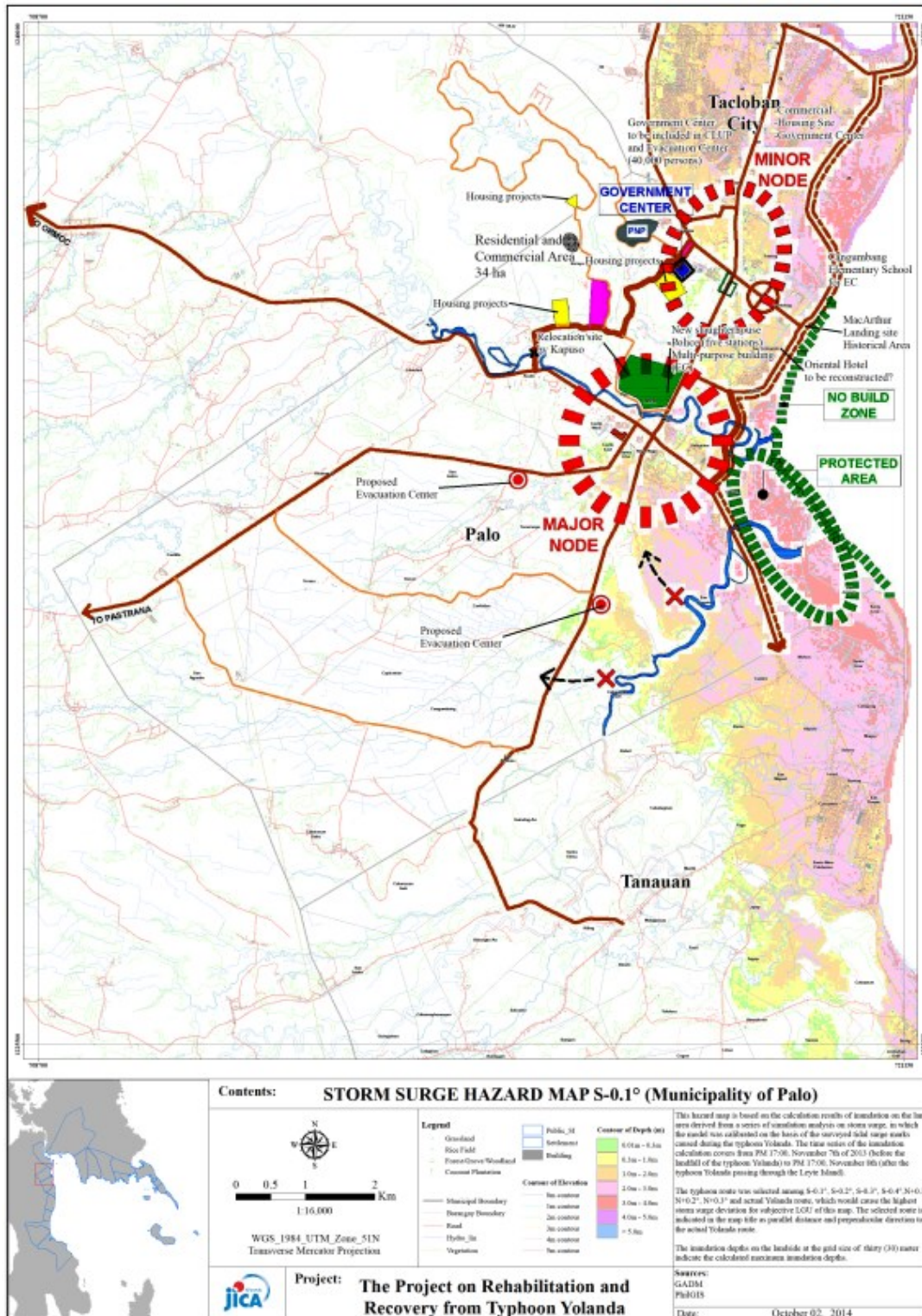
- ◆ Livestock
 - Dairy carabao raising by farmers' group
 - Carabao milk processing by women group
 - Native chicken

c) Fishery:

Basic strategies to achieve the goals for fishery are as follows:

- ◆ Rehabilitation of the livelihood of people dependent on milkfish and tilapia farming.
- ◆ Provision of fingerlings to fish pen and backyard fish pond operators.
- ◆ Conduct of bio-physical assessment and Rehabilitation of fish sanctuary.
- ◆ Provision of boundary markers for the fish sanctuary.
- ◆ Hook & line fishing is recommended.
- ◆ Organization and training for fish sanctuary management committee.
- ◆ Provision of fishing gear to fisherfolk.
- ◆ Provision of fish drying materials for small fish

(4) Recovery and Reconstruction Map (Structural Measures/ Land Use)



Source: JICA Study Team

Figure 7.6-5 Draft revision of the land use map of CLUP(Palo)

7.6.4 Tanauan

(1) Progress in Recovery and Reconstruction

DRRM: The planning process for non-structural countermeasures has been progressed such as designation of evacuation shelters, etc. On the other hand, the plan on structural countermeasures is expected to be more proceeded in the near future. It should be noted that the city had planned the implementation of excavation works as flood countermeasures, but the implementation was cancelled due to the Yolanda disaster.

The recovery and reconstruction for social sector, in general, has been progressed in the way of rehabilitation of damaged facilities, capacity building for the personnel related with the sector by the assistance from line agencies and international NGOs.

The recovery and reconstruction for economic sector such as agriculture and fishery, in general, has been supported by various agencies and international and national NGOs/organizations through providing materials, equipment and physical rehabilitation.

(2) Issues and Problems in Recovery and Reconstruction

1) Building Safer Cities

a) DRRM

- ◆ Revision of existing land use based on the latest hazard maps
- ◆ Serious insufficiency of basic infrastructure
- ◆ Insufficiency of plan for structural countermeasures
- ◆ Frequent flood disasters
- ◆ Inadequate plan for evacuation shelters
- ◆ Insufficient plan for evacuation drill
- ◆ Insufficient organizational framework and know-how for the planning of disaster risk reduction
- ◆ Necessity of consideration on development of emergency transportation roads
- ◆ Necessity of structure strengthening for public facilities and evacuation shelters

b) Public Utilities:

◆ Water Supply

The main issues on water supply are

- a. Leakage from water pipes, stealing water or non-payment;
- b. Inadequate Water Treatment Facility;
- c. The Stand-by Power Source is not secured;
- d. Lack of durability of pipe and inadequate distribution system;
- e. Lack of covering depth of pipe;
- f. Exposure of water meter above the ground;
- g. Lack of water volume and water pressure.

◆ Electricity

- a. Lack of vehicle such as boom trucks with bucket and digger, and one truck for pole carriage.
- b. Depletion of spare parts and potential trouble are concerning.
- c. Replacement of heavy equipment is highly expected.

2) Recovery of People's Daily Lives

a) Health:

- ◆ Main Health Center has not yet to start repairing though the budget has already been secured by the Philippine Home Development Mutual Fund
- ◆ No mental health program for post disaster
- ◆ No laboratory system

b) Education:

- ◆ Lack of safe and functional schools
 - a. Damaged school buildings, classrooms and workshop laboratories
 - b. Lack of funding for school rehabilitation

- c. Rehabilitation/repair without standard mitigation measures especially for schools located in the coastal areas
 - d. Difficulty in acquisition of land for additional/expansion of schools
 - e. Lack of school facilities and learning materials including for the Alternative Learning System for Out-of-school Youth (OSY)
 - ◆ Risk of higher drop-out rates at all levels due to:
 - a. Financial constraints: increased poverty after Yolanda, distance from transitional/relocation sites, lunch cost, etc.
 - b. Poor psychosocial status of teachers and students
 - c. Shortage of high school teachers
 - d. Lack of integration of DRRM in education
- c) Social Welfare:**
- ◆ Lack of availability of functional social welfare facilities:
 - a. Damaged Daycare Centers
 - b. Damaged OSCA/SCAT Office repaired but in NBZ
 - c. Absence of Day Center for Senior Citizens (at least 60 years old according to RA.9994) and a PWD Office
 - d. Damaged MSWD Office
 - e. Damaged Regional Rehabilitation Center for Children and Youth (for young offenders)
 - f. Lack of safe spaces for vulnerable women, children and youth (only referral to regional facilities in Palo)
 - g. Damaged Municipal Civic Center (basketball courts, stadium, etc.) and other sports facilities
 - ◆ Increase of displaced population (1200 families targeted):
 - a. Lack of housing
 - b. Lack of access to social welfare services
 - c. Lack of livelihood

- ◆ Lack of availability of appropriate social welfare services in response to the recovery and reconstruction needs:
 - a. Weak referral mechanism and municipal multi-disciplinary system for Violence Against Women and Children(VAWC)
 - b. Increase of young people who lost their jobs and are out of school
 - c. Poor psychosocial status of vulnerable population including senior citizens and youth
 - d. Increasing health and livelihood needs of senior citizens and PWD

d) Solid Waste Management:

The following issues were raised and discussed in the workshop held on September 25, 2014.

- ◆ The sectoral plan of “10-years’ SWM Plan (draft)” was washed away by the Yolanda.
- ◆ Needs to convert the existing dumpsite to sanitary landfill
- ◆ The composting facilities were collapsed by the Yolanda.
- ◆ Recycling and MRFs are not functioning.
- ◆ SWM cost is unclear.
- ◆ Needs to minimize the gap between SWM expenditures and revenues

3) Recovery of Regional Economy and Promotion of Industries

a) General Economy

Most of recovery efforts relating to the economy have been focused on rehabilitation/ reconstruction/ recovery of the damaged facilities and activities. That affected seriously to recover ordinal business activities in the town proper. A lot of in-kind and financial assistances have been extended to the suffered people for relieving purpose, although some of them were not market oriented

In general, there have been limited considerations for expansion/ enhancement of the economy to encounter the expected economic shrinkage due to production value reduction by damaged coconut trees, which may last for a several years at least, in the study area

b) Agriculture:

- ◆ Farmers still engage in traditional farming practices. Most of the farmers still use draft animal. Such as Carabao in their land preparation. Majority (around sixty percent) does not use Certified or Hybrid rice seeds; they still use the seeds which they get from their neighbors. Most of them don't adopt the recommended fertilizer rate. As a result the average production is low, only 3.5 ton per ha.
- ◆ The irrigation cannot supply the required water of the farmers. The Three communal irrigation systems cover only around 500 ha of rice land. The National Irrigation System although cover more barangay but due to the fact that they are located in the tail end of the system, water supply is the big problem during planting season as it was being trapped by users in the upstream. Thus water usually arrives when they no longer much needed.
- ◆ Since most of the farmers are tenants, and cultivated a small rice land (the average area cultivated is 0.75 ha) they don't qualify to avail loans and other financial institutions thus they resort to informal credit of financing scheme wherein they charged with high interest.
- ◆ There are only around 12 farmers' associations throughout the municipality, which indicate that most of the farmers are not united, so they lack cooperation with each other. Their problems are sometimes cannot be addressed right away as they lack representation in the local governing and planning bodies of the locality.
- ◆ Though most of the farmers have attended trainings on the current agricultural production technology, they are hesitant to adopt it due to the value system of "wait and see" attitude, wherein they have to observe first if the technology works.
- ◆ The connotation of the farmers on the farming operation is only a traditional activities that were handed to them from generation, they won't consider them as business activities, thus they don't try to assess whether they gain from their farming operation or not. As long as they can harvest something, is already enough for them, as a result they don't strive to increase their productivity.
- ◆ Farmers lack the production and post-production facilities and equipment. Thus, most time is still devoted to their farming operations such as their harvesting and post-harvesting activities still incurred much losses, thus reducing the productivity of the farmers.
- ◆ Most of the farmers still adopt the mono cropping system. They have not adopted diversification, although some of them were already trained on this but yet they are still

hesitant in adopting it.

- ◆ Low quality native breeds of livestock are being raised by the farmers.

c) Fishery:

At the workshop, the following issues and problems were dealt with:

- ◆ Lack of Capacity to finance the aquaculture rehabilitation by the fisherfolk.
- ◆ Rehabilitation efforts are concentrating on capture fisheries. JICA is the only agency supporting aquaculture project.
- ◆ Some fishermen still engage in illegal fishing, such as dynamite fishing, use of active gear in fishing operation.
- ◆ The FLET (Fishery Law Enforcement Team) of Tanauan is not capacitated to reinforce fishery laws and regulations due to absence or lack of equipment and facilities..
- ◆ Fishermen still lack information on coastal resources management and utilization.

Municipality of Tanauan needs to effectively monitor and regulate fishing activities. Also, aquaculture and value adding aquaculture products should be intensively introduced to typhoon-affected people to meet their livelihood needs.

(3) Recovery and Reconstruction Policies

1) Building Safer Cities

a) Basic Strategies for DRRM:

- ◆ Protection of city center by raising up level of the whole national road to be embankment road against tidal surge disaster from Tacloban to Tanauan
- ◆ Implementation of Binahan river improvement in coordination with canal development plan of Palo city
- ◆ Installation of retarding basin as flood countermeasure
- ◆ Development and utilization of higher places or hilly areas as evacuation places including environmental conservation of the areas
- ◆ Appropriate allocation of evacuation shelters and formulation of evacuation plan considering the distribution of the population at Barangay level

b) Structural countermeasures:

- ◆ The levels of main roads will be raised up as embankment road.

Table 7.6-2 Outline of Structure Measure

Target Area	Tacloban-Palo-Tanauan
Target Hazard	Storm Surge
Target Return Period	50 years return period (more frequent than Yolanda)
Structure Measure	Combination of Existing Road Heightening and Tide Embankment
Total Length	26.9 Km(Opt 1) 27.3 Km(Opt 2)
	Section 1: 4.2 km (Tacloban) Section 2 : 2.9 km (Tacloban) Section 3: 5.2 km (Tacloban) Section 4 Option 1: 7.4 km /Option 2: 7.8 km (Tacloban-Palo) Section 5: 4.1 km (Palo-Tanauan) Section 6: 3.1 km (Tanauan)

Source: JICA Study Team

- ◆ Implementation of Binahan river improvement works as countermeasures against flood disaster and tributaries improvement as well as installation of retarding basins

c) Development and utilization of higher places or hilly areas

- ◆ As evacuation places including environmental conservation of the areas:
- ◆ Construction of evacuation routes to hilly areas
- ◆ Utilization of hilly area as environmental conservation area

d) Non-structural countermeasures:

- ◆ Evacuation plan
Necessity of evacuation plan for multi-hazards (e.g. flood, tidal surge, etc.)
- ◆ Technical advice prior to evacuation drill
Evacuation process for multi-hazards (e.g. flood, tidal surge, etc.)

2) Recovery People's Daily Lives

a) Health:

In order to address the lack of health policy, program/project for disaster management and to be a disaster-resistant LGU, Tanauan is required to include following plans in health sector in the revised CLUP. They also need to do networking with other sectors and stakeholders for strengthening the health services.

- ◆ Policy 1: Enhance access to better quality health services for all people
- ◆ Policy 2: Increase availability of safer and more functional social welfare services
- ◆ Policy 3: Strengthening of health system
- ◆ Policy 4: Restore Laboratory services
- ◆ Policy 5: Establish mental health program
- ◆ Policy 6: Safe and planned Pregnancy

b) Education:

Tanauan Municipality and DEPED District 1 and 2 will work together to restore safer and

more high quality schools for teachers, students and surrounding communities through the following policies, programs and projects:

- ◆ Policy 1: Improve disaster-resilience of schools / Strengthen disaster preparedness of communities through safer schools
- ◆ Policy 2: Improve accessibility and availability of schools

c) Social Welfare:

In response to the increasing vulnerability of communities, particularly women, children, youth, senior citizens and PWD, Tanauan Municipality will accelerate its recovery and reconstruction efforts as well as reduce disaster risk through the following policies, programs and projects:

- ◆ Policy 1: Build more disaster-resilient social welfare facilities
- ◆ Policy 2: Reduce poverty and disaster risks of the displaced population
- ◆ Policy 3: Improve the availability of social welfare services for all vulnerable groups

d) Solid Waste Management:

The 10-years' SWM Plan constitutes fundamentally sectoral policies and strategies of SWM, and assume an important role also in formulating RRP, DRRMP, CLUP and annual budget.

3) Recovery of Regional Economy and Promotion of Industries

a) Basic Strategies for the Overall Economy Sector:

- ◆ Resilience of the economic sector is heightened by reinforcing strength of economy itself in principle and by fostering internal and external human/ economic linkages.
- ◆ Agricultural and livestock productivity increase (primary sector industry),
- ◆ Sustainable marine resources with adequate productivity (primary sector industry),
- ◆ Development/ enhancement of MSMEs for agro-fishery industry and handicraft industry (related industries)

b) Agriculture:

Basic Policy for Agriculture:

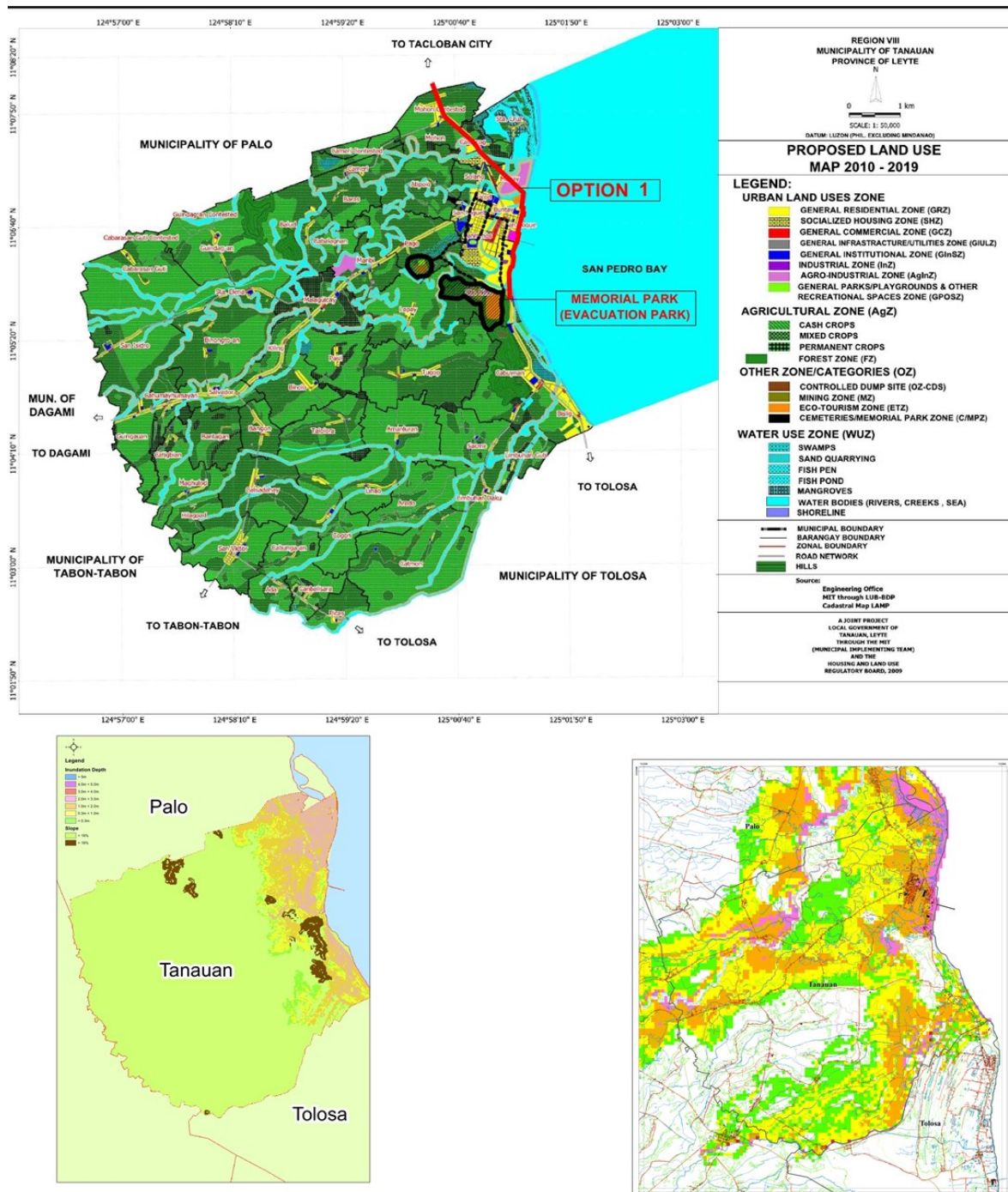
- ◆ Reactivate livestock raising
- ◆ Integrated farming of fruit trees, vegetables with coconut
- ◆ Improvement of vegetable production through organic farming & High Value Commercial Crops
- ◆ More income for rice farmers
- ◆ Establishment of a new trading post for farmers
- ◆ Mechanization

c) Fishery

Basic strategies to achieve the goals for fishery are as follows:

- ◆ Strengthening enforcement against illegal fishing.
- ◆ Promotion of environmentally sound aquaculture practices
- ◆ Development of alternative livelihood, like oyster culture, as introduced by JICA Quick Impact Project.
- ◆ The use of adaptive and participatory approaches in fisheries management.
- ◆ Training on value adding products to women and other family members of fisher folk.
- ◆ Study the plan to introduce fish aggregating devices (small payao) in hook & line fishing, not using net and compressor.

(4) Recovery and Reconstruction Map (Structural Measures/ Land Use)



Source: JICA Study Team

Figure 7.6-6 Draft revision of the land use map of CLUP(Tanauan)

7.6.5 Basey

(1) Progress in Recovery and Reconstruction

DRRM: The planning process for non-structural countermeasures has been progressed such as designation of evacuation shelters, etc. On the other hand, effective structural countermeasures protecting from tidal surge disasters, etc. have yet to be considered. Only the damaged facilities (e.g. seawall, etc.) were repaired to the former state. Relocation plans from the existing city center to higher places have been progressed as well as city development or expansion plans at the relocated area since before the Yolanda disaster.

The recovery and reconstruction for social sector, in general, has been progressed in the way of rehabilitation of damaged facilities, capacity building for the personnel related with the sector by the assistance from line agencies and international NGOs.

The recovery and reconstruction for economic sector such as agriculture and fishery, in general, has been supported by various agencies and international and national NGOs/organizations through providing materials, equipment and physical rehabilitation.

(2) Issues and Problems in Recovery and Reconstruction

1) Building Safer Cities

a) DRRM:

- ◆ Revision of existing land use based on the latest hazard maps
- ◆ Management of future land use of the existing city center as non-residential zone after the relocation
- ◆ Serious insufficiency of basic infrastructure
- ◆ Insufficiency plan for structural countermeasures
- ◆ Inadequate plan for evacuation shelters
- ◆ Insufficient organizational framework and know-how for the planning of disaster risk reduction
- ◆ Necessity of consideration on development of emergency transportation roads
- ◆ Necessity of structure strengthening for public facilities and evacuation shelters

b) Public Utilities:

- ◆ Water Supply
 - a. Huge water losses
 - b. Unpaid water (small paid quantity)
- ◆ Electricity
 - a. The area from Basey to Marabut is served with 5MW substation, so another substation will be required between Basey and Marabut.
 - b. New substation will be necessary for new development in the west of existing poblacion, but there is no plan so far.
 - c. For resilience against disasters, strengthening of poles and facilities will be required. Also emergency stand-by generators such as solar system will be good, but the cost will not be affordable.

2) Recovery of People's Daily Lives

a) Health:

- ◆ More equipment and medical supplies shall be provided for Barangay Health Stations to fully function
- ◆ Shortage of human resource is still remaining
- ◆ More resilient Barangay Health Stations are required for accommodate bigger population which will be transferred or relocated from one barangay to another

b) Education:

- ◆ Increase of dysfunctional and unsafe schools
 - a. Schools repaired by different donors without stronger structural measures (DEPED does not have a disaster-resilient building code)
 - b. Schools located in NBZ (e.g. San Antonio)
 - c. Possible need for upgrading/building schools in relocation sites
 - d. Lack of schools able to function as evacuation centers particularly in Basey District 2
- ◆ Psychosocial impact on teachers and students
- ◆ Lack of integration of DRRM in education
 - a. School drills cover earthquakes only
 - b. Outdated and limited references on DRRM in instructional materials and lack of trained teachers

c) Social Welfare:

- ◆ Shortage of safe and functioning social welfare facilities
 - a. Majority of damaged Daycare Centers unfunded for reconstruction and none can serve as an evacuation center
 - b. OSCA/Day Center for Senior Citizens in Mercado repaired without structural improvement despite its geo-hazardous location
 - c. Temporary office space for MSWD

- d. No crisis centers for women and children and rehabilitation centers for youth (only referral to Palo and Tanauan)
- ◆ Limited social welfare services for increasingly vulnerable women, children, senior citizens, PWD and youth
 - a. Lack of GBV response despite the case increase after Yolanda
 - b. Limited recovery and reconstruction assistance for senior citizens and PWD
 - c. Less livelihood alternatives for Yolanda-affected senior citizens, female-headed households and indigenous people (Manwa tribe)
 - d. Increasing numbers of unemployed youth and out-of-school children
- ◆ Lack of integration of social welfare issues in the Bases Recovery and Reconstruction Plan

d) Solid Waste and Management:

The following issues were raised and discussed in the workshop held on September 17, 2014. Current draft of “10-years’ SWM Plan” has not formulated scientifically in compliance with Republic Act 9003.

- ◆ Need to convert the existing open dumpsite to categorized disposal facilities and sanitary landfill
- ◆ Needs to strengthen the recycling and MRF system
- ◆ SWM cost is unclear.
- ◆ Needs to collect SWM fee from residential houses

3) Recovery of Regional Economy and Promotion of Industries

a) General Economy

Most of recovery efforts relating to the economy have been focused on rehabilitation/ reconstruction/ recovery of the damaged facilities and activities. Delay of the central market and bus terminal reconstruction is critical at planning stage. That affected seriously to recover ordinal business activities in the town proper. A lot of in-kind and financial assistances have been extended to the suffered people for relieving purpose, although some of them were not market oriented

Although the municipality's coconut related damages were short-time, the expected economic shrinkage due to production value reduction by damaged coconut trees, which may last for a several years at least for the region, in the study area has to be encountered.

Improved security condition of the Municipality in recent years is opportunity to enhance its economic activity especially in utilization of vast arable land potentials.

b) Agriculture:

Though rice seed and fertilizer were provided to some farmers, the fertilizer was not applied in some places where supply of irrigation water ceased by the damage on facility.

Basey has large potential rice fields; however, labor force is insufficient at the busy farming period, especially for transplanting and harvesting.

Limited work opportunity for women / no chance to fulfill women's potential

c) Fishery:

At the workshop, the following issues and problems were dealt with:

- ◆ Number of fisher folk has tripled as NGOs gave banca and fishing gear (gill net) to those who were not fisher folk before Typhoon Yolanda.
- ◆ Fishing is concentrated in municipal waters because the boat is too small to go to Leyte Gulf.
- ◆ Limited law enforcement after Typhoon Yolanda destroyed the BFAR-funded surveillance boat
- ◆ Rehabilitation of oyster and seaweed farming has been slow.
- ◆ More value-added products must be developed and marketed.

It is clear that Municipality of Basey needs to effectively control fishing boat pressure on fish stocks. Also, aquaculture and efforts at adding value to aquaculture products should be given more consideration to meet typhoon-affected people's livelihood needs.

(3) Recovery and Reconstruction Policies

1) Building Safer Cities

a) Basic Strategies for DRRM:

- ◆ Verification of development and relocation plan of Basey city with the latest hazard maps
- ◆ Implementation of relocations from Poblacion (city center) as well as villages in coastal area
- ◆ Management for non-residential areas, after the relocations
- ◆ Appropriate allocation of evacuation shelters and formulation of evacuation plan considering the distribution of the population at Barangay level
- ◆ Measures for evacuation procedure in remote islands and evacuees guiding system from the islands
- ◆ Strengthening or reinforcement of structures of public facilities and evacuation shelters

b) Relocation:

- ◆ Relocation plan from Poblacion (city center) to higher places on the west of the city and its development plan
- ◆ Relocations from villages in coastal area

c) Management for non-residential areas, after the relocations:

- ◆ Development plan in relocation area (*e.g.* locations of commercial facilities and transportation hubs) considering proper land use based on the latest hazard maps
- ◆ Development of greenery within 40-meter no-build zone including investigation on efficiency of artificial natural embankment against tidal surge disaster
- ◆ Formulation or revision of laws or regulations, encouraging residents for relocation

d) Non-structural countermeasures:

- ◆ Evacuation Plan

Appropriate evacuation plan for the existing city center until the completion of the relocation

Confirmation of details of the plan at Barangay level such as evacuation procedure, emergency routes, possible number of evacuee, etc.

- ◆ Technical advice prior to evacuation drill

Further consideration on tourism and disaster management (e.g. tourists in need of aids on occasions of disaster as well as quick and precise dissemination of early warning)

2) Recovery People's Daily Lives

a) Health:

It is required to consider the rehabilitation or renovation of health facilities based on their relocated constituents in addition to plan for providing adequate health services to all the people. In terms of the health services, it needs to increase the availability of disaster-resilient health services and shall be a disaster-resistant LGU.

- ◆ Policy 1: Recover the access to quality health services
- ◆ Policy 2: Provide adequate health services equally to all people
- ◆ Policy 3: Provide psychosocial support for healthy life
- ◆ Policy 4: Enhance access to sanitary toilets
- ◆ Policy 5: Enhance nutrition program for Healthy children

b) Education

In order to mitigate the risks of increased drop-out-rates and disaster vulnerability of school teachers and students, Basey Municipality, in collaboration with DEPED, shall incorporate the following DRRM aspects in the policies, programs and projects of the revised CLUP:

- ◆ Policy: Implement the Guidelines on DRRM at all schools including the disaster-resilient building code and DRRM education

c) Social Welfare:

In the post-Yolanda situation of the lack of safe and functioning social welfare facilities and limited services for the vulnerable population, Basey Municipality has developed the following policies, programs and projects for the revised CLUP:

- ◆ Policy 1: Increase the availability of disaster-resilient social welfare services
- ◆ Policy 2: Improve LGU and barangay's system to provide appropriate social welfare services to the vulnerable population

d) Solid Waste Management

The 10-years' SWM Plan constitutes fundamentally sectoral policies and strategies of SWM, and assume an important role also in formulating RRP, DRRMP, CLUP and annual budget.

3) Recovery of Regional Economy and Promotion of Industries

a) Basic Strategies for the Overall Economy Sector:

- ◆ Resilience of the economic sector is heightened by reinforcing strength of economy itself in principle and by fostering internal and external human/ economic linkages.
- ◆ Agricultural and livestock productivity increase (primary sector industry),
- ◆ Sustainable marine resources with adequate productivity (primary sector industry),
- ◆ Development/ enhancement of agro-fishery industry and handicraft industry (related industries),
- ◆ Enhancement of commercial activities (basic economy factor enhancement),
- ◆ Tourism promotion by upgrading Basey/ Sohoton as a major global tourism destination (global destination tourism), and

b) Tourism:

Basic strategies to achieve the goals for tourism are as follows:

- ◆ Formulate typical routes and activities packages for Sohoton and vicinity tours envisaging Tacloban as the place of origin further to the Basey Town Proper,
- ◆ Enhance information dissemination activities for tourism and investor promotion,
- ◆ Enhance linkages among tourism related stakeholders including receiving community association, transport and tour operators, accommodation and amenity business personnel, security and order entities, and MSMEs (Micro, Small and Medium Scale Enterprises) conducting handicraft manufacturing and agro-fishery-industry,
- ◆ Motivate, and train local people and business society for improvement of tourists'

experiences including local product, delicacies, and cuisines development (core for Six ternary Industry Activities). , and

- ◆ Attract tourist companies, and accommodation and amenity operators/ investors for improved tour package implementation and for accumulation of accommodation and amenity facilities in Basey.

c) Agriculture:

Basic Policy for Agriculture:

- ◆ Rice:
 - a. Increase of production -> Rice milling center (applied to DA8)
 - b. Insufficient labors in rain season -> Machinery (transplant, harvest)
 - c. More income -> Duck, Mushroom, Vermi-culture
- ◆ Coconut:
 - a. Correction of planting space (correct over plant to 10 meter interval)-> Integration with other crops -> Fruit Trees (Jack fruits, Mango, Lansonnnes, Banana), Pineapple, Corn, Peanut, Root crops (Gabi, Cassava, Sweet potato), Livestock (Cattle, Goat)
 - b. Diversification of Coconut Varieties ->For processing (Cake, Cookie, Raw meat, Virgin coco oil)
- ◆ Upland Crops:
 - a. For Food: Corn, Gabi, Sweet potato, Cassava, Soybean, Vegetables (Okra, Ampalaya)
 - b. For Feed (for Swine, Aquaculture): Corn, Cassava...
 - c. For Food Processing (Cake, Cookie...): Corn, Gabi, Sweet potato, Cassava, Soybean, Milk.
- ◆ Livestock:
 - a. Carabao (Dairy, Paddy work)
 - b. Goat, Cattle (under coconut on sloping area, Meat, Dairy)
 - c. Apiculture (Honey for cake)

- ◆ Agro- processing:
 - a. Food processing
 - b. Dairy processing
 - c. Feeds processing

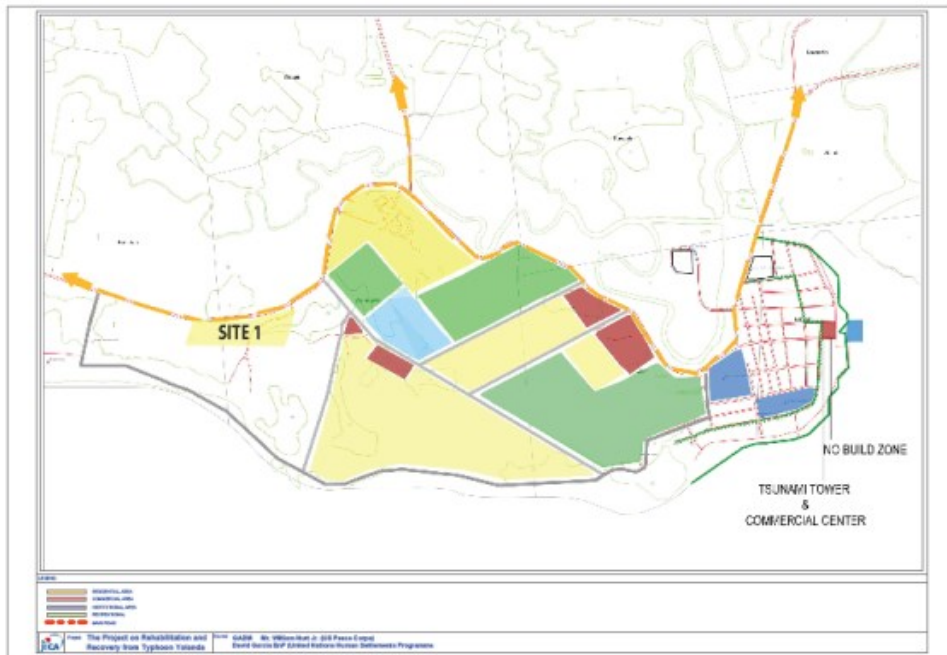
- ◆ Market:
 - a. Wholesale market establishment at production area
 - b. Basey will develop aqua-culture system and livestock production. Corn can be a material of feeds for fish and animals. These processing industries can involve rural women as well as coconut, root crop and dairy processing. These integrated industries with practical involvement of women can promote the local economic development.

d) Fishery:

Basic strategies to achieve the goals for fishery are as follows:

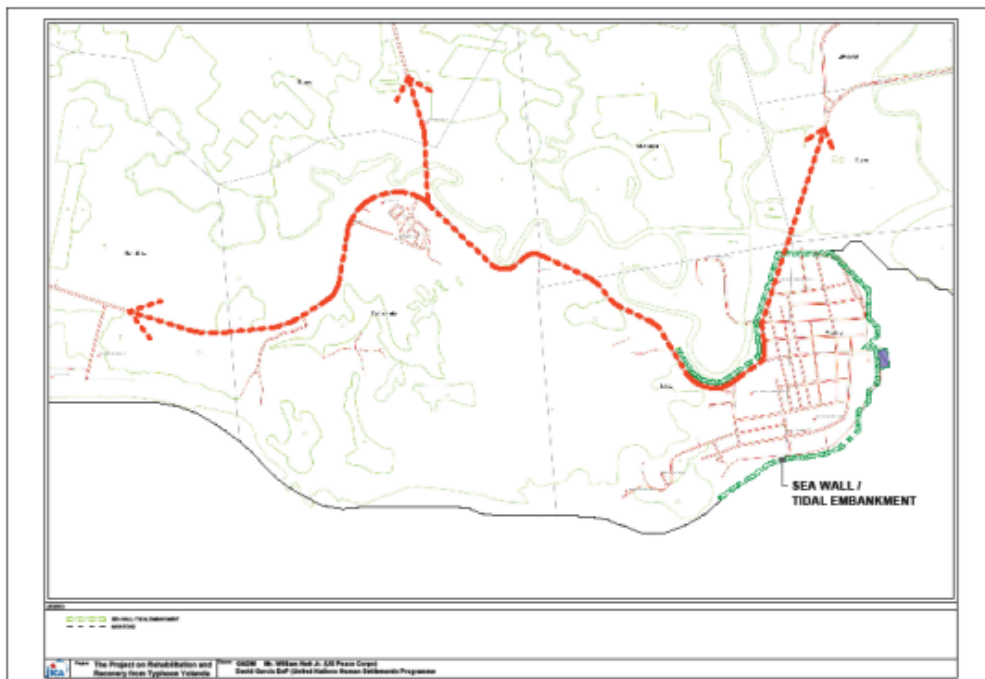
- ◆ Market-driven aquaculture
- ◆ Diversification of aquaculture practices and species.
- ◆ Planning and implementation of value-added activities including promotion and marketing of San Juanico brand milkfish.
- ◆ Control of fishing effort from BFAR- and NGO-supported boats and gill nets
- ◆ Introduction of fish aggregating devices (small payao) in hook & line fisheries.
- ◆ Provision of surveillance boat, to stop illegal fishing, and communication equipment.

(4) Recovery and Reconstruction Map (Structural and Non-structural Measures/
Land Use)



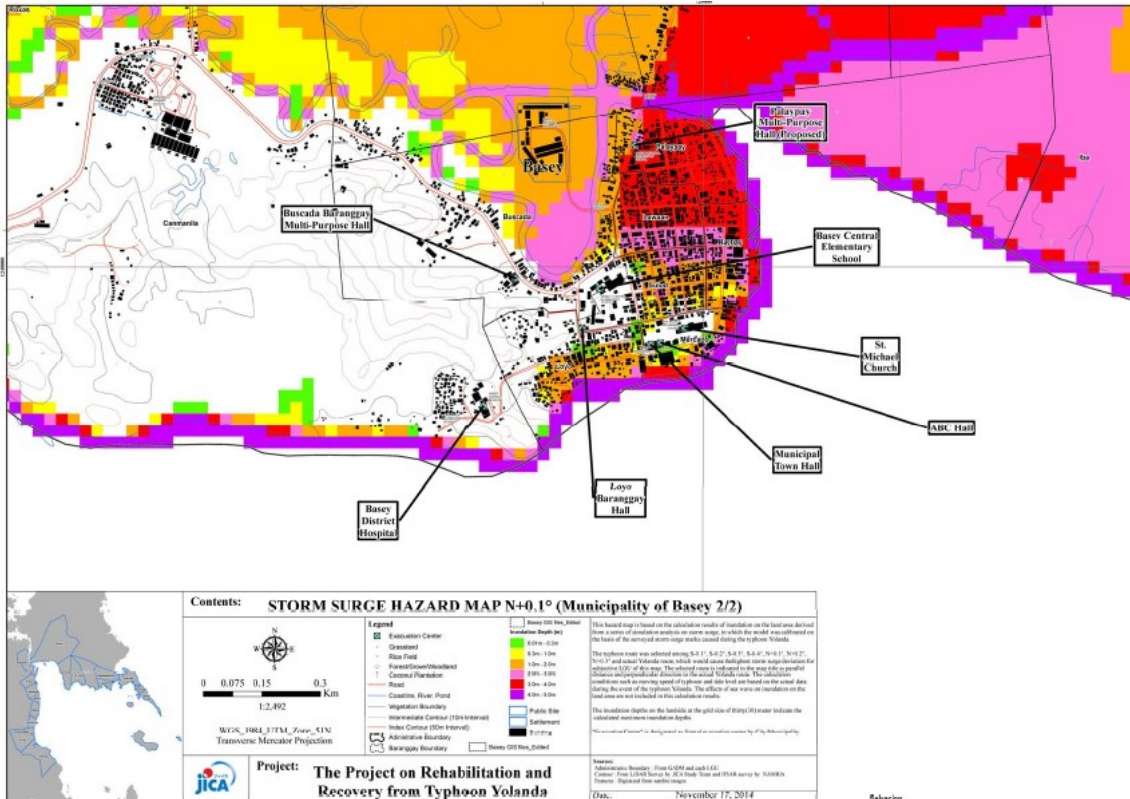
Source: JICA Study Team

Figure 7.6-7 Revised proposal for development and relocation plan of Poblacion



Source: JICA Study Team

Figure 7.6-8 Revised proposal for development and relocation plan of Poblacion (alignment of sea wall or tidal embankment)



Source: JICA Study Team

Figure 7.6-9 New Evacuation Centers to be considered (Municipality Basey)

7.6.6 Guiuan

(1) Progress in Recovery and Reconstruction

The Guiuan Recovery and Rehabilitation Plan (GRRP) has been drafted until July of 2014 by UNDP support as well as technical assistance from UN-Habitat. Contents of the plan can be adapted to CLUP, CDP, AIP and ELA which will be revised or formulated by the city of Guiuan.

“Supplemental Guidelines on Mainstreaming Climate and Disaster Risks in the Comprehensive Land Use Plan, 2014” has been formulated until August of 2014 by the Housing and Land Use and Regulatory Board (HLURB) which is the supervising body of CLUP and obligates each LGU to follow the guidelines for the appropriate revision of CLUP.

DRRM: The planning process for non-structural countermeasures has been progressed such as evacuation plan, etc. On the other hand, effective structural countermeasures have yet to be considered. Only the damaged facilities (e.g. seawall, etc.) were repaired to the former state.

The recovery and reconstruction for social sector, in general, has been progressed in the way of rehabilitation of damaged facilities, capacity building for the personnel related with the sector by the assistance from line agencies and international NGOs.

The recovery and reconstruction for economic sector such as agriculture and fishery, in general, has been supported by various agencies and international and national NGOs/organizations through providing materials, equipment and physical rehabilitation.

(2) Issues and Problems in Recovery and Reconstruction

1) Building Safer Cities

a) DRRM:

- ◆ Revision of existing land use based on the latest hazard maps
- ◆ Serious insufficiency of basic infrastructure
- ◆ Insufficiency of plan for structural countermeasures
- ◆ Inadequate plan for evacuation shelters
- ◆ Insufficient organizational framework and know-how for the planning of disaster risk reduction
- ◆ Necessity of consideration on development of emergency transportation roads
- ◆ Necessity of structure strengthening for public facilities and evacuation shelters

b) Public Utilities:

- ◆ Water Supply
 - a. The distribution pipes are of surface uPVC and are vulnerable to external forces including storm surge.
 - b. The water losses by leakage, steal and nonpayment are huge.
- ◆ Electricity
 - a. Lack of vehicle such as boom trucks with bucket and digger, and one truck for pole carriage.
 - b. Depletion of spare parts and potential trouble are concerning.
 - c. Replacement of heavy equipment is highly expected.

2) **Recovery of People's Daily Lives**

a) **Health:**

- ◆ Strengthening of health service delivery is required in isolated areas, especially in the 19 barangays in the islands
- ◆ Shortage of human resource is still remaining
- ◆ Management of data is challenging

b) **Education:**

- ◆ Increase of dysfunctional schools
 - a. Rehabilitation/repair of schools without enforcement of disaster-resilient building code as evacuation centers
 - b. Funding gaps to rehabilitate all schools (134 out of 276 damaged elementary school classrooms and 18 out of 64 damaged high school classrooms unfunded)
 - c. Possible lack of classrooms/schools in relocation sites (e.g. only combination classes for elementary level in Tagpuro)
- ◆ Risk of higher school drop-out rates at all levels because:
 - a. Children have to help their parents earn income (increased poverty after Typhoon Yolanda)
 - b. There are no safe schools for children (e.g. 17 schools are still being repaired in Guiuan South)
 - c. Children have to commute from transitional/relocation sites (e.g. 1 secondary school available for 8 barangays in Homonhon island with poorer accessibility after Typhoon Yolanda)
 - d. Students and teachers are traumatized
 - e. Children with disabilities have possibly increased

c) Social Welfare:

- ◆ Shortage of social welfare facilities while the community vulnerability has increased after Typhoon Yolanda. The issues include:
 - a. Lack of access and availability of safe spaces for GBV survivors except in Borongan, Samar municipality.
 - b. Dysfunctional Daycare Centers without sufficient funding for reconstruction. Some of the centers were repaired without mitigation measures and cannot serve as evacuation centers
 - c. No facilities for PWD in order to respond to their recovery needs
 - d. Senior citizens' Day Center repaired but can no longer function as an evacuation center for prisoners
- ◆ Increased vulnerability of women, children, senior citizens and PWD. The issues include:
 - a. Triangle INGO Limited service for GBV survivors, senior citizens and PWD in recovery and reconstruction
 - b. Less livelihood alternatives for the Typhoon Yolanda-affected senior citizens
 - c. Increasing number of children in conflict with the law
 - d. Increasing number of out-of-school youth

d) Solid Waste Management:

The following issues were raised and discussed in the workshop held on September 15, 2014.

- ◆ The sectoral plan of “10-years’ SWM Plan” has to be formulated properly and in compliance with Republic Act (RA) 9003.
- ◆ The RA also requires to close open dumpsite and to develop sanitary landfill.
- ◆ The SWM cost is unclear
- ◆ SWM fees are not collected from residential houses.

3) **Recovery of Regional Economy and Promotion of Industries**

a) **General Economy**

Most of recovery efforts relating to the economy have been focused on rehabilitation/ reconstruction/ recovery of the damaged facilities and activities. A lot of in-kind and financial assistances have been extended to the suffered people for relieving purpose, although some of them were not market oriented.

In general, there have been limited consideration for expansion/ enhancement of the economy to encounter the expected economic shrinkage due to production value reduction by damaged coconut trees, which may last for a several years at least, in the study area

b) **Agriculture:**

- ◆ Lack of coco seedlings of advanced varieties for replanting
- ◆ Slow progress of debris cleaning in coconut field
- ◆ Continual on-going damage by Rhino Beetle on survived coconut
- ◆ Limited livelihood for survived farmers
- ◆ Limited work opportunity for women / no chance to fulfill women’s potential

c) **Fishery:**

At the workshop, the following issues and problems were dealt with:

- ◆ Some donors and NGOs do not coordinate with LGU. Some fisherfolk received fishing materials twice/three times.
- ◆ Only selected households received cash from NGOs (NGOs go directly to area without coordination).
- ◆ Less support for the resource enhancement such as construction of guard house for LGU marine sanctuary, no take zone at night, protection of fishing activities is needed.

(3) Recovery and Reconstruction Policies

1) Building Safer Cities

a) Basic Strategies for DRRM:

- ◆ Estimations of damage amounts for multi-hazards based on the latest hazard maps
- ◆ Concentration of urban development in northern area of Poblacion (city center) in the main island referring to the damage estimations based on the hazard maps
- ◆ Investigation on appropriate emergency transportation by air as well as land use around the airport in the city
- ◆ Planned relocations from informal settlements around the port areas
- ◆ Appropriate allocation of evacuation shelters and formulation of evacuation plan considering the distribution of the population at barangay level including investigations for the remote islands such as appropriate evacuation shelters, routes, smooth evacuation procedure to the main island, *etc.*
- ◆ Strengthening or reinforcement of structures of public facilities and evacuation shelters

b) Development and Relocation:

- ◆ Continuous urban development of Poblacion (city center)
- ◆ Plan and construction of appropriate evacuation shelters and major tourist spots
- ◆ Relocations from informal settlements

c) Development of the main traffic network:

- ◆ Development of main roads in Poblacion (city center) crossing east-west and north-south directions
- ◆ Development of main traffic networks connecting the main island and major tourist spots
- ◆ Development as emergency transportation roads

d) Non-structural countermeasures:

- ◆ Evacuation Plan
 - Plan and development for appropriate evacuation shelters
 - Evacuation plan within or among remote islands
 - Revision of evacuation plan at barangay level
- ◆ Technical advice prior to evacuation drill
 - Further consideration on tourism and disaster management (e.g. tourists in need of aids on occasions of disaster as well as quick and precise dissemination of early warning)
 - Development of multi-purposed evacuation shelters (e.g. tourist facility, etc.)

2) Recovery People's Daily Lives

a) Health:

Guiuan is composed of sixty (60) barangays and there are some isolated areas. Thus, the health services are required to be delivered effectively to all people including the people in such isolated areas in addition to marginalized sectors. Guiuan shall incorporate the following priority policies, programs and projects in the sector of health for the revised CLUP.

- ◆ Policy 1: Recover and secure access to quality health services
- ◆ Policy 2: Enhance access to sanitary toilets
- ◆ Policy 3: Establish mental health program
- ◆ Policy 4: Establish LGU's health data storage and management system

b) Education:

Guiuan Municipality, in collaboration with DEPED, will address the structural and non-structural issues of education post-Yolanda through the following policies, programs and projects:

- ◆ Policy 1: Reconstruction of safer schools
- ◆ Policy 2: Improve the psychosocial status of school teachers and students / Provide inclusive and equitable education service at all levels

c) Social Welfare

In response to the lack of safe spaces and increased vulnerability of Yolanda-affected communities, Guiuan Municipality has developed the following social welfare policies, programs and projects for recovery and reconstruction and disaster risk reduction:

- ◆ Policy 1: Improve availability of disaster-resilient social welfare services
- ◆ Policy 2: Increase capacity of MSWD including on PWD issues / Promote economic empowerment of the vulnerable population / Strengthen protection services for women and children

d) Solid Waste Management:

The 10-years' SWM Plan constitutes fundamentally sectoral policies and strategies of SWM, and assume an important role also in formulating RRP, DRRMP, CLUP and annual budget.

3) Recovery of Regional Economy and Promotion of Industries

a) Basic Strategies for the Overall Economy Sector:

- ◆ 3 economic driving thrusts of a) Tourism Revival, b) Guiuan Aquatic (Trade) Center, and c) Modernized Aquatic Production & Catching, and supporting economic

component of d) Sustainable Livelihood Opportunities by Agriculture and Fisheries are identified as Guiuan's 4 thematic components representing economic sub-sectors of tourism, commerce/ business, agriculture, and fishery.

- ◆ Linkages among the thematic components have to be developed intentionally to materialize six ternary industry, which is primary (agriculture and fishery), secondary (Industries including processing, manufacturing, chemical, heavy, light), and tertiary (services) industries, to increase total factor productivity (TFP) of people engaging the primary sector productions and to enhance local economic activities by increasing locally added values.
- ◆ Linkages among driving components are focal to be forged. The linking activities involve ones such as creation of local unique a) delicacies using quality aquatic products, b) agro-fishery products, c) shell crafts, and so on aiming for supporting tourism promotion and marketing to the outside economies including national and international markets. Livelihood oriented activities like mat and basket weaving could be a linkage activity among the 4 thematic components.
- ◆ People's participation is the key for the enhanced linkage.

b) Tourism:

The following strategies will be pursued in order to revive tourism in the Municipality.

- ◆ Restore the damaged tourism attractions the country's oldest 16th-century church, PAGASA radar station, and the surf spot in Calicoan island with improved signage,
- ◆ Support accommodation and amenity operators for restoring their business activities,
- ◆ Collect, compile, and disseminate tourism related information for tourist promotion, investors marketing,
- ◆ Conduct tourist promotion, and accommodation and amenity operator investment marketing,
- ◆ Identify/ create new tourism attractions such as Climate Change and Disaster Science Museum at PAGASA Radar Station,
- ◆ Establish, motivate, and train local people and business associations for improvement of tourists' experiences including local product, delicacies, and cuisines development (core for Six ternary Industry Activities), and
- ◆ Improve accessibility in step-by-step manner from ensuring rehabilitation and improvement of road accesses and appealing bus operators for upgrading of vehicle

quality and frequency, to appealing tour/ air operators for flight service provisions starting from chartered flights.

c) Trade/ Commerce:

The following strategies will be pursued in order to formulate a trading center for the aquatic products of Guiuan and surroundings connecting to regional and national markets

- ◆ Provide value-adding opportunities by establishing the Guiuan Aquatic (Trade) Center with modernized fish port for accommodating all the transaction business activities regarding the fishery and agriculture based products in integrated manner,
- ◆ Enhance local trading capabilities by organizing stakeholders and by providing skills training and information support in conducting business by utilizing the Center,
- ◆ Stimulate local entrepreneurship by visualizing business opportunities to organized local people and entities by the Center's activities and by provision of business information and skills trainings, and
- ◆ Establish orderly trading transactions in Guiuan.

d) Agriculture:

Basic Policy for Agriculture:

- ◆ Integrated farming (coco-base mix farming)
- ◆ Diversification of coconut varieties
- ◆ Storm resistant coco farm
- ◆ New livelihood
- ◆ Agro-industry (Calamancy juice, Dairy processing, Charcoal briquetting), involving women's groups to revitalize the local economy

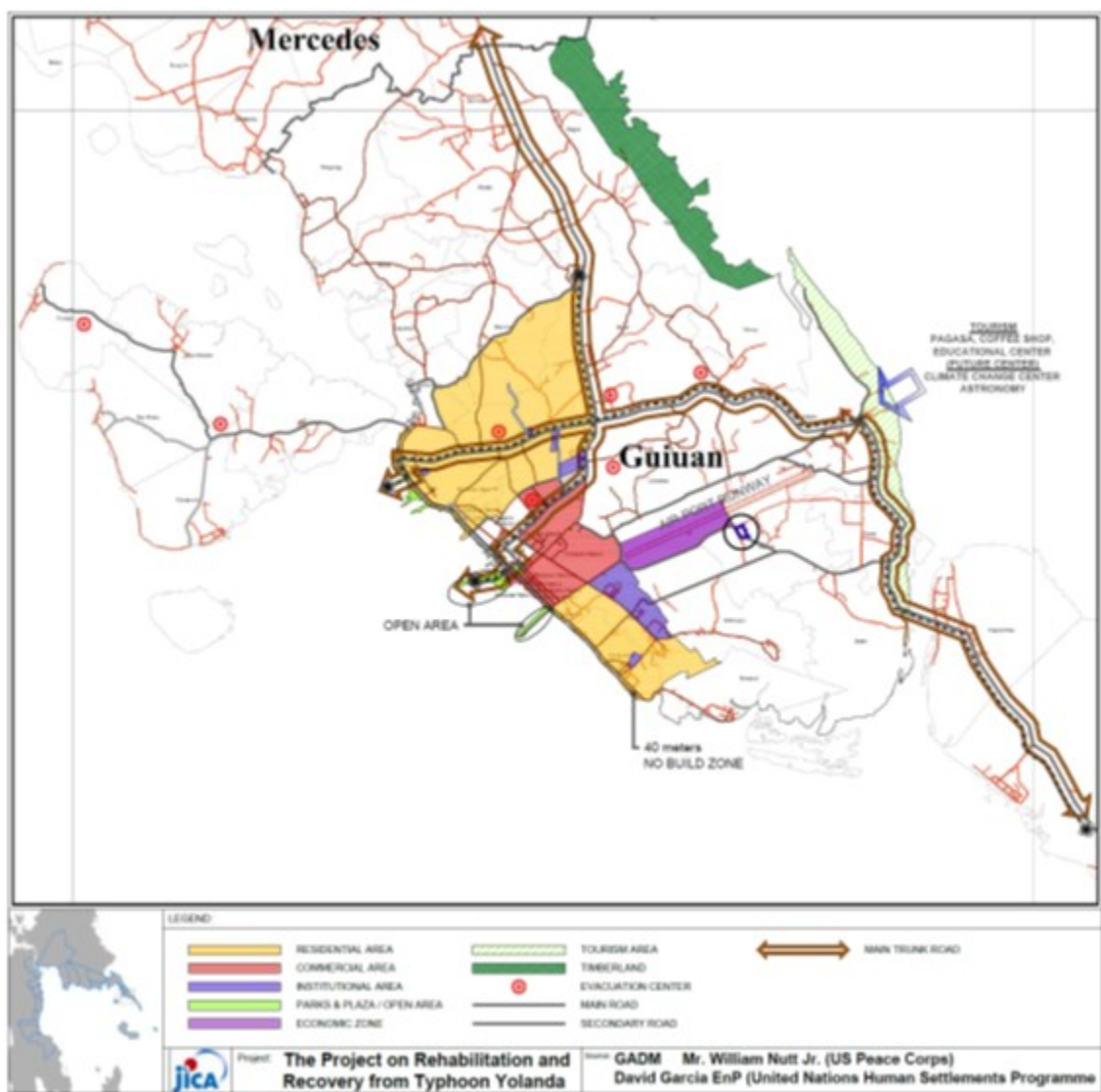
e) Fishery:

Basic strategies to achieve the goals for fishery are as follows:

- ◆ Environmentally-sound aquaculture
 - Upgrade/enhance the technology on submerged lapu-lapu cage, resilient to typhoon and addresses the issue on use of compressor.
 - Switch from wild fingerlings to artificial fingerlings.
 - Switch from natural feed to artificial feed.

- ◆ Sustainable tuna fisheries
 - Strengthen enforcement of fishery laws
 - Provision of commercial fishing boats for offshore fishing and payaos to reduce fishing effort in coastal areas
 - Integrate fish Landing storage and processing facilities
- ◆ Market Development (for Grouper)
 - Value Chain Analysis
 - Market Analysis
 - Establish Product and Process Standards

(4) Recovery and Reconstruction Map (Structural Measures/ Land Use)



Source: JICA Study Team

Figure 7.6-10 Land use map for Poblacion of Guiuan city proposed by CLUP

Chapter 8 Outcome of the JICA Project based on JICA Forum

8.1 General

The above comprehensive planning approach for five LGUs had been done until September in 2014. The results of the five LGUs were presented by the LGU officials such as responsible planning officers in the JICA Seminar held in November 17, 2014. The most of the presentation contents by the LGUs were a kind of challenges which they had not experienced or tested by themselves.

Just two weeks later the JICA Seminar, the super typhoon Ruby approached the five LGUs territory. Because the typhoon Ruby was reported as a super typhoon by media, and significant storm surge occurrence was forecasted by the GOP for some coastal areas. The five LGUs responded to the typhoon Ruby considering the JICA Seminar presentation. As a result, early evacuation was successful in the five LGUs as well as other remaining LGUs in the target area.

In addition, the LGUs made substantial progress on social sector and economic sector after September 2014 by their own initiatives.

The JICA Study Team analyzed the LGUs response to typhoon Ruby and the progress of social and economic sectors in January 2015 and summarized the lessons learnt. At the beginning of March when was the marking of 1st year of the JICA Study, the JICA Study Team organized the 2 days forums in order to share the output of the Study and the outcomes by the five LGUs inviting representatives from relevant central governments. The Part 3 of Main Report Volume 1 describes the activities from October 2014 to March 2015 as explained in the above.

8.2 Planning Status in 5 LGUs as Model Area

LGU(s) have been mandated by some guidelines to consider the hazard assessment mainstreaming climate change in various planning process such as CLUP after Typhoon Yolanda. At the same time, most of the LGUs are facing the end of the period of present local plans such as CLUP. In parallel to the above, the JICA Study Team proposed some fine tuning of the existing local plans by September 2014 based on the hazard map interpretation in the course of technical support for planning in the model areas.

Table 8.2-1 Status of Local Plan in Model Areas

LGU	CLUP	CDP	DRRM	Remarks
Tacloban	Validity: 2013-2022 To be updated based on HLURB guidelines after Yolanda		Approved in 2012	UNHABITAT support for CLUP
Palo	Validity: 2001-2010 To be updated based on		Validity:	

	HLURB guidelines after Yolanda		2013-2017	
Tanauan	Validity: 2010-2019 To be updated based on HLURB guidelines after Yolanda	Validity: 2010-2016	Approved by SB	
Basey	Lost (under preparation)	N/A	Lost (under preparation)	
Guiuan	Validity: 2003-2012 To be updated based on HLURB guidelines after Yolanda		Being Approved by SB	UNHABITAT support for CLUP

Source: JICA Study Team

8.3 Response to Typhoon Ruby

8.3.1 Analysis

On the evening of December 6, 2014, the Typhoon Ruby (International name Hagupit) made its 1st landing on Eastern Samar to threaten the Northern and Eastern Samar provinces. Prior to landfall, NDRRMC issued SitRep No.1 Preparedness Measures for Typhoon “Ruby”(Hagupit) on Dec.4 8AM, 2014 and was issued a total 27 times until Dec.19, 2014 as SitRep No.27.

The large-scale typhoon Ruby which landed on Dec.6, 2014 in Eastern Samar was a major typhoon affecting the model areas after the JICA Seminar on Nov. 17, 2014. Thus, the response of the model area to typhoon Ruby was an opportunity to put into practice what they learned, in particular the response to the evacuation in the seminar as well as the workshops.

Based on the interview results, the following analysis was made:

Hazard map was utilized

The five LGUs in all of the model areas utilized the storm surge hazard map to confirm the possible affected areas and the necessary population to evacuate. Tacloban city requested a supplemental hazard map from the JICA team and utilized the map on the barangay level during typhoon Ruby.

In particular, the hazard map was very effective when the LGUs wanted to identify the candidate evacuation centers. Also the hazard map was effective to assess the safety against inundation for the location of evacuation centers proposed by barangays.

The hazard map was used to check the evacuation routes and transportation routes for the evacuees.

In Palo Municipality, the down-scaled evacuation maps from the original JICA hazard map were displayed in barangay halls and on the community level so that people could confirm the evacuation centers, and know where to go.

It was difficult to respond to typhoon Ruby halfway through preparing the evacuation centers

When typhoon Ruby hit the area, all five LGUs were halfway through the process of inspecting, repairing and preparing safety evacuation centers based on the experience of typhoon Yolanda.

Therefore, in the LGUs with plans to make new evacuation centers, although the capacity was estimated in the plan, in reality some evacuation centers were not in a condition to be used.

Thus, it was difficult to verify the capacity and safety of some evacuation centers.

Plus, since the capacity of public evacuation centers is not enough, the utilization of strongly built private facilities has been considered. However, because it was still under consideration at the time of typhoon Ruby, it was difficult to investigate the structural safety such private facilities.

Basically, the evacuee population was more than expected and it was the common understanding that it was difficult to accommodate all of the evacuees in the existing evacuation shelters. In fact, in Palo Municipality the difference in the number of evacuees and the number which could be accommodated was 20,000 people. The planned new provincial hall would accommodate the 20,000 people, however, how to manage the evacuation until the new provincial hall is constructed is a challenge in Palo.

Even Tacloban City has a serious problem on the lack of evacuation centers. The problem of using dangerous evacuation centers still remains, such as the convention center located near the shoreline used in Tacloban City during typhoon Ruby. (The structural safety was confirmed by the city)

In general, due to the substantial shortage of evacuation centers, the LGUs where it is difficult to cover all of the barangays focused on extremely hazardous areas.

Safe evacuation was accomplished, regardless of the lack of evacuation centers. Effort was done to compensate the gaps

According to the result of the questionnaire, although some evacuation centers were still in the process of preparation, all model areas recognized the gap and discussed solutions and responded by considering evacuation routes and transferring evacuees to far places.

Conclusion: Each of the LGUs have accomplished a certain degree of achievement in disaster reduction planning and discussions on evacuation plans

8.3.2 Future Challenges Recognized in the Model Areas as a Result of Typhoon Ruby

(1) Continuous effort to compensate the gap between the capacity of evacuation centers and the evacuee population.

The evacuee population is overwhelming the capacity of evacuation centers and it impossible to receive all the evacuees in evacuation centers near the residential areas and this will not change even in the future.

Therefore the relocation of residents living in the affected areas is needed, especially in areas within the range of 40 meters from the shoreline, and it should also be kept in mind that early evacuation to

remote locations is important.

The pre-event evacuation shall be implemented for those locations which frequently suffer from floods and storm surges by typhoons as target disasters. In the course of the implementation, relocation should be progressed to make people live in safer areas in order to seek zero evacuation, which means people should not live in unsafe areas. In order to do this, it is possible to minimize the anticipated number of evacuees for tsunami hazards which need immediate evacuation.

In the preparation of evacuation centers, it is better to utilize existing facilities or renovate the existing facilities to a multi-purpose facility or multistory facility rather than making a new facility.

The utilization of private facilities is also needed but the structural safety of the facility should be verified. To do this, it is necessary to prepare an inventory for the evacuation center in each barangay and to check the safety against inundation and the safety of the structure.

How to evacuate livestock is one of the problems but human life should be most prioritized.

(2) Challenges in transportation of evacuees

In addition to the capacity of evacuation centers, there are also many challenges in the preparation of transportation for evacuees.

The transportation routes and sequences, and required transportation vehicles differs by the magnitude and route of the typhoon. Thus, it is necessary to do a simulation by each typhoon on how to transfer the evacuees.

Plus, it is necessary to conclude an advance agreement with private sectors (Companies and Individuals) and INGO.

It is necessary to prepare a document on the rules for pick up time, place and route and also to prepare a map indicating that information and to update it on the community and barangay levels.

(3) Challenges in stock and supply of food in evacuation centers

The sooner the early evacuation is finished, the consumption of relief supply will be faster.

Therefore, although preparing enough stock of foods and other supplies with public policy is important, it is also important to promote residents and barangays to prepare enough stock and instruct them to bring their own stock to the evacuation centers.

Evacuation shelters with cooking facilities are also considered.

For the case of a prolonged evacuation and information sharing in the evacuation center, it is necessary to assign a leader in the center in advance.

(4) Challenges in the identification of affected populations and confirmation of residents' safety and ID

It is necessary to spread the introduction of an ID system such as the system in Tacloban City which can identify evacuees and also be effective for the response before and after the hazard.

The introduction of an effective ID identification system is an urgent challenge. ID information is important for disaster response from the beginning to the last, such as the confirmation of safety, distribution of relief goods, transportation of evacuees and transferring evacuees to temporary housing.

(5) Ensuring the reliability of communication of disaster information, emergence warning system and safety confirmation.

Each of the LGUs has a different system of communication and emergence warning system but it is necessary to prepare a manual to integrate the system of the LGUs. (Neighboring LGUs having different systems is a problem.)

It is desirable to share information between LGUs and to introduce the best system for effective communication or emergency warning.

(6) Promoting hazard map and disaster reduction education

Unprecedented disaster might happen often in the future such as what happened with typhoon Seniang. Therefore it is desirable for residents to check the hazardous areas on their own and make a disaster reduction map by themselves.

It is necessary for the residents to make their own evacuation plans on the barangay level.

It is necessary to carry out disaster reduction education not only in schools but also on other occasions to enlighten residents that do not leave their houses during a typhoon because of their custom, and residents not interested in evacuation drills.

It is necessary to carry out disaster reduction education and training not only in education sites, homes or the office level but also on a LGU, provincial government, or central government level such as making manuals and giving instructions about the drills.

(7) Human resource development in LGU for disaster reduction measures and risk management

Planning an evacuation plan by utilizing hazard maps has been done by working with LGUs, but it is necessary to improve the current lack in the number and capacity of human resources for disaster reduction measures and risk management.

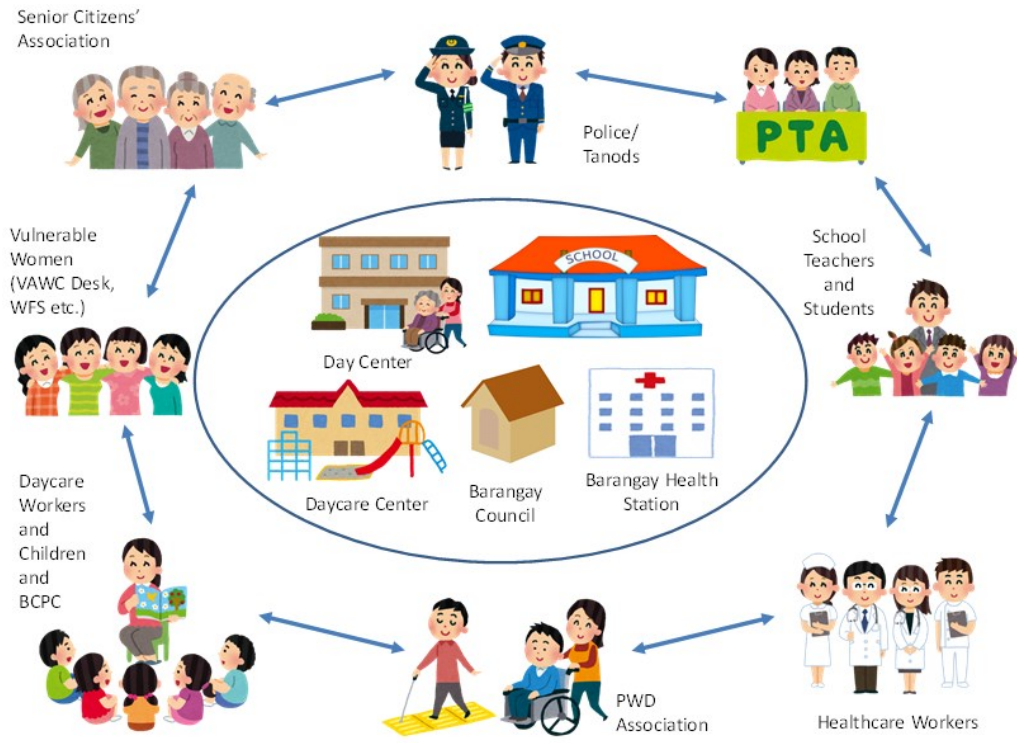
Periodical improvement on staffing, leaders, training and in-house coordination is required.

(8) Strengthening cooperation between the social sector and schools as an information desk of disaster reduction

Cooperation with various stakeholders is essential, such as cooperation with schools as evacuation centers, cooperation with the school, home and the community to implement disaster reduction education, and cooperation with hospitals and welfare facilities to ensure that first aid treatment, emergency transportation and evacuation of support is provided to residents when necessary.

8.4 Progress of Social Sector

In general, while different levels of progress are observed among the five LGUs, a certain degree of recovery and reconstruction has been achieved following the road maps agreed among the respective social sectors, namely social welfare, health, education and solid waste management at JICA workshops in September 2014. In particular, the social sector in Palo, Tacloban and Tanauan has continued to receive appropriate donor support, facilitating the much-needed recovery of social services. Some of the assistance brought about new initiatives following the principle of “Build Back Better”. These include the building capacity of psychosocial support in health, social welfare and educations sectors, the establishment of Child-Friendly Spaces (CFS) and Women-Friendly Spaces (WFS) as venues to protect and empower vulnerable women and children, the integration of DRRM in school curricula and the formulation of Health Emergency Management Plans. Furthermore, tapping into the intensified donor support after Yolanda, some of the development efforts inactive or slow prior to the disaster have been revitalized to improve the basic social services.



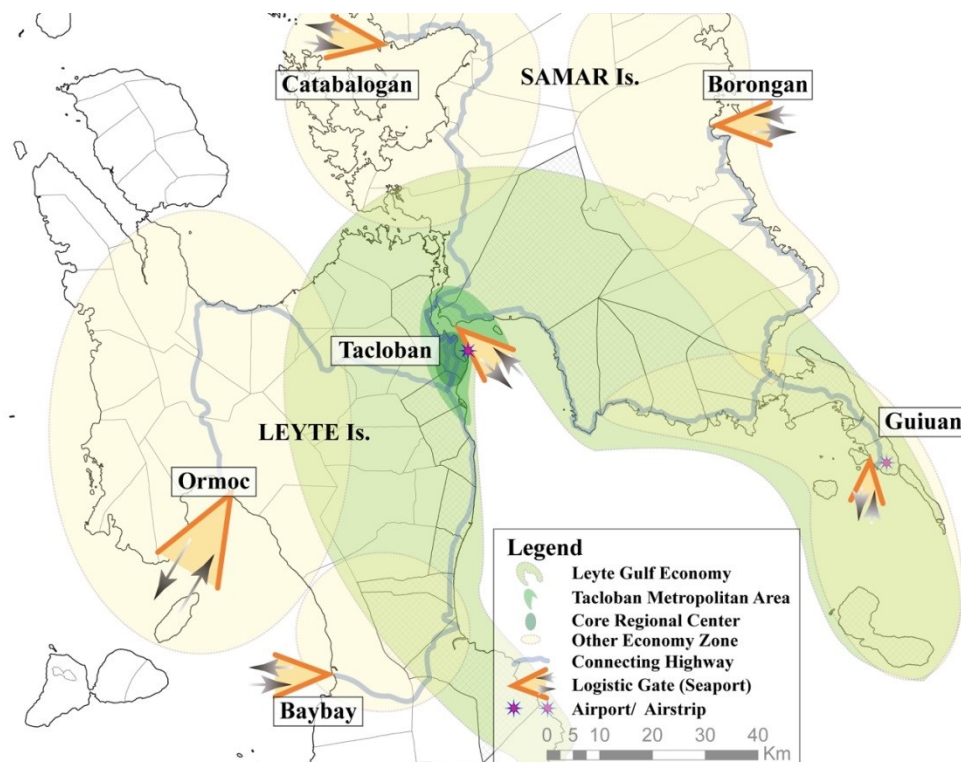
Source: JICA Study Team

Figure 8.4-1 Barangay Actors to Rebuild a Disaster-resilient and Inclusive Community

8.5 Progress of Economic Sector

As one year passed from the time of the incident, efforts for re-development of the economy sector became focal and conspicuous while emergency relief type activities have significantly decreased. People have become aware of the importance of the re-development/re-structuring of the regional economy for pursuing further progress to the recovery as well as enhanced resilience against disaster impacts.

The Leyte Gulf Area where Yolanda hit most seriously among the affected areas has a potential of formulating a united economy area considering the geographic and transport system development conditions.



Source: JICA Study Team

Figure 8.5-1 Economy Cluster and Possible Leyte Gulf Area Economy

Considering the potential for formulating the economic area following directions for the re-development of the area economy have become evident among stakeholders other than the directions for re-planting coconut trees and the modernization of traditional crop farming such as paddies:

- 1) Formulation of a regional market as a base for efficient economy activities,
- 2) Agro/fishery enhancement by crop diversification and value chain fostering,
- 3) Coordinated tourism promotion and development with Tacloban Gateway Town,

- 4) ICT industry promotion utilizing advanced ICT infrastructure covering Tacloban and Palo with the existing two ICT industrial centers, and
- 5) Innovative technology based industry promotion.

8.6 JICA Forum in March 2015

8.6.1 General

A series of JICA Forums were held in Tacloban and Manila on March 2 and March 5, 2015 as the 3rd Seminar at the end of 1st year during the Study. This forum aimed to share the outcome of the JICA Project, introduce the progress of QIPS and report the result of the technical support on the planning for recovery and reconstruction in the model areas.

8.6.2 Tacloban Forum

The Tacloban Forum was held in March 2, 2015 at Leyte Park Resort inviting key officials from eighteen LGUs and regional representatives from line agencies and international NGOs. The forum program was composed of the presentation on the outcome of the JICA Project by the JICA Study Team and LGUs, and the panel discussion.

The outcome in the JICA Project was focused on the following three points:

1. By the preparation of hazard maps and teaching the usage of them, the fine tuning of land use plans and evacuation plans including evacuation centers, evacuation routes and an evacuee registration system, the enlightening of the people's understanding on disaster risk reduction and early response to disaster were enhanced.
2. Capacity development on disaster resilient construction supervision and skill training were progressed. Roofing and welding specialists dispatched from Japan trained the teachers and graduates from TESDA and technical officials of LGUs about the disaster resilient building construction. In addition, educational materials such as a technical handbook and video films were prepared to reflect into the TESDA curriculum.
3. Successful pilot projects for livelihood and income recovery such as food processing, fish culture and charcoal production were completed.

LGUs response to the recent typhoons and tropical storms such as typhoon Ruby and tropical storm Seniang that hit the Leyte Gulf in December 2014. The presentations were made by Tacloban CDRRMO and Guiuan MDRRMO. Both Tacloban and Guiuan strongly expressed the usefulness of the hazard maps and simplified topographical maps in terms of accuracy provided by JICA. During the early response to typhoon Ruby, significant early evacuation was conducted in the course of

leadership of mayors and LGU officials.

The lesson learned in the JICA Project and the Tohoku visit in December 2014 to January 2015 was discussed in the panel discussion among officials from the five LGUs, regional office directors and provincial agriculture offices. The LGU officials, regional office directors and provincial agriculture offices who visited Tohoku quoted their experience in Japan to share with the forum participants about the collaborative DRRM planning activities among the people and the government, community operated evacuation centers, the mobilization of volunteers, oyster aqua culture technology, and sales business promotion as potential examples to introduce in the Philippines.

The conclusion of the panel discussion was summarized as the message to the Manila Forum on March 5, 2015, which representatives from the central governments attended.

Table 8.6-1 Key Messages from the Tacloban Forum on March 2, 2015

1) Key Project Outcome
● Modified land use, enhanced people's awareness to disaster prevention, realized early responses to disasters by use of hazard maps
● Developed human resources for typhoon resilient building
● Secured people's initiatives for the recovery of livelihood
2) Key Lessons Learned
● Build common understanding on the necessity of disaster prevention among LGU officials by use of hazard maps
● Seamless improvement of evacuation plans
● Consolidate livelihood means, secure and expand market
3) Key Messages to strengthen 'build back better'
● Update hazard maps by LGUs for proper disaster prevention: update evacuation centers/routes
● Clarify the prospects of budget disbursement from the central government for approved CRRP
● Ensure appropriate structural measures taken by smooth coordination between the central government and LGUs
● Identification of an organization for the operation and maintenance of hazard maps

Source: JICA Study Team

8.6.3 Manila Forum

The Manila Forum was held on March 5, 2015 at the Intercontinental Hotel inviting key officials from central governments such as DILG, OPARR, NEDA and international NGOs. The forum program was composed of the presentation on the outcome in JICA Project and the result of Tacloban Forum by the JICA Study Team and LGUs, and the panel discussion.

In the panel discussion, the following questions were given by the moderator:

- How to proceed sustainable collaborative activities between LGUs and the central government until the JICA Project terminates.

- How to materialize a bottom up approach; land use and DRRM planning by using hazard maps, human capacity building, recovery of livelihood and sales promotion

In the panel discussion, the following comments were provided by the central government and Tacloban City:

- Identification of safe zones is not an easy task, however, with the help of scientific hazard maps LGUs can conduct it.
- All LGUs should have hazard maps and the capability to translate it to zoning ordinance. Constant capacity building for the planning activities is inevitable.
- Updating of the hazard maps is a kind of burden for LGUs. In particular, the landslide which happened in Dec. 2014 was a new hazard in Tacloban, however the city does not have the capacity to deal with it.
- For DRRM planning and operation, a full time CDRRMO should be assigned. For this issue, a proper DRRMP program is to fund it.
- Zero causality as well as zero evacuation must be achieved.
- Regarding the restoration of the economy in the affected area, even though it takes time, they should know how to strengthen the economy faster.
- Intergovernmental collaboration is important, in particular, the relationship between the Municipalities and Provincial Government should be strengthened. In general, the project/program of recovery and reconstruction are separated into clusters in the central government (OPARR), but it is a little difficult for LGUs to respond and implement.
- Central governments are expected to make standard rules, roles and a DRRM manual for LGUs.

The officials who visited Tohoku, Japan expressed the following comments:

- The camp (shelter) management in Japan is interesting, in particular community involvement in managing evacuation centers with volunteer spirit.
- Recovery and reconstruction cannot happen overnight. Efforts should be done to tackle those issues while it takes a long time.
- Psychosocial aspect of the disaster-affected people is properly cared for.

During the forums, the outcomes in the JICA Project were shared among stakeholders in the Philippines. It is expected that the horizontal development of the experience in the JICA Project by the stakeholders.

One of the most significant outcome of the JICA Project was that TESDA is planning to apply the

revised curriculum in all regional schools and to use the JICA Project hand book in the training. Also TESDA proposed to share the curriculum and the handbooks with other central government organizations.

The GOP expressed sincere desire on the continuation of the JICA Project.

Chapter 9 Recommendations

9.1 General

The Philippines encountered typhoon Yolanda and gained various lessons learned, paying a heavy price. However there are countless issues which remain for the people living in disaster-prone areas like Japan, as the frequent occurrence of serious natural disasters in many countries will happen in the future. It can be pointed out that it is impossible to eliminate the damage by disasters so it is better to focus on disaster prevention and mitigation, which will help the efforts toward reconstruction after disasters.

Just after a disaster happens, when the area loses a lot of things, the actions towards reconstruction starts. The Philippines knows their extent of vulnerability against natural disasters and concentrate on the daily activity of disaster prevention and share the basic policies on reconstruction composed of community activity, enhancement of social welfare and education, and the restoration of local economy contributing to recovery of livelihood resulting in success for the next generations.

At the end of 1st year of the JICA Study, the following key messages were confirmed among all the stakeholders at the JICA Forums in March 2 and 5, 2015:

- Update hazard maps by LGUs for proper disaster prevention: update evacuation centers/routes
- Clarify prospects of budget disbursement from the central government for approved CRRP
- Ensure appropriate structural measures taken by smooth coordination between the central government and LGUs
- Identification of an organization for the operation and maintenance of hazard maps
- Consolidation of livelihood means, securing and expanding markets

The JICA Study Team recognizes the recommendations to be prepared based on the above messages in order to secure the sustainability of the outcome by the JICA Project towards the realization of BBB in the Philippines.

9.2 Recommendations based on Comprehensive Planning Activities

9.2.1 Capacity Development of LGUs for Update hazard maps for proper disaster prevention such as update evacuation centers/routes

As confirmed in the Forums, the proper DRRM planning by each LGU is expected such as updating hazard maps and seamless efforts to update evacuation plans. LGU's DRRM plan is expected to be integrated into CLUP as the mother plan of the LGU.

To do this, capacity development of LGUs is highly necessary as explained below.

(1) Institutional Capacity Development

The governments of cities and municipalities based on the Local Government Code should play major roles on public policies for reconstruction and formulate necessary plans and programs together with local people under the assistance from the central governments.

The improvement of organization, staffing and instruction flow should be necessary in order to work together with local people on a daily basis, revision of local plans, monitoring of work progress and immediate response to emergency.

For example,

- Preparation for disaster prevention in normal time (distribution and education of hazard maps, providing evacuation centers, evacuation routes)
- Planning of local plans (CLUP, CDP, DRRM) based on scientific hazard assessment
- Monitoring of Progress of Planning, Evaluation of Programs and Governance
- Improvement of organization, staffing and instruction flow

(2) Capacity Building of DRRM in Each LGU

LGUs lack in human resources for disaster measures including recovery and reconstruction and risk management. Especially in small scale LGUs, staff with the capacity and technical knowledge of disasters is quite limited. This is one of the reasons why preparation before a disaster and emergence response after the disaster are not always effectively implemented.

Therefore, in a middle or long term time frame, it is necessary to foster human resources with capacity and technical knowledge about disaster reduction and risk management.

Thus, in order to foster officers that can take charge in disaster reduction and risk management on a provincial level, an academic education of disaster reduction and risk management against officers in the mainstay should be considered. Dispatching LGU officials to universities and programs of collaboration with universities are appropriate options.

By receiving education, it is possible to construct a network between the officers in charge of disaster reduction and even in a hazard that effects a broad area like typhoon Yolanda did, it is possible for several LGUs to cooperate and arrange effectively for recovery and reconstruction. Plus, it will be easy to construct a wide range risk management system in the future.

(3) Importance of Community

There has to be a broader and a more people-centered preventive approach to disaster risk reduction practices need to be multi-hazard and multi-sectoral based, inclusive and accessible in order to be efficient and effective.

LDRRMP at the barangay level should be divided into the plan during normal times and the plan during the disasters, in which the organizational arrangement and the procedure of necessary

actions are specified. During normal times, prevention measures, education, training, and review of the actions should be done in order to enhance the capacity of response to the disaster, and deepening the relationship with governmental organizations and NGOs and the publicity actions should proceed. During a disaster, the necessary actions by whom, of what, to what extent and how should be specified for the phase of preparedness, early response, emergency response, recovery and reconstruction.

In addition, the check of emergency storage such as food, the assessment of safety of evacuation center, and the promotion of disaster education and training should proceed.

(4) Inheritance of the Experience of Disaster

Disaster might happen again soon or may happen again after a long time, after the experience is forgotten.

In countries and areas like Japan where natural disasters happen every year, it is often that disaster reduction measures which are imprinted in the lifestyle and festival, and the system is based on the past experience of disaster.

However, because of regeneration and inflow of residents from other areas, disaster experiences in the community are easily forgotten.

In order to never suffer miserable disaster, it is necessary to root the experience to the society as a culture in the lifestyle of residents and companies and into the administrative sector. It is important to think about disasters in a comprehensive way and mature “disaster culture” as an inheritance to the next generation.. This should not be done only by the local community but also on the country level.

For example;

Enlightenment of disaster reduction education and inheritance of disaster memorials (release, preserve and arrange disaster records, preparation and preserving of memorial facilities especially for things which needs a vast amount of money to conserve and preserve, support from the country is needed, the idea of a disaster museum on a country level)

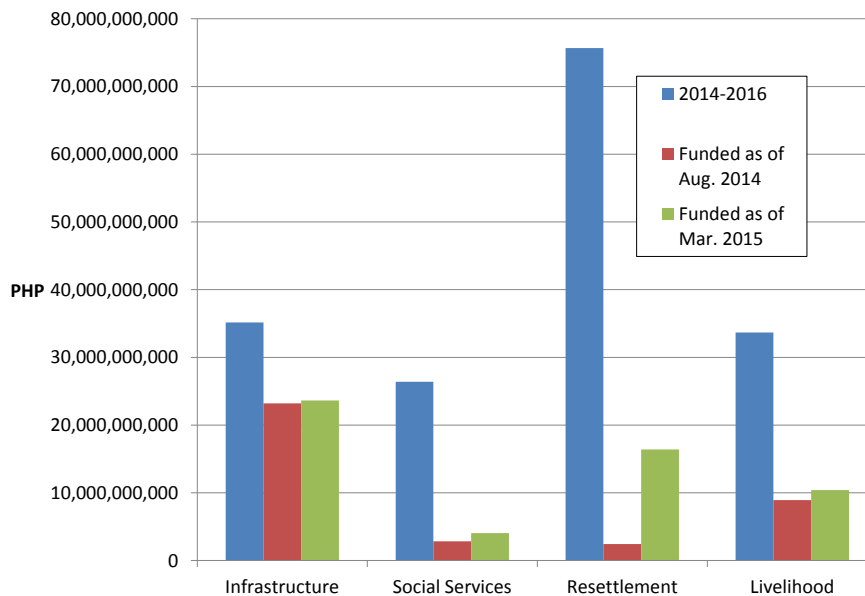
Preservation and verification of disaster response and creation and updating of manuals as an organization.

Introduction of a disaster reduction point of view in ordinary plans and systems such as the use of land, social welfare and education.

9.2.2 Clarify Prospects of Budget Implementation from Central Government for Approved CRRP

OPARR’s information management system, the electronic Management Platform: Accountability and Transparency Hub for Yolanda or eMPATHY, was already public. As for the eMPATHY in March 2015, the funded amount in the CRRP is illustrated in Figure 9.2-1 by cluster. While the

OPARR has done the best efforts to assure the accountability and transparency in terms of the progress of recovery and reconstruction, further rapid implementation is expected in the clusters in particular, the social services, resettlement and livelihood.



Source: JICA Study Team prepared from CRRP, eMPATHY in March 2015

Figure 9.2-1 Funded Amount of CRRP Project

9.2.3 Ensure Appropriate Structural Measures Taken by Smooth Coordination between Central Government and LGUs

The GOP decided to implement the project of road heightening and tide embankment from Tacloban to Tanauan which was proposed in the JICA Study. In the course of the planning, design and implementation of the project, DPWH Region VIII office is expected to take a lead role and the Project Implementation shall be supported by the JICA Study Team. The project can be regarded as a pilot project in the Philippines in terms of the introduction of a structural measure for the area devastated by the storm surge in order to build safer cities.

The project is expected to be immediately implemented by DPWH and the experience in the course of the implementation be expanded in other storm surge prone areas in the Philippines.

With regard to the above, in April 2015 the memorandum order 79, providing for the institutional mechanism for the monitoring and of rehabilitation and recovery programs, projects, and activities (PPAs) for Yolanda-affected areas, was signed by the President. Section 1 of MO 79 states that the NEDA Director-General shall assume the coordination, monitoring, and evaluation of all disaster-related PPAs and ensure full implementation of the said MO.

9.2.4 Identification of an organization for the operation and maintenance of hazard maps

Hazard maps, in general, are expected to be updated and modified if necessary, periodically based

on the latest disaster event happening and substantial physical change in area. Hazard maps are prepared based on some specific conditions in terms of the hazard occurrence. After a hazard map is disseminated, if a significantly different hazard occurs in terms of its scale and aerial patterns, the current hazard map can be translated carefully and be considered for an update and modification. Also, the topographical map as the supportive background information of the hazard maps are expected to be periodically updated because the physical conditions such as land use, road network, flood control facility, etc. are changing. The JICA hazard maps are not an exception for this issue and can become outdated.

Regarding the preparation and dissemination of hazard maps in the Philippines, a Joint Memorandum Circular (DENR-DILG-DND-DPWH-DOST) was issued in late 2014¹. According to this, DOST is expected to prepare and make available the hazard maps for the 171 cities and municipalities affected by Yolanda, involving the storm surge and other natural disasters at a scale of 1:10,000 or better. DOST is supposed to provide DENR-NAMRIA with all hazard maps for integration into a multi-hazard map and inclusion in the Geoportal. The Geoportal will be managed by DENR-NAMRIA in coordination with DILG, DPWH, DND (OCD) and DOST for access of all concerned. The concept of the JMC 2014 is illustrated in Figure 9.2-2.

In this line, at the central government level, hazard maps in the area affected by Yolanda is supposed to be basically prepared by DOST and managed by DENR-NAMRIA.

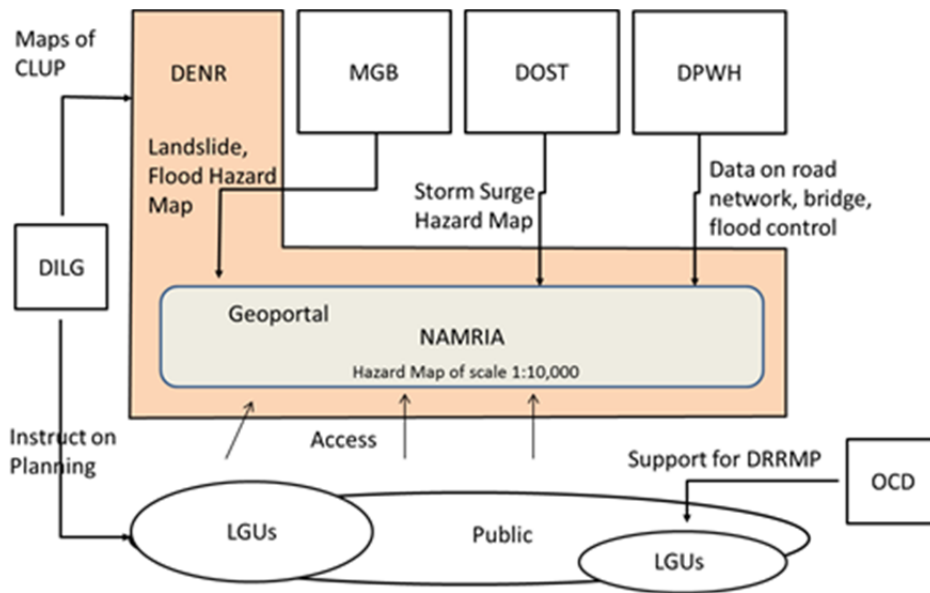
As the JICA Study Team worked with LGUs in the concerned area affected by Yolanda, the users of the hazard maps are communities, LGU officials and the regional office of line agencies and international communities. Their concerns are how to identify the unsafe and safe zones, how to prepare evacuation plans, and how to enlighten the people's awareness for DRRM. In this sense, such local information must be reflected into the updating work of hazard maps by the central government. However, there are some gaps in terms of the capacity of the central government in order to grasp the local conditions for each LGU as the JICA Study Team conducted its Study in 2014.

The challenging issues are how to collaborate among the LGUs and the central governments in particular DILG, OCD and DOST in terms of reflecting local conditions into hazard maps.

NEDA Region VIII suggests the involvement of Visayas State University (VSU) to carter to this process. The VSU is the Climate Change Research Center of Eastern Visayas.

Scientific hazard maps can be prepared by DOST for each LGU, as already materialized in project NOAH. Each LGU should receive the hazard maps and have the capability to understand and interpret their own hazard extent and make necessary measures by themselves.

¹ Joint Memorandum Circular (DENR-DILG-DND-DPWH-DOST) , Adoption on hazard zone classification in areas affected by typhoon Yolanda (Haiyan) and providing the guidelines for activities, 2014



Source: JICA Study Team

Figure 1.1-1 Concept for Hazard Map Management in JMC 2014.

1.1 Recommendations based on QIPs Implementation

The recommendations based on the implementation of QIPs are the following items (refer to Main Report Volume 3 Chapter 4.2). The recommendations are categorized into mainly 2 items such as “Regenerating Livelihood” and “Construction Work”.

- (1) Regenerating Livelihood
 - 1) Working with the People in Emergency Livelihood Support Projects
 - 2) Flexible Implementation
 - 3) Holistic approach to restore aquaculture production
 - 4) Follow-up supports
 - 5) Strengthening of organizational capacities for group activities
 - 6) Developing ownership for the activities through obtaining cash benefit
 - 7) Necessity of technical support in restarting agricultural activities
 - 8) Continuous Support for the Activities that have not achieved objects
- (2) Construction Work
 - 1) Payment Condition
 - 2) Technical Transfer to LGU Engineers

- 3) Documentation skill of the contractor
- 4) Welding Skills
- 5) Concreting Management
- 6) Support Installation
- 7) Installation of Scaffolding
- 8) Quality Identification of Material
- 9) Alternative for important works
- 10) Fixing of column formwork
- 11) Site Inspection
- 12) Safety Management

Chapter 10 The Way Forward

In the JICA Forums in March 2015, one of the most frequently stressed by the LGUs and the central government was that they were facing the challenge how to assure the sustainability of the collaborative works between the Philippine side and JICA. It was widely recognized that such assuring sustainability definitely contribute to the realization of Build Back Better after typhoon Yolanda.

In this line, it is expected that the JICA Project should continue further focusing on the following.

- Build common understandings on necessity of disaster prevention among LGU officials by use of hazard maps
- Seamless improvement of evacuation plan
- Consolidate livelihood means, secure and expand market

The line agencies of central government as well as LGUs are expected to continue and develop the outcomes in the course of the efforts for recovery and reconstruction toward Build Back Better.