



Executive Summary

Post-Disaster Needs Assessment of TY Yolanda Affected Areas



I. The Event

Typhoon Yolanda (international name: Haiyan) was the 24th Tropical Cyclone that entered the Philippine Area of Responsibility (PAR) in 2013. It entered the PAR as Typhoon and as the 9th Tropical Cyclone that made landfall. Typhoon Yolanda made its first landfall over Guiuan, Eastern Samar with maximum sustained winds of 235 kph near the center and gustiness of 275 kph. The strong winds damaged houses, roads, bridges, school buildings, government and private facilities and other structures. In particular, the Central Visayas (Regions IV-B, VI, VII and VIII) experienced the havoc of the Typhoon. As of 14 March 2014, a total of 6,268 fatalities, 28,698 injured and 1,061 missing were reported. It is the deadliest Tropical Cyclone that hit the Philippines followed by Tropical Storm Uring in 1991 (international name: Thelma) that left 5,101 fatalities.

Typhoon Yolanda affected 3,424,593 families or 16,078,181 individuals in 12,139 barangays, 44 provinces, 591 municipalities, 57 cities of Regions IV-A, IV-B, V, VI, VII, VIII, X, XI and CARAGA and displaced 890,895 families or 4,095,280 person.

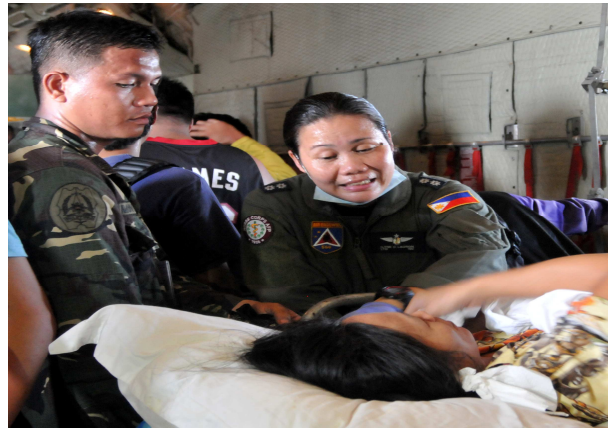
This visit of Yolanda was not a new experience, even though it may have been distressing. Over the last few years, the Philippines has incurred a considerable burden as severe weather events such as Ondoy (Ketsana), Pepeng (Parma), Sendong (Washi), and Pablo (Bopha) affected a widespread area across the archipelago. These events affected more than 10 million people, claimed around 3,000 lives and resulted in damage and losses of around US\$6 billion, based on post-disaster assessments undertaken by the Government and its development partners.

Government's **RESPONSE**

The Government's response to Yolanda began before the Typhoon made landfall. Two days prior to Typhoon Yolanda's landfall, the NDRRMC held a meeting at the Office of Civil Defense as regards to government preparations and to ensure that the public was adequately alerted of the situation. Further, all Local Chief Executives in the Bicol Region, Eastern and Western Visayas, and MIMAROPA were directed to activate their Local Disaster Risk Reduction and Management Councils, and their 24-hour disaster monitoring systems. DILG Regional and Provincial Directors were also directed to announce warnings and alerts. Also, the Department of Health placed all facilities on Code Blue in preparation for Yolanda. The DOH prepositioned PhP 350,885,321 worth of assorted drugs, medicines, medical supplies, cot beds, and other essential material, and evacuation centres were identified. Pre-emptive evacuations in varying scales were undertaken.

In total, before the storm struck, the DSWD had prepositioned PhP 178.383 million worth of goods. This is equivalent to 89,260 Food Packs. A day before the storm, AFP troops in Eastern Visayas, numbering approximately 4,500 personnel from various units in Leyte and Samar, were placed on red alert. 8 choppers were already on standby at the Mactan airbase, along with the organic vehicles of the units mentioned. Across the Provinces, policemen, firemen, ambulances, rubber boats and trucks were placed on standby.

Despite these preparatory efforts, the typhoon struck hard on the 8th of November leaving in its wake some PhP89.5 billion in damages. In the social impact assessment undertaken as part of the PDNA, it was noted that the Philippines is the only country where the number of human deaths in natural disasters had increased in recent years. It was further noted that this was indeed an alarming trend, which must evoke serious concern and be responded through a national effort to reduce the level of mortality. Among other initiatives to achieve reduced deaths as a result of disasters,



greater investment in early warning systems and capacities, capacity-building in dissemination of early warnings, and considerable improvement in emergency preparedness were identified.

With regard to relief, the hospitals served 34,522 patients in the affected areas. Some 278 health teams were deployed across the communities struck by Yolanda. Apart from other services, the Department of Health constructed or rehabilitated 1,747 latrines to prevent the spread of disease, and distributed 206,051 hygiene kits and 199,278 water kits. Over 1,000 individuals were provided with counselling, 6,924 underwent psychological first aid, and 12,875 was accorded psychosocial processing by our DOH personnel.

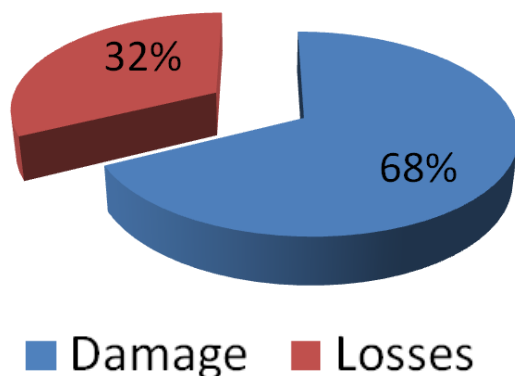
RESPONSE

of International Partners

As of 17 March 2014, International partners pledged almost 24.6 billion pesos as relief to the Philippines, with 3 billion in cash and 21.6 billion in non-cash assets and some of these have been acknowledged as received by other entities such as NGOs. The national government has received the equivalent of PhP 43,203,308.23 (USD 13,337,478.00) both in cash and in non-cash assets such as medical supplies and relief goods. A total of 57 countries have assisted the Philippine government; of which, 29 have military contingents.

II. POST-DISASTER Needs Assessment

The results of the PDNA suggests that the total effect of the event amounts to approximately PhP 132.4 billion pesos with damage accounting for 68% and losses 32%.



Damage and Losses Assessment

Typhoon Yolanda resulted to a total damage of **PhP 89,598,068,634.88** and estimated amount of losses of **PhP. 42,759,630,025.90**. The amount of damage and losses per sector are as follows:



Infrastructure

Total estimated damage to infrastructure is **PhP9,584,596,305.69** and estimated amount of losses is **PhP2,614,192,306.24**. This sector accounted for all structures such as roads,

Table 1. Summary of Damage and Losses (Per Region)

	Damage	Losses
Region IV-B		
1. Northern Palawan	703,885,673.39	351,870,736.28
Sub-total	703,885,673.39	351,870,736.28
Region VI		
1. Aklan	2,034,729,909.50	846,679,279.25
2. Antique	1,580,873,094.88	256,854,659.01
3. Capiz	5,608,181,880.85	1,584,681,826.28
4. Iloilo	5,394,980,264.96	1,664,802,862.83
Sub-total	14,618,765,150.19	4,353,018,627.37
Region VII		
1. Northern Cebu	5,677,349,596.71	2,575,046,742.70
Sub-total	5,677,349,596.71	2,575,046,742.70
Region VIII		
1. Biliran	331,603,497.64	238,316,182.00
2. Leyte	50,911,426,069.12	24,061,941,842.54
2.1. Tacloban City	6,948,485,783.18	5,308,802,499.25
3. Southern Leyte	242,486,132.31	118,495,920.60
4. Eastern Samar	5,387,757,077.93	5,333,178,535.87
5. Samar	4,776,309,654.41	418,958,939.29
Sub-total	68,598,068,214.59	35,479,693,919.55
TOTAL	89,598,068,634.88	42,759,630,025.90
1 US\$ = 44.67 (BSP)	2,005,777,224.87	957,233,714.48

bridges, irrigation facilities, flood control/ seawall and all infrastructures related to education, power, water facility, telecommunication and government.

Productive

Total estimated damage to productive sector is **PhP21,833,622,975.09** and estimated amount of losses is **PhP29,530,908,491.52**. This sector covers Agriculture, Tourism, Mining, Environment and Industry, Trade and Services.

Social

Total estimated damage to social sector is **PhP55,110,825,740.69** and estimated amount of losses is **PhP6,219,786,649.55**. This sector focuses on the frontline services of the government towards society/community. This includes three (3) sub-sectors: housing and settlement, health and education.

Cross-Sectoral

Total estimated damage to social sector is **PhP3,069,023,613.41** and estimated amount of losses is **PhP4,394,742,578.59**. This includes four (4) sub-sectors: Government and DRRM, Macroeconomics, Social Impact Assessment and Environment.

Table 2. Summary of Damage (Per Sector)

	INFRA	PRODUCTIVE	SOCIAL	CROSS SECTORAL	OVERALL TOTAL
Region IV-B					
1. Northern Palawan	346,806,705.39	130,245,935.20	179,710,000.00	47,123,032.80	703,885,673.39
Sub-total	346,806,705.39	130,245,935.20	179,710,000.00	47,123,032.80	703,885,673.39
Region VI					
1. Aklan	217,070,656.00	414,291,968.50	1,389,543,450.00	13,823,835.00	2,034,729,909.50
2. Antique	143,356,679.49	179,483,225.39	1,238,019,905.00	20,013,285.00	1,580,873,094.88
3. Capiz	1,747,469,887.25	171,818,132.60	3,634,323,654.00	54,570,207.00	5,608,181,880.85
4. Iloilo	1,213,812,761.16	600,445,460.60	3,547,944,455.00	32,777,588.20	5,394,980,264.96
Sub-total	3,321,709,983.90	1,366,038,787.09	9,809,831,464.00	121,184,915.20	14,618,765,150.19
Region VII					
1. Northern Cebu	917,383,060.92	1,525,402,452.19	3,234,564,083.60	-	5,677,349,596.71
Sub-total	917,383,060.92	1,525,402,452.19	3,234,564,083.60	-	5,677,349,596.71
Region VIII					
1. Biliran	72,732,773.64	172,343,117.00	57,648,847.00	28,878,760.00	331,603,497.64
2. Leyte	1,026,660,945.96	13,116,044,996.45	34,547,363,760.00	2,221,356,366.71	50,911,426,069.12
2.1. Tacloban City	2,474,944,764.90	726,561,170.00	3,386,202,191.25	360,777,657.03	6,948,485,783.18
3. Southern Leyte	31,486,295.64	41,704,170.00	119,040,000.00	50,255,666.67	242,486,132.31
4. Eastern Samar	702,625,045.53	1,504,206,113.56	3,091,478,703.84	89,447,215.00	5,387,757,077.93
5. Samar	690,246,729.81	3,251,076,233.60	684,986,691.00	150,000,000.00	4,776,309,654.41
Sub-total	4,998,696,555.48	18,811,935,800.61	41,886,720,193.09	2,900,715,665.41	68,598,068,214.59
TOTAL	9,584,596,305.69	21,833,622,975.09	55,110,825,740.69	3,069,023,613.41	89,598,068,634.88
1 US\$ = 44.67 (BSP)	214,564,502.03	488,775,978.85	1,233,732,387.30	68,704,356.69	2,005,777,224.87

Table 3. Summary of Losses (Per Sector)

	INFRA	PRODUCTIVE	SOCIAL	CROSS SECTORAL	OVERALL TOTAL
Region IV-B					
1. Northern Palawan	60,050,000.00	277,536,471.00	5,914,265.28	8,370,000.00	351,870,736.28
Sub-total	60,050,000.00	277,536,471.00	5,914,265.28	8,370,000.00	351,870,736.28
Region VI					
1. Aklan	37,117,382.00	782,408,232.25	27,153,665.00	-	846,679,279.25
2. Antique	15,243,289.45	224,575,194.56	17,036,175.00	-	256,854,659.01
3. Capiz	257,773,733.40	1,261,174,602.88	65,733,490.00	-	1,584,681,826.28
4. Iloilo	74,492,794.20	1,524,641,598.63	65,668,470.00	-	1,664,802,862.83
Sub-total	384,627,199.05	3,792,799,628.32	175,591,800.00	-	4,353,018,627.37
Region VII					
1. Northern Cebu	120,261,410.13	2,454,535,332.57	250,000.00	-	2,575,046,742.70
Sub-total	120,261,410.13	2,454,535,332.57	250,000.00	-	2,575,046,742.70
Region VIII					
1. Biliran	2,315,000.00	234,532,882.00	1,398,300.00	70,000.00	238,316,182.00
2. Leyte	643,434,759.27	17,392,302,081.50	2,578,855,539.00	3,447,349,462.77	24,061,941,842.54
2.1. Tacloban City	1,313,605,782.38	3,427,868,300.00	310,506,501.05	256,821,915.82	5,308,802,499.25
3. Southern Leyte	18,381,920.60	94,744,000.00	-	5,370,000.00	118,495,920.60
4. Eastern Samar	44,983,315.81	1,545,184,195.84	3,114,249,824.22	628,761,200.00	5,333,058,535.87
5. Samar	26,532,919.00	311,405,600.29	33,020,420.00	48,000,000.00	418,958,939.29
Sub-total	2,049,253,697.06	23,006,037,059.63	6,038,030,584.27	4,386,372,578.59	35,479,573,919.55
TOTAL	2,614,192,306.24	29,530,908,491.52	6,219,786,649.55	4,394,742,578.59	42,759,510,025.90
1 US\$ = 44.67 (BSP)	58,522,326.09	661,090,407.24	139,238,563.90	98,382,417.25	957,231,028.12

RECONSTRUCTION and Recovery Needs

A total amount of **PhP 104,644,865,194.41 (USD 2,342,620,666.99)** is needed for the reconstruction and recovery of the four sectors;

Infrastructure – **PhP28,201,490,865.66**

Productive – **PhP24,431,165,763.52**

Social – **PhP42,981,516,687.33**

Cross-Sectoral – **PhP9,030,691,877.90**



Table 4. Summary of Reconstruction and Recovery Needs

	INFRA	PRODUCTIVE	SOCIAL	CROSS SECTORAL	OVERALL TOTAL
Region IV-B					
1. Northern Palawan	518,067,029.75	243,175,753.00	285,667,000.00	72,010,960.00	1,118,920,742.75
Sub-total	518,067,029.75	243,175,753.00	285,667,000.00	72,010,960.00	1,118,920,742.75
1. Aklan	1,155,531,201.00	932,092,470.33	3,276,364,209.00	6,894,577.00	5,370,882,457.33
2. Antique	661,283,414.34	222,419,719.65	1,464,012,453.00	6,362,040.00	2,354,077,626.99
3. Capiz	3,585,507,780.25	1,401,353,542.79	8,153,202,318.00	34,952,160.00	13,175,015,801.04
4. Iloilo	3,481,578,282.93	1,711,533,891.95	6,696,715,517.00	23,857,161.00	11,913,684,852.88
Sub-total	8,883,900,678.52	4,267,399,624.72	19,590,294,497.00	72,065,938.00	32,813,660,738.24
1. Northern Cebu	1,872,621,746.50	2,205,536,070.80	3,935,422,836.88	788,352,066.16	8,801,932,720.34
Sub-total	1,872,621,746.50	2,205,536,070.80	3,935,422,836.88	788,352,066.16	8,801,932,720.34
1. Biliran	824,045,308.82	401,393,599.00	154,007,790.00	28,948,760.00	1,408,395,457.82
2. Leyte	3,556,491,773.11	13,671,372,044.00	9,002,958,165.00	3,930,897,130.69	30,161,719,112.80
2.1. Tacloban City	8,814,904,092.74	223,979,926.00	3,445,080,055.54	503,224,711.55	12,987,188,785.83
3. Southern Leyte	91,381,403.19	38,996,970.00	907,436,000.00	46,412,000.00	1,084,226,373.19
4. Eastern Samar	2,645,494,200.28	1,630,109,551.00	3,740,255,444.61	3,130,704,311.50	11,146,563,507.39
5. Samar	994,584,632.75	1,749,202,225.00	1,920,394,898.30	458,076,000.00	5,122,257,756.05
Sub-total	16,926,901,410.89	17,715,054,315.00	19,170,132,353.45	8,098,262,913.74	61,910,350,993.08
TOTAL	28,201,490,865.66	24,431,165,763.52	42,981,516,687.33	9,030,691,877.90	104,644,865,194.41
1 US\$ = 44.67 (BSP)	631,329,547.03	546,925,582.35	962,200,955.62	202,164,582.00	2,342,620,666.99

Social IMPACT Assessment

A social impact assessment, called Human Recovery Needs Assessment (HRNA), was undertaken as part of the PDNA and it noted that an estimated 14.12 million people were reported affected in the five regions, out of which 4.8 million were reported as already living under the poverty threshold.

As of 14 March 2014, the death total in typhoon Yolanda of **6,268** was noted as resulting in a comparatively high level of mortality. As expected in a situation of such magnitude, the level of psycho-social trauma was noted as being very high in the affected areas. Psycho-social distresses, including fear and changes in behaviour such as sadness, crying, and other exaggerated emotions in the affected areas of Iloilo, Leyte, and Eastern Samar, have been noted. Roughly 40 percent of households report feeling insecure. Children and young people remain profoundly affected by what they experience during the typhoon. Psycho-social support thus, has emerged as an important priority.

The HRNA noted that an increase in national poverty incidence, may occur as a result of typhoon Yolanda. Eastern Visayas, which is a predominantly rural area, would be expected to be responsible for the most significant contribution to such an increase. In the aftermath of Typhoon Yolanda, some 5.6 million workers, 40% of them being female, in the four regions were estimated to have had their livelihoods disrupted, temporarily or permanently. Among the four regions, Region VII is estimated to have both the largest number of workers and largest number of vulnerable workers affected. Farmers, fisherfolk, and informal sector workers have been most heavily affected. The HRNA notes that although the coastal areas were significantly affected, the impact was severe in some of the inland communities as well. The report further notes that more



than half (51 percent) of fisherfolk and 29 percent of farming households reported that their livelihoods were completely destroyed. In addition, more than half of those engaged in wholesale and retail trade (51 percent) also reported a lasting impact on their livelihoods due to the typhoon. By contrast, those in salaried and skilled employment as well as other daily laborers (unskilled, non-agriculture) reported less impact, with the majority reporting no or temporary impact, i.e. disrupted but now restored.

In Tacloban City area, a large number of retail stores run by small vendors who normally supplied the city and its surrounding barangays with fresh food and dry goods had been severely damaged. Other than physical damage and looting, many reported a lack of capital and clientele. A large number of tricycle and pedicab drivers in Tacloban City had as of November either lost their vehicles or required repairs. The report noted that the small business owners who were affected were those who operated their businesses at their house (Sari-sari store). It is the women of the house or other family members who mostly looked after the business.

Quoting the Multi-Cluster Needs Assessment (MCNA) of December 2013, the report noted that 31% of the affected population were currently not living in their own house. They are either living in temporary shelter near to their homestead, or staying with friends and family. The homelessness and dislocation of the people has been a source of severe stress.

Among the issues which will require the attention of the Social Protection Agencies are the possibilities in human trafficking with women and children particularly at risk. The increase in sexual and gender-based violence in evacuation centres and within families will need to be addressed and women and children will require social protection and assistance as a result of the loss of livelihoods, particularly of those where household breadwinners are female. The health and safety situation in evacuation centres and temporary shelters will require special attention as the time required for families to spend in such facilities lengthen.

In light of lost documentation by many IDPs which have led to land and property rights issues, special assistance with registration and documentation will be required.

Macro- ECONOMIC Impact

Despite the devastation brought about by the series of natural disasters that hit the country in the last quarter of 2013, most notably the earthquake in Bohol and typhoon Yolanda (Haiyan), the country's Gross Domestic Product (GDP) grew by 6.5 % in the fourth quarter of 2013. The Services sector, particularly, Trade and Real Estate, Renting & Business Activities, and the accelerated performance of Manufacturing, paved the way for the annual GDP growth of 7.2 % for the full year of 2013.

Meanwhile, on an annual basis, Gross National Income (GNI) grew by 7.5 percent in 2013 from 6.5 percent the previous year, the highest since the 8.5 percent growth posted in year 2003. Net Primary Income (NPI) from Rest of the World (ROW) has grown by 9.4 percent in 2013 from 4.8 percent in 2012. With the robust economic growth in 2013, per capita GDP accelerated to 5.4 percent from 5.0 percent in 2012. Likewise, per capita GNI grew in 2013 by 5.8 percent from 4.7 percent in the

previous year.

Economic Impact at the **REGIONAL** Level

There are four (4) regions largely affected by Typhoon Yolanda. Altogether, they have a total population of 21.382 million in 2012, or roughly about 14.2 percent of the total Philippine population (Table 5). The hardest hit is Eastern Visayas constitutes about 4.4 percent of the national population.

Table 5: Affected Population by Regions

Region	Population ('000)	Share of Population to Philippines (%)
IV-B	2,841	3.0
VI	7,296	7.6
VII	7,037	7.3
VIII	4,208	4.4
Affected Areas	21,382	22.3
Philippines	95,771	100.0

Source: NSCB, Regional Accounts of the Philippines

These regions account for 14.2 percent of GDP in 2012. They account for 20.3 percent of agriculture, 14.2 percent of industry, and 12.9 percent of services of the total national output of economy in 2012. Region VIII contributes 4.0 percent, 2.7 percent and 1.5 percent of the national sectoral output on Agriculture, Industry, and Services, respectively (Table 6).

Table 6: Regional and Sectoral Share to National Output, at current 2012 prices

Region	GRDP/GDP (PhP Billion) at 2012 Current Prices	Share to GDP (%)	Sector Share to National Output		
			Agriculture	Industry	Services
IV-B	180.20	1.70	3.60	2.00	1.20
VI	421.70	4.00	8.70	2.30	3.90
VII	666.20	6.30	4.00	7.20	6.30
VIII	228.20	2.20	4.00	2.70	1.50
Total of 4 Regions	1,496.30	14.2	20.3	14.2	12.9
Philippines	10,564.9	100.00	100.00	100	100

Source of basic data: NSCB, Regional Accounts of the Philippines

Of the affected regional economies, Agriculture accounts for 17 percent, followed by Industry at 31 percent, and Services at 51.9 percent (Table 7).

Table 7: Regional Distribution by Sector, at 2012 current prices

Region	Agriculture	Industry	Services
IV-B	25.0	36.2	38.8
VI	25.8	17.9	56.3
VII	7.5	35.3	57.2
VIII	21.8	38.6	39.6
Affected Areas	17.0	31.0	52.0
Philippines	11.8	31.1	57.1

Source of basic data: NSCB, Regional Accounts of the Philippines

The aggregated GRDP of the affected regions expanded by 5.4 percent in 2011-2012. However, the GRDP of Eastern Visayas (Region VIII) contracted by 6.2 percent in 2011-2012. Overall, the contribution of the affected regions to national growth is 0.8 percentage points out of the 6.8 GDP growths in 2012. Sectoral growth per region is shown on the following table.

Table 8: GDP/GRDP Growth Rate Per Sector, 2011-2012, at 2000 constant prices

Region	GDP/GRDP	Agriculture	Industry	Services
IV-B	4.2	-0.3	4.8	6.8
VI	7.5	-0.1	19.9	7.6
VII	9.3	-0.6	10.9	9.6
VIII	-6.2	-3.0	-18.5	7.5
Major Affected Areas	5.4	-0.01	4.1	7.8
Philippines	6.8	2.8	6.8	7.6

Source: NSCB, Regional Accounts of the Philippines

Post-Yolanda Economic Performance

Based on the PDNA results, typhoon Yolanda has resulted in total economic losses of PhP42.7 billion, representing an estimated 0.34 percent of Gross Domestic Product (GDP). Eastern Visayas (Region VIII) bore the highest amount of losses, estimated at around PhP 35.5 billion. Central Visayas (Region VII) has PhP 2.5 billion; Western Visayas (Region VI) has PhP 4.3 billion and MIMAROPA (Region IV-B) has PhP 0.351 billion. The National Economic and Development Authority (NEDA) initially estimates that this may have impacted the

GDP by anywhere from 0.66% to 3% of GDP. The GDP growth for 2013 could have been 7.4% instead of 7.2%.

NEDA projects that the negative impact of Yolanda may linger in 2014 but reconstruction efforts are expected to speed up recovery. The impact of reconstruction spending on inflation rate, T-bill rate not significant. Inflation is expected to have a +0.01 percentage points increase while Treasury Bill rate is estimated to rise by 0.04 percentage points. The impact on deficit-to-GDP ratio is estimated to increase by 0.5 percentage points.

For the succeeding years, the NEDA estimates that positive GDP growth will still continue although there is a possibility that agriculture may decline in 2014 (Table 9).

Table 9. Projected GDP Growth Rate, 2014-2016

Indicator	Base-line (2012)	Annual Plan Targets		
		2014	2015	2016
Gross Domestic Product (%)	6.8	6.5 - 7.5	7.0-8.0	7.5-8.5
GVA in agriculture, hunting, fishery and forestry	2.8	(0.9)-0.1	2.0-3.0	2.5-3.5
GVA in industry	6.8	9.8-11.0	8.6-9.7	9.3-10.3
GVA in services	7.6	6.0-6.9	6.8-7.8	7.2-8.1

Source: NEDA Assessment, 2014 PDNA

Impact on Inflation

Based on a year-on-year analysis, the movement of prices across the affected regions may not seem to be worrying, except for Eastern Visayas (Region VIII). The inflation in Eastern Visayas registered average 7.8 percent inflation from January to February 2014, which is 3.6 percentage points higher than the national average inflation. However, it has been noted on the ground that in the most affected areas like the city of Tacloban, the prices of some prime commodities have gone up.

Foreign Remittances

Personal remittances of overseas Filipinos have been observed to rise during the first two months after Yolanda. It was noted that there were remarkable increases over

the months of November and December in 2013, the first two months after Yolanda has struck. More than US\$ 200 million were sent by overseas Filipinos to the country compared to the same month of the previous year. This phenomenon could be attributed to the numerous outpouring of cash donations coming from overseas Filipinos to those who were affected by the typhoon.



Economic Impact on **LABOR** and Employment

In July 2013, prior to Typhoon Yolanda, the working-age population (aged 15 years old and over) in the four most affected regions (IV-B, VI, VII, VIII) was estimated at 15.0 million. Out of this number, approximately 9.6 million were in the labor force, registering a labor force participation rate of 63.9 per cent. With a labor force of 3.2 million in both Regions VI and VII, they account for 66.6 per cent of the total labor force in the four regions. Some 9.0 million people were employed in the four regions, while 0.6 million were unemployed, representing an unemployment rate of 6.2 per cent. The underemployment rate in the four regions was 20.0 per cent, with 1.8 million individuals seeking additional hours of work or an additional job. Among the four regions, Region VI had the highest unemployment rate (7.5 per cent) while Region IV-B had the lowest unemployment rate (3.9 per cent) and Region VIII had the highest

incidence of underemployment (29.0 per cent) while Region VII had the lowest underemployment rate (12.2 per cent).

Information gathered indicates a large impact of Typhoon Yolanda on workers and livelihoods in the four regions. In Region VIII, an assessment by the Department of Agriculture for example indicated some 1.28 million farmers and fisher folks have been affected in the region. Furthermore, a rapid assessment report of the Department of Labour and Employment (DOLE) Regional Office VIII covering the non-agricultural sector (services and industry) indicates that some 3,210 workers have lost their jobs permanently as a result of the shutdown of the business establishment or retrenchment. These permanent job losses have taken place in Leyte and Tacloban City and most were employed in distributorship and manufacturing businesses.

The above findings also support other available assessments. An ILO impact assessment indicates that some 5.6 million workers, 60% men and 40% women, in the four regions are estimated to have had their livelihoods impacted temporarily or permanently. Amongst the total number of workers affected, an estimated 2.4 million vulnerable workers, or 42.9 per cent of affected workers, were either self-employed or unpaid family workers. Among the four regions, Region VII is estimated to have both the largest number of workers and largest number of vulnerable workers affected.



Impact on **POVERTY**

A study by Hon. Secretary Arsenio Balisacan (2011) provides the baseline for the incidence of multi-dimensional poverty. The Government's target is to bring down this incidence from close to 15 percent in 2009 to between 8.0 and 10.0 percent in 2016.

In the Philippines, an individual is considered poor if the income of his family falls below the poverty threshold. NEDA noted that in reality, poverty is a state of deprivation in multiple dimensions – health and nutrition, education, living standards (water and sanitation facilities, electricity, quality of housing, etc.). Consideration of the multiple dimensions of poverty then brings to the fore the issue of quality of life.

NEDA noted that it is likely that the country will fall short of the Millennium Development Goals (MDGs) target of reduced incidence to 16.6 by 2015. The new target of 20.0 – 23.0 takes into consideration the slow response of poverty to economic growth beginning 2006 and the setback in 2013 due to the wide-scale destruction resulting from disasters.



IMPACT

on Infrastructure and Productive Sector

Infrastructure

Damage incurred by infrastructure facilities were distributed among the power/energy infrastructure (mainly on distribution facilities/electric cooperatives) comprising 27 percent of all reported damage, followed by road infrastructure (including national and local roads), and flood control/sea wall/slope protection accounting for 23 percent and 13 percent, respectively. The government buildings, mostly administration buildings for national and local level offices have a share of 11 percent. The telecommunications infrastructure, on the other hand accounts for 9 percent of total damage, which is primarily privately owned communication facilities.

While, there were insignificant percentages of other infrastructure sub-sectors, bridges and infrastructure at 5 percent, airports at 4 percent, water supply at 2 percent, sea ports at 1 percent, on the total share, it must be noted that infrastructure facilities incurred high costs of damage. Further, it may be worth noting that for flood control/sea wall/slope protection, airports and seaports, there is a need for harmonization of the data being developed by key agencies for consistency, and to enable support for funding.

Productive Sector

In terms of spatial coverage, the PDNA covered a total of four (4) regions with at least eleven (11) provinces. As of March 2014, consolidated data from the PDNA team indicated that the value of damage and losses to the Agriculture and Fisheries sub sector of the productive sector, stood at PhP18.8 billion and PhP24.7 billion, respectively. Among the four covered regions, Region VIII was the most heavily hit with damage and losses to agriculture and fisheries amounting to PhP34.7 billion. Among the areas covered include Tacloban City, Leyte, Eastern Samar, Western Samar, Southern Leyte and Biliran.

In Region IV-B, the province of Northern Palawan was covered by the PDNA where damage and losses to the productive sector amounted to PhP0.364 billion. Region VI covered the provinces of Aklan, Antique, Capiz, and Iloilo with PhP4.7 billion. Region VII that only covered the province of Northern Cebu reported damages and losses amounting to Php3.5 billion. Lastly, Region VIII covered the provinces of Biliran, Leyte, Southern Leyte, Eastern Samar, Samar and Tacloban City reported damages and losses amounting to Php34.7 billion.

Damage and losses in the agriculture and fisheries sectors have exposed affected communities and population to existing social vulnerabilities, especially with regard to livelihood and food security. In the agriculture sector, coconut farmers whose standing trees were felled by the typhoon are the worst affected. Subsequently, indirect employment of agriculture laborers engaged in coconut harvesting is also affected. Alternative sources of livelihood and food sources are needed in the next five to seven years as replanted coconut seedlings grow and reach their productive stage. This impact is most significant in Region VIII (Eastern Visayas), which is the second largest coconut producing region in the country. Rice farmers incurred damages in terms of farm animals, tools, equipment and rice seeds and seedlings. The typhoon struck after the harvest season and right before the planting season, which wiped out rice seedlings, and rice in storage for household consumption and selling.

In the fisheries sector, physical assets such as boats and fishing gears and equipment including hooks, nets, fish drying trays were either totally or partially destroyed. Coping mechanisms of the affected population should be monitored, including frequency and diversity of food intake, reliance on food aid, taking on credit and the corresponding amount, selling of assets, and migration, and sources of income and employment patterns.

Under the Industry, Trade and Services (ITS) sub sector of the productive sector, reported damage and losses amounted to PhP2.8 billion and PhP4.06 billion, respectively. The valuation of damage has been estimated through calculating the damage

to structures, machineries/equipment and inventories in the manufacturing, trading and service sectors; while losses were estimated based on foregone income, expenses in clearing and cleaning debris and additional operating costs as a result of the typhoon.

An estimated total of PhP1.3 billion is needed to undertake the reconstruction and recovery of the sector. During the assessment, findings indicate that financial and technical assistance are being requested by those affected.

In order to respond to this expressed need, it has been recommended that a special financing window, non-collateral and interest-free for the disaster affected micro enterprises be provided. Also, there is the need to institutionalize this special credit window as one of the preparations for calamities. There is also a need for the requirements to be relaxed or made lenient in order to facilitate a faster processing period.

Under the Mining sub Sector, reported damage and losses amounted to PhP80.17 Million and PhP263.43 Million, respectively. It is important to note that these values only came from Region VIII. There are no reported damage and losses for other covered regions.

Cross Cutting ISSUES

Gender Impact Analysis (GIA)

The GIA undertaken following Typhoon Yolanda, used predominantly secondary data and bemoaned the lack of sex and age disaggregated data collected as part of the post disaster data sets in the Typhoon Yolanda-affected regions. The GIA further noted that lack of voice of vulnerable affected groups, including older persons, persons with disability, and indigenous groups led to the “Black Saturday” protest mounted by women on March 8, International Women’s Day, to express their frustration over government’s lack of sensitivity to their gender needs and concerns in the aftermath of the Yolanda disaster. Without sex and age disaggregated data, it is

impossible to adequately and appropriately plan and implement an effective and efficient gender, and rights based, humanitarian recovery.

The GIA noted that women constitute 20% of single-headed households in the country and this must be essentially the same in the Yolanda-affected areas, where homes have been lost as a result of the storm surge. It further noted that by region, a high prevalence of nutritionally at-risk pregnant women was noted in MIMAROPA (43.6%) and Western Visayas (33.2%). Despite efforts to improve the health and nutrition of mothers and new-borns, maternal and neonatal mortality is still at 200 per 1,000 live births. This situation could be exacerbated as a result of the typhoon.

In the three regions most-affected by Typhoon Yolanda (Western Visayas, Central Visayas and Eastern Visayas), the reported rates for physical and sexual violence were usually higher than the national average, therefore in times of stress as brought about by the typhoon, this situation could escalate if initiatives are not put in place to address such.

The GIA called for Gender concerns to be mainstreamed in all post-disaster interventions for recovery and rehabilitation and identified several programme and projects in different sectors that could support women's economic and social empowerment in the aftermath of typhoon Yolanda. Among them were: Community-Based Coconut Seedling Project in Region 8; Seaweeds Project in Regions V, VI, VII and VIII;

Food preservation, processing and Marketing in Northern Iloilo; Women as "Block Leaders" for Information Dissemination on Loan Moratorium and Condonation; Maintenance of NFA Housing Projects; Repainting of Houses; Skills Training on Debris Management, Segregation of Waste, Welding, Road Painting, etc. and in Cash for Work Programs where it has been re-

ported that 40% of the 41,400 employed for 15 days for clearing debris were women.

Disaster Risk Reduction and Management (DRRM)

The Philippines is among the top global disaster hotspots, and is exposed to a wide range of natural hazards. It ranks 8th among countries most exposed to multiple hazards, and 13th among those at high economic risk to natural disasters, with at least 85 percent of GDP in areas at risk. Located in the Pacific Ring of Fire, it is highly exposed to earthquakes, volcanic eruptions, and other geological hazards, as well as to multiple typhoons and monsoon rains

The Philippines has achieved significant gains following the enactment of the National Disaster Risk Reduction and Management Act (Republic Act No. 10121) in 2010. Action plans, instructions, and guidelines across sectors and levels of governance, awareness building and community mobilization, investments in hazard assessment and forecasting, and initiatives in new realms of disaster risk reduction, such as risk financing and catastrophe risk modeling have been undertaken to implement the Law. Many challenges remain however, as to the implementation of the Law. These challenges are amplified by an occurrence of a natural hazard. Capacities related to disaster risk preparedness, mitigation, and reduction are not necessarily in place across society and existing institutions.

Sound DRRM practices suggest that the following be considered: the demarcation of safe locations and hazard zones; strengthening hazard information and risk assessments for use to inform pre-disaster actions; strengthening of engineering standards and designs especially for critical infrastructures; building community and sectoral capacities for disaster resilience particularly with regard to schools, health facilities, and other key public facilities; improving national ca-

capacities to deal with large scale disasters; establishing risk transfer mechanisms to reduce the burden on the Government as financier of the first and last resort; and advance discussion on the institutional arrangements for disaster risk management and reduction under the mechanism provided under RA 10121.

Recovery **STRATEGY**

The Strategic Framework for Recovery finds its groundings in RA 10121 or an act strengthening the Philippine Disaster Risk Reduction and Management System, the Philippine Development Plan 2011-2016, that has adopted a framework of inclusive growth, which is high growth that is sustained, generates mass employment, and reduces poverty; and the President's Social Contract to the Filipino People articulated in the following areas:

- The prioritization of jobs that empower the people and provide them with opportunities to rise above poverty.
- Making education the central strategy for investing in our people, reducing poverty and building national competitiveness.
- Recognition of farms and rural enterprises as vital to achieving food security and more equitable economic growth, worthy of re-investment for sustained productivity.
- Cognizant of anti-poverty programmes as well-considered programs that build capacity and create opportunity among the poor and the marginalized in the country

- The promotion of equal gender opportunity in all spheres of public policies and programs.

The PDNA has collected recommended recovery measures by Sector and by Region. The estimated valuation of the needs for recovery has been put at PhP106 billion pesos. The Strategic Framework notes that in light of the high levels of poverty in the affected regions, the following initiatives are highlighted for key-consideration:

Short Term

- Distribution of agricultural inputs to restore agricultural production to affected farmers
- Make available cash interventions and emergency employment through: cash for work; cash grants, and credit lines to stimulate the local economy while creating jobs to reduce the poverty and increase food security for men and women

Short to Medium Term

- Grant low or delayed interest loans, by government financial institutions to Micro, Small, and Medium Enterprises (MSMEs) affected by Yolanda (such as fisher folk, Sari-sari shop owners, tricycles transport owners) to kick start their economic activity
- Provision of technical skills- training in construction-related sector for both men and women to increase capacities and enable all equally, to participate in the expected increased demand for labour in the construction sector. Such training can be developed for carpentry, masonry, plumbing, electrical skills, painting, landscaping and other skills.
- Cash grants for repair and reconstruction to affected families, with support from technical teams (engineers and architects, etc.) should be the main form of

government support. Where resettlement is necessary, the sites should be as close as possible to the existing and new livelihoods of the affected families. New instruments such as rental housing cash assistant should be introduced to provide adequate accommodation for the affected families, especially those renters previously residing in informal settlements.

Medium Term

- Ensure the restoration of tertiary production facilities (e.g. farm to market roads, farm products storage facilities, dryers, facilities of fisher folk, etc.)

Medium to Long Term

- Encourage greater involvement of the private sector in promoting livelihoods at the local level (though subsidies or incentives)
- Reconstruct and develop national primary arterial roads and bridges, and sections of the other roads that provide critical access to productive and social (health, housing and education) activities in the affected areas.
- Update related DRRM policies to ensure its adequacy to respond to large and complex disasters.
- In order to respond to the necessary scale of the devastation, shelter assistance should go beyond the conventional housing reconstruction programs, and should aim to enable and accelerate the community self-recovery process.
- Ensure the mainstreaming of climate change and disaster risk resiliency in all government processes.

III. The Way **FORWARD**

With the findings of the PDNA, a final PDNA report will be drafted by the OCD which will include all the specific projects that were identified in the overall needs. These projects will contain the budgetary requirements over the years of expected implementation. Based on this final PDNA report, the NEDA will update the RAY to include:

- Refined estimate on the on the impacts to GDP and GRDP based on validated data on damages and losses;
- The comprehensive plan for recovery and reconstruction with the financing strategy; and
- More detailed list of programs and projects with implementation schedule in the typhoon-affected areas.

For the monitoring and evaluation of Yolanda-related activities, the PARR will be expected to undertake output monitoring while NEDA will take responsibility for the outcome monitoring. On the other hand, NEDA is proposing to have the Philippine Statistical Authority(PSA) to conduct household surveys on employment, income and other indicators to fully assess the conditions on the ground.

To fully respond to the general needs of DRRM in the country, the OCD will lead in reviewing the RA 10121, the DRRM Act of the Philippines. Recommendations will be solicited from all sectors to assess the effectiveness of the law in terms of DRRM and identify the gaps which may need some legislative actions.



For more information about the PDNA, you may contact:

*Usec. Eduardo D. Del Rosario
Executive Director, NDRRMC and
Administrator, OCD*

*Ms. Lenie Duran-Alegre
Chief, NDRRMS and Head Secretariat, NDRRMC*

Telefax: NDRRMC Opcen (+632) 911-1406; 912-2665; 912-5668; NDRRMC Secretariat (+632) 912-0441; 912-5947;

*Office of the Administrator, Office of Civil Defense (+632) 912-2424
Email: opcen@ndrrmc.gov.ph Website: www.ndrrmc.gov.ph*

1. Infrastructure

The infrastructure sector suffered damages and losses to transport that include national and provincial/local roads and bridges, flood control as well as utilities like water supply systems, power supply, drainage system and telecommunications.

The strong winds, floods (and storm surge in Tacloban City) brought about by Yolanda rendered many major road networks impassable. There were also damaged bridges in different areas of the four regions. Some airports and ports were likewise unable to accommodate their usual capacity. For instance, the major airport of Region VIII in Tacloban City was closed to commercial traffic for weeks due to the damages in its structure and navigational equipment. Many areas were inaccessible for extended periods due to the damaged airports and seaports, collapsed or damaged roads and bridges which hampered relief efforts, especially in Region VIII.

1.1 Roads

The most common type of damage on roads and bridges include collapsed embankment due to landslide, eroded slope protection or washed out shoulder materials, cut roads, collapsed/eroded abutment protection and bridge approaches as well as totally and partially destroyed bridges. The damages to roads sector were mostly in Northern Palawan for Region IV-B while almost all provinces of Regions VI and VIII have suffered damages in the sector. The table below shows the damages, losses and needs across the regions.

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	14,615,384.61	800,000.00	19,790,000.00
Sub-total	14,615,384.61	800,000.00	19,790,000.00
Region VI			
1. Aklan	17,700,000.00	10,725,000.00	102,250,000.00
2. Antique	56,491,816.00	520,000.00	406,484,000.00
3. Capiz	318,929,172.00	5,400,000.00	1,705,982,760.00
4. Iloilo	385,044,000.00	6,600,000.00	1,797,377,710.00
Sub-total	778,164,988.00	23,245,000.00	4,012,094,470.00
Region VII			
1. Northern Cebu	53,522,500.00	-	145,424,000.00
Sub-total	53,522,500.00	-	145,424,000.00
Region VIII			
1. Biliran	162,000.00	-	270,000.00
2. Leyte	42,103,916.54	2,150,000.00	163,384,506.69
2.1. Tacloban City	153,436,843.34	4,095,000.00	494,681,767.00
3. Southern Leyte	1,822,800.00	2,959,840.60	64,481,760.00
4. Eastern Samar	10,450,000.00	400,000.00	187,300,000.00
5. Samar	284,274,000.00	9,734,580.00	383,769,900.00
Sub-total	492,249,559.88	19,339,420.60	1,293,887,933.69
TOTAL	1,338,552,432.49	43,384,420.60	5,471,196,403.69

For Region VI, Iloilo and Capiz provinces bore the brunt of the damages to roads at PhP 318M and PhP 385M respectively. In Region VIII, the province of Samar had damages amounting to PhP 284M; Eastern Samar at PhP 10M while for Tacloban City alone, the damage to roads was estimated to reach PhP 153M.

1.2 Bridges

The value of the damages on bridges is more pronounced in Region VIII, which has about PhP 21M, mostly in the province of Samar. Region VI registered damages at PhP 220M spread across all its provinces with Iloilo having more than PhP 180M. The damages, losses and needs of the affected bridges are the following.

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	65,901,346.92	-	85,671,751.00
Sub-total	65,901,346.92	-	85,671,751.00
Region VI			
1. Aklan	19,800,000.00	-	25,800,000.00
2. Antique	2,711,735.00	-	62,500,000.00
3. Capiz	17,836,023.00	-	18,000,000.00
4. Iloilo	180,548,000.00	2,458,000.00	722,982,500.00
Sub-total	220,895,758.00	2,458,000.00	829,282,500.00
Region VII			
1. Northern Cebu	1,105,000.00	-	22,410,000.00
Sub-total	1,105,000.00	-	22,410,000.00
Region VIII			
1. Biliran	858,329.04	-	10,632,506.64
2. Leyte	320,000.00	5,400,000.00	131,100,000.00
2.1. Tacloban City	-	4,403,323.00	56,750,000.00
3. Southern Leyte	368,474.40	4,116,000.00	4,236,000.00
4. Eastern Samar	200,000.00	440,000.00	19,600,000.00
5. Samar	19,900,000.00	1,384,939.00	30,248,000.00
Sub-total	21,646,803.44	15,744,262.00	252,566,506.64
TOTAL	309,548,908.36	18,202,262.00	1,189,930,757.64

1.3 Flood Control, Seawall & Slope Protection

In terms of damages to flood control/sea wall/slope protection, the total damage for Regions VI, VII and VIII totaled to an estimated of PhP 386M, of which the Aklan has recorded with the highest share of destruction at about PhP 69M. Tacloban City has damages amounting to PhP 45M. Alternatively, it is noted that losses were estimated only in Region VIII. The total needs to reconstruct flood control infrastructure across the affected regions is estimated at around PhP 1.7B.

	Damage	Losses	Needs
Region VI			
1. Aklan	69,684,000.00	-	395,900,000.00
2. Antique	23,500,000.00	-	36,650,000.00
3. Capiz	34,000,000.00	-	55,000,000.00
4. Iloilo	87,449,000.00	-	77,718,000.00
Sub-total	214,633,000.00	-	565,268,000.00
Region VII			
1. Northern Cebu	11,560,000.00	-	23,120,000.00
Sub-total	11,560,000.00	-	23,120,000.00
Region VIII			
1. Biliran	15,856,430.80	-	19,492,235.79
2. Leyte	33,917,172.88	2,812,557.00	300,992,430.79
2.1. Tacloban City	45,903,500.00	-	245,629,849.65

3. Southern Leyte	4,078,909.60	-	15,083,412.82
4. Eastern Samar	6,150,000.00	1,300,000.00	497,398,000.00
5. Samar	54,161,010.00	2,206,260.00	83,949,565.50
Sub-total	160,067,023.28	6,318,817.00	1,162,545,494.55
TOTAL	386,260,023.28	6,318,817.00	1,750,933,494.55

There are no estimated losses in the other regions due from flood control structures from the other regions due to the in availability of data.

Recovery and Reconstruction Framework

The main purpose of recovery and reconstruction of flood control infrastructure is to improve the capacity of such structures to prevent a similar unfortunate event in the future. The following were considered in the identification of the recovery and reconstruction activities:

1. Updated hazard maps will be used in the determination of the vulnerabilities and risks of the areas which will be covered by the flood control measures.
2. As necessary, structural design in accordance with international standards will be adopted to prevent any similar event in the future.
3. Flood control activities will be linked with the reconstruction and repair of roads and bridges to ensure that their vulnerabilities to similar disasters are significantly prevented or minimized.
4. Recovery and reconstruction projects will be intensively monitored to gain lessons in the future as well as obtain the needed baseline information for future PDNA.

1.4 Power Sector

The Visayas region accounts for 12% of the national power demand. The regional grid in the Visayas has an installed capacity of approximately 2,447 megawatts (MW) of which 722 MW or 30% is situated in the Leyte-Samar sub-grid. This sub-grid is served entirely by geothermal power plants of which 610 MW, operated by Energy Development Corporation (EDC), and the balance 112 MW by Green Core Energy. National Power Corporation (NPC), a Government-owned corporation, through its subsidiary Small Power Utilities Group (SPUG) provides power facilities, primarily diesel-fired, in the missionary areas where private operators are hesitant to operate due to security and economic concerns.

The typhoon-affected areas comprise separate yet interconnected island grids of Cebu, Negros, Panay, Leyte, Samar, and Bohol. The National Grid Corporation of the Philippines (NGCP), a private sector entity, supplies power through its transmission network and a system of submarine cable interconnections consisting of (i) Leyte-Luzon 440 MW, (ii) Leyte-Cebu 400 MW, (iii) Leyte-Bohol (100 MW), (iv) Cebu-Negros (200 MW), and (v) Negros-Panay (100 MW) which help increase the power transfer capability between the islands and also reinforce the Luzon grid. The National Electrification Administration's (NEA) main objective on the other hand is to bring electricity to the entire country by providing either loans or subsidies to electric cooperatives (EC) to put up infrastructure and establish operations and facilities necessary for electrification. NEA plays a key role in the rural electrification sector by providing financial, institutional, and technical services to the ECs and promoting competence enhancement. Prior to the disaster, a total of 33 ECs were

operating across 20 provinces and managing power infrastructure consisting of substations, sub-transmission lines, and distribution networks serving the *barangay* households.

The petroleum fuel needs of the Visayas are served by a mix of private-sector operators including the likes of Petron, Shell, and Chevron. There are seven bulk oil storage depots in Leyte which serve the surrounding areas and approximately 145 gasoline/diesel stations operating between Leyte and Samar. Since the petroleum fuel sector is entirely managed and operated by the private sector, inventory volumes of different fossil fuels are generally kept at reasonable levels at all times.

Damage, Losses and Needs

Yolanda did not spare the power sector, which is generally privately owned, in the regions affected. Power lines of the electric cooperatives. Poles fell and lines were cut due to the strong winds as well as the large trees that fell on the wires. Power blackouts were experienced across the regions with Region VIII, especially Tacloban City, experiencing the longest power outage. Foregone revenues were experienced for a longer time in Tacloban City when the houses affected by the storm surge and floods needed more electrical repairs before power can be reconnected. Because of the damages to infrastructure and equipment as well as on the household consumers, economic losses were experienced due to lost revenues. Although at present most of the power supply is restored, electricity demand may decline if the reconstruction of the dwellings of consumer households is not repaired immediately. The table below shows the damages, losses and needs of the power sector in the affected regions.

	Damage	Losses	Needs
Region IV-B			
Northern Palawan	34,189,080.50	-	37,287,080.50
Sub-total	34,189,080.50	-	37,287,080.50
Region VI			
Aklan	33,462,531.00	-	206,440,539.00
Antique	40,575,546.49	-	40,575,546.39
Capiz	618,124,820.25	-	618,124,820.25
Iloilo	325,981,902.63	-	244,607,353.93
Sub-total	1,018,144,800.37	-	1,109,748,259.57
Region VII			
Northern Cebu	224,704,700.42	-	269,645,640.50
Sub-total	224,704,700.42	-	269,645,640.50
Region VIII			
Tacloban City	540,707,183.10	141,099,840.78	583,024,183.09
Eastern Samar	1,020,000.00	210,000.00	5,355,000.00
Samar	-	1,196,280.00	-
Sub-total	541,727,183.09	142,736,120.78	588,379,183.09
TOTAL	1,818,765,764.38	142,736,120.78	2,005,060,163.66

The above damages were incurred by private electric power companies. In Region VI, the hardly hit power firms were those in the province of Capiz and Iloilo, with damages at Php 618M and Php 326M, respectively. The City of Tacloban in Region VIII suffered an estimated PhP 540M in damages.

Recovery and reconstruction framework

The power sector in the affected regions is private in nature. Financing the needs of this sector can be coursed through the National Electrification Administration. The government can also provide some form incentives for the power cooperatives to rebuild with higher degree of resiliency from similar disasters in the future.

1.5 Water

Water systems in the Philippines are categorized into three levels: Level III—piped water supply with a private water point, e.g., a household connection; Level II—piped water with a communal water point, e.g., a bore well or spring system; and Level I—stand-alone water points, e.g., hand pumps, shallow wells, rainwater collectors. Access to Level III water supply was low in the affected areas pre-disaster.

According to Local Water Utilities Administration (LWUA), Water Districts (WDs) provide majority of the piped water (Level III) service connections in these areas. Some WDs supply water to more than one LGU. The three largest WDs are (i) Metro Roxas WD (MRWD) which serves Roxas City and three neighboring towns (Roxas City, Ivisan, Panitan and Panay), and has 34,685 connections, (ii) Leyte Metro WD (LMWD) which serves Tacloban and eight other towns (Tacloban City, Dagami, Santa Fe, Alangalang, Tanauan, Tolosa, Tabon-tabon, Palo and Pastrana), with 29,345 connections, and (iii) Metro Kalibo WD (MKWD) which serves Kalibo and three adjacent LGUs (Balete, Banga, Kalibo and New Washington), and has 21,128 connections. MRWD, LMWD and MKWD account for 41% of total WD service connections. Most of the other WDs are small, single-LGU WDs with less than 3,000 connections (1,652 on average, and as low as 136). For this PDNA, it assumed that all connections are households.

It is assumed that most LGUs which are not serviced by WDs, have their own water utilities which operate primarily around the *poblacion* and provide piped water to about 15% of urban households only. In some LGUs, there is both a WD and an LGU-run water utility which serves some barangays not reached by the WD. LGU-run water utilities are likely to be smaller and less efficient than WDs, with higher operating costs and lower tariffs (usually below cost-recovery). The main water sources for WDs are deep wells and for LGU-run utilities, primarily spring.

Damages, Losses and Needs

For water supply, Regions VIII was greatly affected by the aftermath of Super Typhoon Yolanda through lost supply of potable water in the affected provinces. The provinces of Samar, Eastern Samar and Tacloban City had the most damages in Region VIII. In terms of losses, Tacloban City incurred about PhP 141M.

	Damage	Losses	Needs
Region VIII			
Biliran	403,595.80	-	475,000.00
Tacloban City	30,826,777.20	141,099,840.78	169,479,753.28

Southern Leyte	60,116.00	-	117,068.00
Eastern Samar	8,159,500.00	440,000.00	16,153,400.00
Samar	65,000,000.00	1,196,280.00	87,758,000.00
Sub-total	104,449,989.00	142,736,120.78	273,983,221.28
TOTAL	104,449,989.00	142,736,120.78	273,983,221.28

Recovery and Reconstruction Framework

The main objective of the recovery and reconstruction of water supply systems is to restore at the shortest possible time the capacity of such systems to provide water primarily to the affected population and eventually to the commercial and industrial users in the area. The following were considered in the identification of the recovery and reconstruction activities:

1. As necessary, structural design in accordance with international standards will be adopted to prevent any damage from a similar disaster in the future.
2. Population and economic activities will be prime considerations in the restoration of water supply.
3. Raising the tariff or water rates will be avoided as much as possible to enable the people and the economy to recover soonest.
4. Recovery and reconstruction projects will be intensively monitored to gain lessons in the future as well as obtain the needed baseline information for future PDNA.

1.6 Telecommunications

The Super Typhoon Yolanda had a devastating impact on the telecommunications services in the affected area. It ravaged mobile phone cell sites, television cable lines as well as equipment. These telecommunications company are privately owned. In the first instance all services were lost. Smart and Globe systems were both extensively damaged. Cellular towers and transmission lines, especially fiber and submarine cables tripped by storm surges were destroyed or failed. In Tacloban City, all the aerial cables went down and the fiber went along with it. The telecommunications providers were able to quickly restore by expedient means the essential services in Aklan, Antique, Bohol, Cebu, Guimaras, Iloilo, Negros Occidental, Negros Oriental and Southern Leyte amid efforts to accelerate restoration of mobile services in the entire Visayas region. In the first days, Globe Telecom reported that they had restored cellular services in the towns of Buruanga in Aklan, Maripipi and Culaba in Biliran, Basey in Western Samar and San Isidro in Northern Samar. Digitel Mobile Philippines quickly restored 88 percent of its network coverage in the region. In the municipality of Coron, six cell sites were ravaged by strong winds brought by the typhoon. The second impact on the services was the increased demand; the number of calls that were made on the telephone system was about 60 times the normal volume, far in excess the capacity to handle those calls and contributed to bandwidth congestion. The service providers worked to optimize the sites with some on 2G while others were on 3G. The National Telecommunications Commission (NTC) advised the public to text first, establish contact and then initiate a telephone call.

Damages, Losses and Needs

	Damage	Losses	Needs
Region IV-B			
Northern Palawan	113,100,000.00	-	147,030,000.00

Sub-total	113,100,000.00	0.00	147,030,000.00
Region VIII			
Leyte	40,255,956.00	37,292,518.00	-
Tacloban City	662,366,505.36	1,044,557,907.67	794,839,806.43
Southern Leyte	7,600.00	-	15,000.00
Sub-total	702,630,061.36	1,081,850,425.67	794,854,806.43
TOTAL	815,730,061.36	1,081,850,425.67	941,884,806.43

For Region VIII, the damages of more than PhP 702M and the needs which is around PhP 941M. In Region IV-B, a total of PhP 110M was the estimated amount of damages to such telecommunication facilities of the Smart and Globe cellular phone companies. Damage to radio equipment amounted to PhP 600K while to cable television lines, PhP 2.5M. In all, damages to telecommunication in Region IV-B sum up to PhP 113.1M, which requires PhP 147M for rehabilitation. There were no reports from other regions although it is believed that the telecommunications sector in Regions VI and VII must have incurred damages and losses. For instance, the PLDT have advised publically that the company anticipate the recovery cost to be some PhP 200M without reference to any specific region.

Recovery and Reconstruction Needs

This was a powerful storm that has no precedent. The telecommunications service providers have acknowledged that they will need to review their engineering standards and procedures. Total private and commercial costs for rehabilitation are not available, however, the Philippine Long Distance Company (PLDT) has identified the need to rebuild 140 base stations that the typhoon damaged. The service providers propose to take advantage of the situation to rebuild and to establish an integrated network for Digitel and Sun and Smart. Since the sector is basically private in nature, the government may assist them in providing some information on rebuilding with disaster reduction measures like providing hazard maps which are vital in site selection of certain telecommunication installations.

1.7 Transport (Sea Ports)

There are one hundred eighteen (118) ports in Regions IV-B, V, VI, and VIII, sixty two (62) of which are administered by the Philippine Ports Authority (PPA), fifty one (51) are municipal ports and five (5) are feeder ports under the Department of Transportation and Communications (DOTC). In addition, there are sixty three (63) ports in Region VIII under the Cebu Ports Authority (CPA).

Damages, Losses and Needs

The total damages to ports across the affected regions amounted to about PhP 48M. The biggest damages came from Tacloban City in Region VIII amounting to PhP 43M with estimated needs of almost PhP 209M for reconstruction. The other damages were from the Provinces of Palawan which comprised mainly of boat landings.

	Damage	Losses	Needs
Region IV-B			
Northern Palawan	5,737,307.69	11200000	7,458,500.00
Sub-total	5,737,307.69	11200000	7,458,500.00
Region VI			

Iloilo	-	-	9,483,000.00
Sub-total	-	-	9,483,000.00
Region VIII			
Tacloban City	43,131,000.00	28,400,000.00	209,567,000.00
Eastern Samar	50,000.00	70,000.00	3,000,000.00
Sub-total	43,181,000.00	28,470,000.00	212,567,000.00
TOTAL	48,918,307.69	39,670,000.00	229,508,500.00

1.8 Transport (Airports)

Damages, Losses and Needs

Based on the validated figures made by the PDNA team, the total damages incurred in all affected airports amounts to PhP 145M with estimated losses of PhP 3.3M for Northern Palawan of Region IV-B and Eastern Samar of Region VIII. Among the reported damaged airports are Busuanga Airport in Palawan Province, and Tacloban Airport located at Tacloban City which incurred a damage of PhP 143M. The total amount needed to repair and reconstruct the airports is more than PhP 3B. The damage of the airport in Region VII was not readily available although it has been that minor repairs will be needed amounting to PhP 4.3M.

	Damage	Losses	Needs
Region IV-B			
Northern Palawan	2,000,000.00	3,300,000.00	3,119,900.00
Sub-total	2,000,000.00	3,300,000.00	3,119,900.00
Region VI			
Aklan	-	-	1,096,000.00
Capiz	-	-	3,292,000.00
Sub-total	-	-	4,388,000.00
Region VIII			
Tacloban City	143,000,000.00	-	3,410,668,000.00
Eastern Samar	427,000.00	30,000.00	700,000.00
Sub-total	143,427,000.00	30,000.00	3,411,368,000.00
TOTAL	145,427,000.00	3,330,000.00	3,418,875,900.00

Recovery and Reconstruction Framework

The primary objective of recovery is to immediately restore access and mobility of persons, goods and services in the affected areas which will assist in the revitalization of the livelihood of the typhoon survivors. The reconstruction program took into consideration several activities aimed of rebuilding partially and totally damaged transport facilities and utilities making them safer and disaster resilient than they were before. The following were considered in the determination of the recovery and reconstruction activities:

1. Updated hazard maps will be consulted on the vulnerabilities and risks of any reconstruction.
2. As necessary, structural design standards will be upgraded to prevent any similar event in the future and, if deemed appropriate, relocation of affected transportation facilities will be considered.

3. Mitigation programs and projects will be identified to ensure that the vulnerabilities and risks to similar disasters of existing infrastructure assets are significantly prevented or minimized.
4. Recovery and reconstruction projects will be intensively monitored to gain lessons in the future as well as obtain the needed baseline information for future PDNA.

The detailed lists of projects for reconstruction of roads, bridges, airports and seaports are attached which includes those that were initially funded and completed from various sources such as the quick response funds (QRF).

1.9 School Buildings

The education in the four affected regions sustained varying degrees in terms of damages particularly in school infrastructure. For instance In Region VI, 863 structures were totally destroyed along with about 500,000 text books. Aside from the physical damages to structures, the oil spill incident in Estancia created strong fumes which made it unsafe for the Botongon Elementary School to hold classes.

In Palawan, Typhoon Yolanda affected forty nine (49) elementary and secondary schools in the Division Palawan, namely: 4 in Agutaya, 16 in Busuanga, 16 in Coron, 9 in Culion, 2 in Dumaran, and 2 in Linapacan) with a total of two hundred eight (208) classrooms, one hundred twenty eight (128) of which were partially damaged and eighty (80) totally damaged. A total of twenty-nine (29) teachers lost their homes. Classes in schools damaged by Yolanda and/or used as evacuation centers were suspended for a couple of days. Though classes resume immediately, emergency classes following the double session scheme (half day per class) in some schools just to accommodate was employed. Saturday classes were also done to catch up with time lost. Most learners returned to classes immediately after the typhoon. A minimal percentage reported only after two weeks.

In Region VI, a total of 863 classrooms were totally damaged amounting to PhP 153M and 5,407 classrooms were partially damaged amounting to PhP 802M. A total amount of PhP 2B is need for reconstruction and rehabilitation.

In Northern Cebu, two DepEd Schools Divisions were affected by the typhoon namely: the Cebu Province Division composed of 15 municipalities and the Division of City of Bogo composed of three Schools Districts. After Typhoon Yolanda, Northern Cebu had 350 affected school sites with 283 elementary and 67 secondary schools. Within the 350 affected school sites, 456 classrooms are considered as for replacement while 1,974 are for repairs.

In Region VIII, most of the schools located at the coastal areas were damaged. In Tacloban City, 39 elementary schools were damaged, 12 secondary schools and 8 tertiary and TESDA facilities were damaged amounting to PhP 382M. In Leyte Province, 2,698 facilities were damaged amounting to PhP 627M and losses of PhP 524M. Leyte shared the biggest reconstruction needs of PhP 2.1B.

Damages, Losses and Needs

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	7,686,213.27	-	72,473,502.25
Sub-total	7,686,213.27	-	72,473,502.25
Region VI			

1. Aklan	74,384,420.00	10,050,880.00	307,594,000.00
2. Antique	18,160,762.00	8,636,120.00	60,775,200.00
3. Capiz	681,054,880.00	30,096,520.00	1,085,871,200.00
4. Iloilo	182,877,208.53	34,411,200.00	552,181,400.00
Sub-total	956,477,270.53	83,194,720.00	2,006,421,800.00
Region VII			
1. Northern Cebu	294,180,539.28	-	840,515,825.50
Sub-total	294,180,539.28	-	840,515,825.50
Region VIII			
1. Biliran	24,115,000.00	-	300,068,392.25
2. Leyte	627,878,800.00	524,208,200.00	2,157,623,800.00
2.1. Tacloban City	382,721,701.10	39,752,824.50	1,184,766,841.71
3. Southern Leyte	64,000.00	-	2,276,800.00
4. Eastern Samar	450,563,000.00	29,950,000.00	1,286,851,840.00
5. Samar	57,738,900.00	501,384.00	135,529,000.00
Sub-total	1,543,081,401.13	594,412,408.50	5,067,116,673.96
TOTAL	2,801,425,424.21	677,607,128.50	7,986,527,801.71

1.10 Hospital/ Health Facilities

The typhoon incurred damages on health facility infrastructures and equipment that compromised the quality health care that have been continually provided pre- Yolanda state in the province of Leyte.

According to the assessment conducted, damages of the typhoon have reached an amount of PhP 352M. In terms of losses, the Department of Health was able to spend an amount of PhP 38.7M to augment immediate quick fix of health infrastructures, prevent and control epidemics, as well as to provide the necessary supplies, equipment and logistics to contribute to recovery.

In Region IV-B, under health infrastructure, the result of assessment conducted by several agencies revealed that the damage to health facilities amounted to an outstanding PhP 75.4M. Strong winds brought by Typhoon Yolanda blew away the roofing of more structurally sound facilities while totally destroying health facilities of light material construction. Further, losses from facilities currently undergoing construction, enhancement and rehabilitation program that were destroyed prior to completion and from response efforts to ensure continuous operations of these health service facilities amounted to a total of PhP 32.5M and needs of PhP 98.1M is needed for reconstruction and recovery.

In Region VI, damaged health facilities were pegged at the amount of PhP 16.8M, no recorded losses and needs of PhP 42.3M.

In Region VIII, before the typhoon, the health facilities under the Department of Health which included forty- four (44) Rural Health Units; two hundred and eighty- three (283) Barangay Health Stations; and thirteen (13) hospitals ensured to provide quality health care to all Filipinos in accordance to the concept of Universal Health Care, otherwise known as the Kalusugang Pangkalahatan. In Leyte, Typhoon Yolanda affected 30 Rural Health Units, 59

Barangay Health Stations and 7 Hospitals amounting to PhP 101M, losses of PhP 1.5M and needs of PhP 177M.

Damages, Losses and Needs

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	75,490,000.00	32,500,000.00	98,137,000.00
Sub-total	75,490,000.00	32,500,000.00	98,137,000.00
Region VI			
1. Aklan	2,039,705.00	-	8,884,102.00
2. Antique	1,418,500.00	-	12,147,808.00
3. Capiz	10,670,000.00	-	10,697,000.00
4. Iloilo	2,762,650.00	-	10,659,876.00
Sub-total	16,890,855.00	-	42,388,786.00
Region VIII			
1. Biliran	1,078,063.48	-	415,721,174.14
2. Leyte	101,821,577.50	1,583,000.00	177,035,029.36
2.1. Tacloban City	99,550,321.71	504,042.00	743,821,359.13
3. Southern Leyte	-	-	-
4. Eastern Samar	40,187,600.00	3,260,000.00	102,423,000.00
5. Samar	17,265,030.00	858,184.00	23,307,790.50
Sub-total	259,902,592.69	6,205,226.00	1,462,308,353.13
TOTAL	352,283,447.69	38,705,226.00	1,602,834,139.13

1.11 Government Buildings

Reported damage in government infrastructure includes municipal buildings, barangay halls, barangay covered courts, public markets, public terminals and other government facilities. The destruction of these government facilities was generally due to strong winds that hampered the delivery of services specially an effective coordination/communication from Barangay Level up to the Municipal Level.

In Region IV-B, the cost of barangay and municipal halls, convention centers, multi-purpose buildings, motor pools, public markets, slaughter houses, covered courts, day care centers, sheds, outposts in 4 municipalities incurred an amount of PhP 20.7M, no recorded losses and needs for PhP 38.6M.

In Region VI, the PDNA Teams recorded an amount of PhP 7.9M damages and needs of PhP 8.6M for Antique and Capiz.

In Region VII, the damages in government establishments such as municipal halls, city hall, barangay halls, municipal gymnasiums, hall of justice, public markets and community stage were pegged at PhP 150M, no recorded losses and needs of PhP 334M.

In Region VIII, total damage to government infrastructure is PhP 857M and estimated amount of losses is PhP 85.7M. Tacloban shared the highest amount of reconstruction

needs of PhP 903M due to the regional centers of government agencies that were damaged. Thus, total amount of P 2.2B is needed for reconstruction and rehabilitation.

Damages, Losses and Needs

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	20,733,652.40	-	38,617,232.00
Sub-total	20,733,652.40	-	38,617,232.00
Region VI			
1. Aklan	-	-	-
2. Antique	106,820.00	-	177,000.00
3. Capiz	7,794,992.00	-	8,500,000.00
4. Iloilo	-	-	-
Sub-total	7,901,812.00	-	8,677,000.00
Region VII			
1. Northern Cebu	150,357,321.22	-	334,127,380.50
Sub-total	150,357,321.22	-	334,127,380.50
Region VIII			
1. Biliran	19,229,673.75	-	46,556,000.00
2. Leyte	180,363,523.04	69,988,484.27	626,356,006.27
2.1. Tacloban City	364,799,683.1	736,584.43	903,836,763.75
3. Southern Leyte	5,530,525.24	-	2,916,711.71
4. Eastern Samar	148,068,296.00	7,432,500.00	481,893,380.88
5. Samar	139,427,289.81	982,256.00	181,255,476.75
Sub-total	857,418,990.91	85,769,084.70	2,242,814,339.36
TOTAL	1,036,411,776.53	85,769,084.70	2,624,235,951.86

1.12 Tourism

In Region VI, the damages brought by Typhoon Yolanda is amount to PhP 28.6M and losses of PhP 11.1M. An amount of PhP 46.8M is needed for reconstruction and recovery. This covers the Sebaste Inland Resort in Antique, tourists inns, cultural heritage and burial sites in Capiz, the Mariit Agro-Eco Tourism Park and cultural heritage of Dueñas and Banate in Iloilo.

In Region VII, tourism infrastructure covers only the major tourist destinations of Northern Cebu; namely, Bantayan Island and Malapascua Island. The total amount of PhP 180M has been recorded as damages and PhP 52.8M as losses. A total amount of PhP 234M is needed for reconstruction and rehabilitation.

In Region VIII, Eastern Samar shared the highest amount of damages amounting to PhP 16.5M that covers guest/lodging house, coral gardens, eco-parks and rock formations in Maydolong, Balangkayan, Guiuan, Lawaan and Balangiga. A total amount of damages is PhP 32M and losses of PhP 2.2M is depicted in the table below for Region VIII. Thus, total amount of PhP 49.5 is needed for reconstruction and recovery.

Damages, Losses and Needs

	Damage	Losses	Needs
Region VI			
1. Aklan	-	-	-
2. Antique	391,500.00	83,500.00	600,000.00
3. Capiz	14,060,000.00	11,000,000.00	30,000,000.00
4. Iloilo	14,150,000.00	45,000.00	16,200,000.00
Sub-total	28,601,500.00	11,128,500.00	46,800,000.00
Region VII			
1. Northern Cebu	180,753,000.00	52,850,000.00	234,978,900.00
Sub-total	180,753,000.00	52,850,000.00	234,978,900.00
Region VIII			
1. Biliran	1,799,680.77	15,000.00	2,600,000.00
2. Leyte	-	-	-
2.1. Tacloban City	8,501,250.00	1,110,000.00	17,838,768.70
3. Southern Leyte	42,000.00	-	500,000.00
4. Eastern Samar	16,516,316.20	825,815.81	19,819,579.40
5. Samar	5,500,000.00	272,936.00	8,800,000.00
Sub-total	32,359,246.97	2,223,751.81	49,558,348.10
TOTAL	241,713,746.97	66,202,251.81	331,337,248.10

1.13 Agricultural/ Irrigation Facilities

Damage was estimated at PhP 185M referring to irrigation systems across the affected Regions. An amount of PhP 375M is needed to for reconstruction and rehabilitation. In Region IV-B, total amount of damage was pegged at PhP 7.3M due to the communal irrigation system in Coron and Busuanga. In Region VI, Aklan shared the highest reconstruction needs amounting to PhP 107M. Northern Palawan of Region VII, an amount of PhP 1.2M is estimated to cover the damages of 2 private irrigation systems and 2 communal irrigation projects. An amount of PhP 2.4M is need for the reconstruction and rehabilitation of the said irrigation systems. Further, Samar in Region VIII shared the largest amount of damages amounting to PhP 46.9M, losses of PhP 9.3M and needs of PhP 59M.

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	7,353,720.00	-	8,482,064.00
Sub-total	7,353,720.00	-	8,482,064.00
Region VI			
1. Aklan	-	-	107,566,560.00
2. Antique	-	-	41,373,859.95
3. Capiz	45,000,000.00	-	50,040,000.00
4. Iloilo	35,000,000.00	-	50,368,443.00
Sub-total	80,000,000.00	-	249,348,862.95
Region VII			
1. Northern Cebu	1,200,000.00	-	2,400,000.00
Sub-total	1,200,000.00	-	2,400,000.00
Region VIII			
1. Biliran	9,230,000.00	2,300,000.00	28,230,000.00

2. Southern Leyte	19,511,870.40	11,306,080.00	1,754,650.66
3. Eastern Samar	20,833,333.33	625,000.00	25,000,000.00
5. Samar	46,980,500.00	9,396,100.00	59,966,900.00
Sub-total	96,555,703.73	23,627,180.00	114,951,550.66
TOTAL	185,109,423.73	23,627,180.00	375,182,477.61

Summary of damages, losses and needs of the Infrastructure Sector

Overall, based on the assessment of the PDNA teams, damages to the infrastructure sector are estimated to reach PhP 1.6 billion while losses stood Php 355 million. The total recovery and reconstruction needs are estimated at PhP 16.4 billion. The following table shows the summary of the damages, losses and needs of the infrastructure sector.

SUMMARY OF DAMAGES, LOSSES AND NEEDS OF THE INFRASTRUCTURE SECTOR

DAMAGE

Region/Province	Roads	Bridges	Flood Control, Seawall & Slope Protection	Power	Water	Tele- communication	Transport (Seaport)
<i>Region IV-B</i>							
1. Northern Palawan	14,615,384.61	65,901,346.92	-	34,189,080.50	-	113,100,000.00	5,737,307.69
<i>Sub-total</i>	14,615,384.61	65,901,346.92	-	34,189,080.50	-	113,100,000.00	5,737,307.69
<i>Region VI</i>							
1. Aklan	17,700,000.00	19,800,000.00	69,684,000.00	33,462,531.00	-	-	-
2. Antique	56,491,816.00	2,711,735.00	23,500,000.00	40,575,546.49	-	-	-
3. Capiz	318,929,172.00	17,836,023.00	34,000,000.00	618,124,820.25	-	-	-
4. Iloilo	385,044,000.00	180,548,000.00	87,449,000.00	325,981,902.63	-	-	-
<i>Sub-total</i>	778,164,988.00	220,895,758.00	214,633,000.00	1,018,144,800.37	-	-	-
<i>Region VII</i>							
1. Northern Cebu	53,522,500.00	1,105,000.00	11,560,000.00	224,704,700.42	-	-	-
<i>Sub-total</i>	53,522,500.00	1,105,000.00	11,560,000.00	224,704,700.42	-	-	-
<i>Region VIII</i>							
1. Biliran	162,000.00	858,329.04	15,856,430.80	-	403,595.80	-	-
2. Leyte	42,103,916.54	320,000.00	33,917,172.88	-	-	40,255,956.00	-
2.1. Tacloban City	153,436,843.34	-	45,903,500.00	540,707,183.09	-	662,366,505.36	43,131,000.00
3. Southern Leyte	1,822,800.00	368,474.40	4,078,909.60	-	60,116.00	7,600.00	-
4. Eastern Samar	10,450,000.00	200,000.00	6,150,000.00	1,020,000.00	8,159,500.00	-	50,000.00
5. Samar	284,274,000.00	19,900,000.00	54,161,010.00	-	65,000,000.00	-	-
<i>Sub-total</i>	492,249,559.88	21,646,803.44	160,067,023.28	541,727,183.09	104,449,989.00	702,630,061.36	43,181,000.00
<i>TOTAL</i>	1,338,552,432.49	309,548,908.36	386,260,023.28	1,818,765,764.38	104,449,989.00	815,730,061.36	48,918,307.69

Region/Province	Transport (Airport)	School Buildings	Hospital/ Health Facilities	Government Buildings	Tourism	Agricultural/ Irrigation Facilities	Total Infrastructure Damage
Region IV-B							
1. Northern Palawan	2,000,000.00	7,686,213.27	75,490,000.00	20,733,652.40	-	7,353,720.00	346,806,705.39
Sub-total	2,000,000.00	7,686,213.27	75,490,000.00	20,733,652.40	-	7,353,720.00	346,806,705.39
Region VI							
1. Aklan	-	74,384,420.00	2,039,705.00	-	-	-	217,070,656.00
2. Antique	-	18,160,762.00	1,418,500.00	106,820.00	391,500.00	-	143,356,679.49
3. Capiz	-	681,054,880.00	10,670,000.00	7,794,992.00	14,060,000.00	45,000,000.00	1,747,469,887.25
4. Iloilo	-	182,877,208.53	2,762,650.00	0.00	14,150,000.00	35,000,000.00	1,213,812,761.16
Sub-total	-	956,477,270.53	16,890,855.00	7,901,812.00	28,601,500.00	80,000,000.00	3,321,709,983.90
Region VII							
1. Northern Cebu	-	294,180,539.28	-	150,357,321.22	180,753,000.00	1,200,000.00	917,383,060.92
Sub-total	-	294,180,539.28	-	150,357,321.22	180,753,000.00	1,200,000.00	917,383,060.92
Region VIII							
1. Biliran	-	24,115,000.00	1,078,063.48	19,229,673.75	1,799,680.77	9,230,000.00	72,732,773.64
2. Leyte	-	627,878,800.00	101,821,577.50	180,363,523.04	-	-	1,026,660,945.96
2.1. Tacloban City	143,000,000.00	382,721,701.13	99,550,321.71	364,799,683.1	8,501,250.00	-	2,474,944,764.90
3. Southern Leyte	-	64,000.00	-	5,530,525.24	42,000.00	19,511,870.40	31,486,295.64
4. Eastern Samar	427,000.00	450,563,000.00	40,187,600.00	148,068,296.00	16,516,316.20	20,833,333.33	702,625,045.53
5. Samar	-	57,738,900.00	17,265,030.00	139,427,289.81	5,500,000.00	46,980,500.00	690,246,729.81
Sub-total	143,427,000.00	1,543,081,401.13	259,902,592.69	857,418,990.91	32,359,246.97	96,555,703.73	4,998,696,555.48
TOTAL	145,427,000.00	2,801,425,424.21	352,283,447.69	1,036,411,776.53	241,713,746.97	185,109,423.73	9,584,596,305.69

LOSSES

Region/Province	Roads	Bridges	Flood Control, Seawall & Slope Protection	Power	Water	Tele- communication	Transport (Seaport)
<i>Region IV-B</i>							
1. Northern Palawan	800,000.00	-	-	12,250,000.00	-	-	11,200,000.00
Sub-total	800,000.00	-	-	12,250,000.00	-	-	11,200,000.00
<i>Region VI</i>							
1. Aklan	10,725,000.00	-	-	16,341,502.00	-	-	-
2. Antique	520,000.00	-	-	6,003,669.45	-	-	-
3. Capiz	5,400,000.00	-	-	211,277,213.40	-	-	-
4. Iloilo	6,600,000.00	2,458,000.00	-	30,978,594.20	-	-	-
Sub-total	23,245,000.00	2,458,000.00	-	264,600,979.05	-	-	-
<i>Region VII</i>							
1. Northern Cebu	-	-	-	67,411,410.13	-	-	-
Sub-total	-	-	-	67,411,410.13	-	-	-
<i>Region VIII</i>							
1. Biliran	-	-	-	-	-	-	-
2. Leyte	2,150,000.00	5,400,000.00	2,812,557.00	-	-	37,292,518.00	0.00
2.1. Tacloban City	4,095,000.00	4,403,323.00	-	42,317,000.00	141,099,840.78	1,044,557,907.67	28,400,000.00
3. Southern Leyte	2,959,840.60	4,116,000.00	-	-	-	-	-
4. Eastern Samar	400,000.00	440,000.00	1,300,000.00	210,000.00	440,000.00	-	70,000.00
5. Samar	9,734,580.00	1,384,939.00	2,206,260.00	0.00	1,196,280.00	-	-
Sub-total	19,339,420.60	15,744,262.00	6,318,817.00	42,527,000.00	142,736,120.78	1,081,850,425.67	28,470,000.00
TOTAL	43,384,420.60	18,202,262.00	6,318,817.00	386,789,389.18	142,736,120.78	1,081,850,425.67	39,670,000.00

Region/Province	Transport (Airport)	School Buildings	Hospital/ Health Facilities	Government Buildings	Tourism	Agricultural/ Irrigation Facilities	Total Infrastructure Losses
Region IV-B							
1. Northern Palawan	3,300,000.00	-	32,500,000.00	-	-	-	60,050,000.00
Sub-total	3,300,000.00	-	32,500,000.00	-	-	-	60,050,000.00
Region VI							
1. Aklan	-	10,050,880.00	-	-	0.00	-	37,117,382.00
2. Antique	-	8,636,120.00	-	-	83,500.00	-	15,243,289.45
3. Capiz	-	30,096,520.00	-	-	11,000,000.00	-	257,773,733.40
4. Iloilo	-	34,411,200.00	-	-	45,000.00	-	74,492,794.20
Sub-total	-	83,194,720.00	-	-	11,128,500.00	-	384,627,199.05
Region VII							
1. Northern Cebu	-	-	-	-	52,850,000.00	-	120,261,410.13
Sub-total	-	-	-	-	52,850,000.00	-	120,261,410.13
Region VIII							
1. Biliran	-	-	-	-	15,000.00	2,300,000.00	2,315,000.00
2. Leyte	-	524,208,200.00	1,583,000.00	69,988,484.27	-	-	643,434,759.27
2.1. Tacloban City	-	39,752,824.50	504,042.00	7,365,844.43	1,110,000.00	-	1,313,605,782.38
3. Southern Leyte	-	-	-	-	-	11,306,080.00	18,381,920.60
4. Eastern Samar	30,000.00	29,950,000.00	3,260,000.00	7,432,500.00	825,815.81	625,000.00	44,983,315.81
5. Samar	-	501,384.00	858,184.00	982,256.00	272,936.00	9,396,100.00	26,532,919.00
Sub-total	30,000.00	594,412,408.50	6,205,226.00	85,769,084.70	2,223,751.81	23,627,180.00	2,049,253,697.06
TOTAL	3,330,000.00	677,607,128.50	38,705,226.00	85,769,084.70	66,202,251.81	23,627,180.00	2,614,192,306.24

NEEDS

Region/Province	Roads	Bridges	Flood Control, Seawall & Slope Protection	Power	Water	Tele- communication	Transport (Seaport)
Region IV-B							
1. Northern Palawan	19,790,000.00	85,671,751.00	-	37,287,080.50	-	147,030,000.00	7,458,500.00
Sub-total	19,790,000.00	85,671,751.00	-	37,287,080.50	-	147,030,000.00	7,458,500.00
Region VI							
1. Aklan	102,250,000.00	25,800,000.00	395,900,000.00	206,440,539.00	-	-	-
2. Antique	406,484,000.00	62,500,000.00	36,650,000.00	40,575,546.39	-	-	-
3. Capiz	1,705,982,760.00	18,000,000.00	55,000,000.00	618,124,820.25	-	-	-
4. Iloilo	1,797,377,710.00	722,982,500.00	77,718,000.00	244,607,353.93	-	-	9,483,000.00
Sub-total	4,012,094,470.00	829,282,500.00	565,268,000.00	1,109,748,259.57	-	-	9,483,000.00
Region VII							
1. Northern Cebu	145,424,000.00	22,410,000.00	23,120,000.00	269,645,640.50	-	-	-
Sub-total	145,424,000.00	22,410,000.00	23,120,000.00	269,645,640.50	-	-	-
Region VIII							
1. Biliran	270,000.00	10,632,506.64	19,492,235.79	-	475,000.00	-	-
2. Leyte	163,384,506.69	131,100,000.00	300,992,430.79	-	-	-	-
2.1. Tacloban City	494,681,767.00	56,750,000.00	245,629,849.65	583,024,183.09	169,479,753.28	794,839,806.43	209,567,000.00
3. Southern Leyte	64,481,760.00	4,236,000.00	15,083,412.82	-	117,068.00	15,000.00	-
4. Eastern Samar	187,300,000.00	19,600,000.00	497,398,000.00	5,355,000.00	16,153,400.00	-	3,000,000.00
5. Samar	383,769,900.00	30,248,000.00	83,949,565.50	-	87,758,000.00	-	-
Sub-total	1,293,887,933.69	252,566,506.64	1,162,545,494.55	588,379,183.09	273,983,221.28	794,854,806.43	212,567,000.00
TOTAL	5,471,196,403.69	1,189,930,757.64	1,750,933,494.55	2,005,060,163.66	273,983,221.28	941,884,806.43	229,508,500.00

Region/Province	Transport (Airport)	School Buildings	Hospital/ Health Facilities	Government Buildings	Tourism	Agricultural/ Irrigation Facilities	Total Infrastructure Needs
Region IV-B							
1. Northern Palawan	3,119,900.00	72,473,502.25	98,137,000.00	38,617,232.00	-	8,482,064.00	518,067,029.75
Sub-total	3,119,900.00	72,473,502.25	98,137,000.00	38,617,232.00	-	8,482,064.00	518,067,029.75
Region VI							
1. Aklan	1,096,000.00	307,594,000.00	8,884,102.00	-	-	107,566,560.00	1,155,531,201.00
2. Antique	-	60,775,200.00	12,147,808.00	177,000.00	600,000.00	41,373,859.95	661,283,414.34
3. Capiz	3,292,000.00	1,085,871,200.00	10,697,000.00	8,500,000.00	30,000,000.00	50,040,000.00	3,585,507,780.25
4. Iloilo	-	552,181,400.00	10,659,876.00	-	16,200,000.00	50,368,443.00	3,481,578,282.93
Sub-total	4,388,000.00	2,006,421,800.00	42,388,786.00	8,677,000.00	46,800,000.00	249,348,862.95	8,883,900,678.52
Region VII							
1. Northern Cebu	-	840,515,825.50	-	334,127,380.50	234,978,900.00	2,400,000.00	1,872,621,746.50
Sub-total	-	840,515,825.50	-	334,127,380.50	234,978,900.00	2,400,000.00	1,872,621,746.50
Region VIII							
1. Biliran	-	300,068,392.25	415,721,174.14	46,556,000.00	2,600,000.00	28,230,000.00	824,045,308.82
2. Leyte	-	2,157,623,800.00	177,035,029.36	626,356,006.27	-	-	3,556,491,773.11
2.1. Tacloban City	3,410,668,000.00	1,184,766,841.71	743,821,359.13	903,836,763.75	17,838,768.70	-	8,814,904,092.74
3. Southern Leyte	-	2,276,800.00	-	2,916,711.71	500,000.00	1,754,650.66	91,381,403.19
4. Eastern Samar	700,000.00	1,286,851,840.00	102,423,000.00	481,893,380.88	19,819,579.40	25,000,000.00	2,645,494,200.28
5. Samar	-	135,529,000.00	23,307,790.50	181,255,476.75	8,800,000.00	59,966,900.00	994,584,632.75
Sub-total	3,411,368,000.00	5,067,116,673.96	1,462,308,353.13	2,242,814,339.36	49,558,348.10	114,951,550.66	16,926,901,410.89
TOTAL	3,418,875,900.00	7,986,527,801.71	1,602,834,139.13	2,624,235,951.86	331,337,248.10	375,182,477.61	28,201,490,865.66

2. Social

The Social Sector is comprised of three sub-sectors, namely: a) Education; b) Health; and c) Housing. In this context, damages and losses estimated were on the effects on school buildings and school materials; health structures and medical supplies and equipment; and on the dwelling units of the people in the Yolanda-affected areas. The proposed recovery and reconstruction needs are related to repair and reconstruction of structures and provision of necessary equipment and supplies of the education, health and housing sub-sectors.

2.1 Education

Pre-Disaster Situation

There are a large number of elementary and secondary schools, higher education institutions (HEIs) and technical vocational institutions (TVIs) in the typhoon-affected areas. As shown in Table 2, the four regions worst affected by the typhoon i.e., MIMAROPA, Western, Central and Eastern Visayas, had 4,357 elementary schools, 888 secondary schools, 350 HEIs and 631 TVIs. Enrolment in the four regions as of June 2013 was 1,167,466 at the elementary level, 498,220 at the secondary level, 141,033 in higher education institutions (HEIs) and 25,745 in technical-vocational institutes (TVIs). The public sector plays a dominant role in the delivery of basic educational services while the private sector plays a significant role in higher education and a dominant role at the technical vocational education level.

Public-Private Distribution of Schools/Tertiary Institutions and Enrolments in Disaster-Affected Regions (Regions IV-B, VI, VII, VIII)

Level	Schools/Institutions		Enrolments	
	Public ¹	Private	Public	Private
Elementary	3,882	475	1,112,957	54,509
Secondary	662	226	440,744	57,476
Higher Education	55	295	108,612	32,421
Technical Vocational	91	540	6,436	19,309

Source: Department of Education (DepEd) for basic education (SY 2013, see Annex 1 for breakdown by Division); Commission on Higher Education (CHED) for higher education (November 2013); Technical Education and Skills Development Authority (TESDA) for TVET (December 2013)

As shown in the table, Yolanda directly affected 2,905 public elementary schools (74.8% of public elementary schools in the affected regions), 470 public secondary schools (71.0% of secondary schools in the affected regions), 44 HEIs (12.6% of all HEIs in the affected regions) and 229 TVIs (36.3% of all TVIs in the affected regions).

Number of Affected Schools, HEIS and TVIs

¹ DepEd's baseline data for affected municipalities in school divisions

by Region and Level of Education

Region	Public Schools		Private Schools	Public Institutions		Private HEIs	Public	Private
	Elementary	Secondary		SUCs	LUCs			
Region IV B (MIMAROPA)	68	5		3				
Region VI (Western Visayas)	1,324	226		6		7	26	63
Region VII (Central Visayas)	274	82		2	1		5	7
Region VIII (Eastern Visayas)	1,239	157		11	1	13	32	96
Total	2,905	470	521	22	2	20	63	166

Source: DepEd (public basic education, see Annex 2 for breakdown by Division), CHED (higher education) and TESDA (technical vocational); as of December 10, 2013

Note: Data on basic education private schools was estimated by the YRRP Education Sector Team.

Damage, Losses and Needs

Aside from the classrooms, damages in the education sector also include other school facilities such as multi-purpose halls, school furniture, instructional materials and equipment like computers and duplicating machines. In terms of value, the damages in Region VIII were the greatest amounting to PhP 2.3B. Eastern Visayas sustained the most significant damage in terms of educational facilities and other assets. Damage is heavily accounted for by classrooms/educational facilities. Other types of damages include: school furniture; water and sanitation facilities; learning materials; computers; science and math equipment; and technical vocational tools and equipment.

The estimated losses experienced in the education sector are mainly attributed to the following: a) foregone revenues, especially for the private schools/institutions; b) the cost of urgent repairs of schools used as emergency shelter; c) provision of alternative learning spaces for the affected/displaced children; d) additional expenses incurred to assist the population in terms of extension of classes to compensate for the delays due to the disaster; e) cleanup costs; and f) additional cost due to higher electricity costs from the use of generator sets or higher cost of water supply.

The needs of the education sector represent the amount required to normalize the conduct of schooling across the affected regions. The will involve repair and reconstruction of damaged structures through the building back better principle, replacement of destroyed desks, books, chalkboards and other equipment.

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	-	1,587,000.00	285,667,000.00
Sub-total	-	1,587,000.00	285,667,000.00
Region VI			
1. Aklan	8,953,450.00	10,050,880.00	3,276,364,209.00
2. Antique	1,789,905.00	8,636,120.00	1,464,012,453.00
3. Capiz	34,793,654.00	30096520	8,153,202,318.00
4. Iloilo	20,889,455.00	34,411,200.00	6,696,715,517.00
Sub-total	66,426,464.00	83,194,720.00	19,590,294,497.00

Region VII			
1. Northern Cebu	5,286,797.60	-	3,935,422,836.88
Sub-total	5,286,797.60	-	3,935,422,836.88
Region VIII			
1. Biliran	-	-	154,007,790.00
2. Leyte	2,153,759,860.00	2,488,409,039.00	9,002,958,165.00
2.1. Tacloban City	99550321.71	257,571,091.05	3,445,080,055.54
3. Southern Leyte	-	-	907,436,000.00
4. Eastern Samar	60,000,000.00	66,000,000.00	3,740,255,444.61
5. Samar	-	-	1,920,394,898.30
Sub-total	2,313,310,181.71	2,811,980,130.05	19,170,132,353.45
TOTAL	2,385,023,443.31	2,896,761,850.05	42,981,516,687.33

Impacts

The Filipino resiliency was again thrust into the limelight as various media outlets documented the aftermath of Typhoon Yolanda. This resiliency was tested as the super-typhoon not only affected physical states, but mental and emotional states as well. Loss of shelter and the experience of being homeless causes trauma to the affected population. These people have undergone a disturbing experience during the fury of Typhoon Yolanda and the biggest impacts caused by the destruction of houses affects the areas of health, education, and livelihood, as well as general feelings of disempowerment and desperation.

When the displaced populace were temporarily accommodated in evacuation centers, health issues abounded, as these evacuation centers were also damaged by the typhoon. Fever, common cold and cough incidences started increasing, moreover, since these identified evacuation centers were primarily schools, disruption of classes ensued.

The mental and emotional trauma affecting the individuals was also validated by the PDNA team, as the victims disclosed feelings of disempowerment. Upon displacement, those affected were relying on aid coming from various national agencies and international organizations, of which they have no control. Desperation then occurs, as their means of livelihood are affected. They have no means to provide food for their families, in addition to saving money to eventually rebuild their homes, which caused breakdown of relationships and isolation. Violence and breakdown of society have been triggered, were recorded in Region 8 in Tacloban City.

On a positive note, the affected population now knows the value of disaster-preparedness and that they are eager to learn about how they could be involved in the efforts. Before Yolanda, during conduct of pre-emptive evacuation, some families were reluctant, citing past experiences with disasters. Now, when asked if they would still be reluctant to evacuate, they would do so without question.

Socio-economic Impacts

The typhoon has disrupted education of more than a million children in basic education. The classes have been suspended for several days since the super typhoon hit in Regions IV-B (MIMAROPA), VI, VII and VIII. Many children had to move to evacuation centers and many schools still serve as evacuation centers. This significantly cuts down the students' valuable learning time. In addition, the traumatic experience of students and teachers may have a long lasting impact on their mental health and learning and teaching performance, if not addressed immediately. Education disruption may have a negative impact on the educational achievement of students.

In addition to the 141,000 students enrolled in the 44 higher education institutions that were directly affected by the typhoon, many students studying in Metro Manila, Cebu and other cities outside the affected regions also had to give up their studies as their families in the Yolanda-hit areas lost the means to provide for their schooling.

Before the disaster, the affected HEIs in Region VI and Region VIII had been producing about 27,000 graduates a year, with 70% major in Business and related programs, Teacher Education, IT and Engineering. The impaired capacity of the HEIs to replace the lost workforce and to produce more, for industries and schools, could constrain or slow down rehabilitation and re-development efforts.

Reconstruction and Recovery Framework

For the realization of the primary endpoint of this sector, the regional and provincial governments are aware that there are numerous steps to be undertaken.

For the education sub-sector, the challenge lies with the delivery of quality education to affected areas and provide proper better learning atmosphere for the students. The priority of the Department of Education is in ensuring all regional, division and district offices have the capacity to assess needs of the units. Other priorities are ensuring personnel welfare, resumption of classes as soon as affected schools are able to, provision of alternative learning spaces and tents, provision of learners and teachers kits, alternative delivery mode modules and other actions that would aid resumption of classes. International Partners, Government and Non-Government Organization started to help in terms of rebuilding, reforming and restoring the education sector.

Policy and Program Recommendations

1. Mainstreaming of DRR and CCA integration in school curricula.
2. Adoption of the No-Build Zone Policy in geo-hazardous areas.
3. Reconstruction activities should integrate resilience conforming to the higher safety standards (Build-Back-Better)

Strategies for Recovery

1. Construction of DRR-compliant classrooms.
2. Strengthen and institutionalize Disaster Risk Reduction Mainstreaming in school curricula.
3. Curriculum Enhancement for DRR and Climate Change Adaptation (CCA)
4. Capacity Building of Personnel/Teachers on Disaster Risk Reduction and Management/Education-in-Emergencies (DRRM/EIE), including pedagogy/methodology to handle large groups, guided by gender-fair learner-centered approaches and child development principles
5. Capacity building of district supervisors and school heads on DRR-enhanced school community planning, including development of contingency plan
6. Capacity building of parents and community on DRR
7. Provision of school supplies and Early Child Care and Development (ECCD)/learning kits for affected children and teachers, day care workers
8. Capacity building of teachers to assist health sector in the process of Psycho-social recovery for the students.
9. Adoption of alternative delivery modes for affected students
10. Inclusion of Water, Sanitation and Hygiene (WASH) and nutrition intervention in reconstruction/recovery efforts
11. Finalize a DRR and CCA Framework with a National Education Plan on DRR and CCA

12. Conduct hazard and vulnerability assessment in school premises and community
13. Conduct continuous disaster preparedness trainings and drills
14. Require all schools to train and organize School Disaster Management Committee at all levels.
15. LGUs to construct evacuation centers to minimize the use of school facilities at the occurrence of disasters.

2.2 Housing

With maximum wind speed reaching up to 375 kph, shanties and makeshift houses within the 50-kilometer radius of its path succumbed to the wrath of Typhoon Yolanda and were totally-destroyed. In Region IV-B, 20,439 houses were affected majority of them residential houses in the municipalities within 50 kilometer track of the super typhoon which are made of light materials consisting of nipa as roofing and sawali as wall covering. A total of 292,851 privately owned units in the four provinces of Region VI were partially damaged. In Region VII, of the fifteen (15) municipalities and one (1) city of the northern part of Cebu that were hardly hit by Super Typhoon Yolanda, Daanbantayan has the most number of totally damaged houses. A total of 47,790 houses were totally damaged while there were 54,207 that were partially damaged. In Northern Palawan, 6,544 houses were totally destroyed while 13,895 houses were partially damaged. In Region VIII, 234,196 house were partially destroyed and 241,482 were totally damaged.

Across the regions, 595,149 were recorded as partially damaged, 489,613 were totally damaged and a total of 1,084,762 were damaged by Typhoon Yolanda.

REGION/PROVINCE	NUMBER of HOUSES		
	Partially	Totally	TOTAL
GRAND TOTAL	595,149	489,613	1,084,762
<i>Region IV-B</i>			
Northern Palawan	13,895	6,544	20,439
Sub-Total	13,895	6,544	20,439
<i>Region VI</i>			
Aklan	55,193	23,676	78,869
Antique	81,406	12,062	93,468
Capiz	75,206	80,842	156,048
Iloilo	81,046	77,217	158,263
Sub-Total	292,851	193,797	486,648
<i>Region VII</i>			
Northern Cebu	54,207	47,790	101,997
Sub-Total	54,207	47,790	101,997
<i>Region VIII</i>			
Biliran	14,572	5,140	19,712
Leyte	167,180	179,823	347,003
Tacloban City	15,484	21,212	36,696
Southern Leyte	4,954	278	5,232
Eastern Samar	17,957	24,751	42,708
Western Samar	14,049	10,278	24,327
Sub-Total	234,196	241,482	475,678

Damages and Losses

In Region IV-B, damages worth PhP 173.8M is estimated based on 6,544 totally destroyed houses (PhP 100M) and 13,895 partially damaged homes (PhP 73.8M) in four of the affected municipalities covered by PDNA, namely: Busuanga, Coron, Culion and Linapacan. This assessment is limited only to the totally and partially damaged houses based on the reports from the MSWDOs/MDRRMOs and from field validation in various barangays in Coron, Culion, Linapacan, and Busuanga. Losses from emergency assistance were considered but no report was obtained regarding this information. However, due to abundance of resources in the area particularly on the materials for the construction of houses, majority have already repaired/reconstructed their dwellings. Some have received financial assistance from the provincial and municipal government which they use to buy construction materials.

The damages to Region VI amounted to PhP 2.9B for the partially damaged houses and PhP 6.7B for the totally destroyed houses with losses amounting to PhP 59M for partially and PhP 32.7M for totally destroyed houses. These houses were primarily damaged by strong winds that tore off roofing from houses. The torn roofing then became projectiles that also caused partial damage to the surrounding housing fixtures. Falling debris, mostly from trees, also contributed in damaging these houses. The losses incurred in this category stems from the loss of income from rentals as well as from the clearing of debris expenses. In Region VII, damage to houses is estimated at PhP 813M for partially and PhP 2.3B for totally and needs. In Region VIII, an amount of PhP 12.7M is estimated for partially and PhP 26.7B for totally damaged houses.

REGION/ PROVINCE	(1) DAMAGED			(2) LOSSES		
	Partially	Totally	TOTAL	Partially	Totally	TOTAL
GRAND TOTAL	16,614,490,048.94	35,744,252,750.70	52,358,742,799.64	364,762,039.07	2,812,571,710.93	3,177,333,750.00
Region IV-B						
Northern Palawan	73,800,000.00	100,045,000.00	173,845,000.00		-	-
Sub-Total	73,800,000.00	100,045,000.00	173,845,000.00	-	-	-
Region VI						
Aklan	551,930,000.00	828,660,000.00	1,380,590,000.00	13,522,285.00	3,580,500.00	17,102,785.00
Antique	814,060,000.00	422,170,000.00	1,236,230,000.00	7,825,055.00	575,000.00	8,400,055.00
Capiz	752,060,000.00	2,829,470,000.00	3,581,530,000.00	18,425,470.00	17,211,500.00	35,636,970.00
Iloilo	810,460,000.00	2,702,595,000.00	3,513,055,000.00	19,856,270.00	11,401,000.00	31,257,270.00
Sub-Total	2,928,510,000.00	6,782,895,000.00	9,711,405,000.00	59,629,080.00	32,768,000.00	92,397,080.00
Region VII						
Northern Cebu	813,105,000.00	2,389,500,000.00	3,202,605,000.00		-	-
Sub-Total	813,105,000.00	2,389,500,000.00	3,202,605,000.00	-	-	-
Region VIII						
Biliran	29,144,000.00	28,504,847.00	57,648,847.00	-	-	-
Leyte	10,261,000,000.00	22,075,000,000.00	32,336,000,000.00			
Tacloban City	1,657,726,048.94	1,422,881,903.70	3,080,607,952.64		43,472,000.00	43,472,000.00
Southern Leyte	49,540,000.00	69,500,000.00	119,040,000.00	-	-	-
Eastern Samar	520,685,000.00	2,475,100,000.00	2,995,785,000.00	286,376,750.00	2,722,610,000.00	3,008,986,750.00
Western Samar	280,980,000.00	400,826,000.00	681,806,000.00	18,756,209.07	13,721,710.93	32,477,920.00
Sub-Total	12,799,075,048.94	26,471,812,750.70	39,270,887,799.64	305,132,959.07	2,779,803,710.93	3,084,936,670.00

Cost of Damage Per Unit

REGION/ PROVINCE	PARTIALLY		TOTALLY
	Unit Cost		Unit Cost
Region IV-B			
Northern Palawan	5,000.00-5,600.00 (DSWD)		10,000.00-35,000.00 (DSWD)
Region VI			
Aklan	10,000.00		35,000.00
Antique	10,000.00		35,000.00
Capiz	10,000.00		35,000.00
Iloilo	10,000.00		35,000.00
Region VII			
Northern Cebu	15,000.00		50,000.00
Region VIII			
Biliran	2,000.00		5,545.69
Tacloban City	107,060.58		67,079.10
Leyte	Makeshift	41,401.06	122,760.00
	Composite	89,992.82	
	Concrete	143,976.55	
Southern Leyte	10,000.00		250,000.00
Eastern Samar	28,996.21		100,000.00
Western Samar	20,000.00		38,998.44

Needs

The needs for reconstruction in the housing sector in Region IV-B is estimated at PhP 278M which includes core shelter assistance and direct financial assistance via the Department of Social Welfare and Development (DSWD). *Resettlement project needs as well as the cost of land acquisition, site development, and installation of the water supply system are not yet included in this estimate.* The housing sector prioritizes the need to provide permanent housing for the internally displaced population that is safe, accessible, and sustainable and one that will provide security of tenure for the inhabitants. Another focus of the housing sector is the relocation of remaining communities, whether affected by Typhoon Yolanda or not which are found in the designated ‘Danger Zones’. Long-term land use planning and zoning of the affected provinces that incorporate multi-hazard risks on a systematic basis, should also be undertaken by the respective local government units.

In Region VI, a total amount of PhP 19.3B is needed for both partially and totally houses. For Region VII, an amount of PhP 542M for partially and PhP 3.3B for totally and a total amount of PhP 3.8B is needed for reconstruction of damaged houses.

In Region VIII, the 51,532 partially damaged need PhP 1.8B, 63,447 totally damages need PhP 11.4B. A total of PhP 13.2B is needed for both partially and totally damaged houses.

REGION/ PROVINCE	(3) NEEDS				TOTAL
	Partially (Houses)	Partially (Amount)	Totally (Houses)	Totally (Amount)	
GRAND TOTAL	349,123.00	12,218,500,097.11	242,309.00	24,562,397,662.89	36,780,897,760.00
Region IV-B					
Northern Palawan	-	-	-	278,215,000.00	278,215,000.00
Sub-Total	-	-	-	278,215,000.00	278,215,000.00
Region VI					
Aklan	55,193	2,234,488,605.00	14,322	1,037,056,020.00	3,271,544,625.00
Antique	31,939	1,293,050,415.00	2,300	166,543,000.00	1,459,593,415.00
Capiz	75,206	3,044,714,910.00	68,846	4,985,138,860.00	8,029,853,770.00
Iloilo	81,046	3,281,147,310.00	45,604	3,302,185,640.00	6,583,332,950.00
Sub-Total	243,384.00	9,853,401,240.00	131,072.00	9,490,923,520.00	19,344,324,760.00
Region VII					
Northern Cebu	54,207	542,070,000.00	47,790	3,345,300,000.00	3,887,370,000.00
Sub-Total	54,207.00	542,070,000.00	47,790.00	3,345,300,000.00	3,887,370,000.00
Region VIII					
Biliran	14,572	72,860,000.00	5,140	79,330,000.00	152,190,000.00
Leyte	-	-	12,000	3,600,000,000.00	3,600,000,000.00
Tacloban City	-	-	11,000	3,071,300,000.00	3,071,300,000.00
Southern Leyte	4,954	844,366,857.11	278	63,069,142.89	907,436,000.00
Eastern Samar	17,957	624,822,000.00	24,751	3,000,600,000.00	3,625,422,000.00
Western Samar	14,049	280,980,000.00	10,278	1,633,660,000.00	1,914,640,000.00
Sub-Total	51,532.00	1,823,028,857.11	63,447.00	11,447,959,142.89	13,270,988,000.00

Cost of Needs per Unit (Financial Assistance)

REGION/ PROVINCE	Unit Cost of Partially Damaged House	Unit Cost of Totally Damaged House
Region IV-B		
Northern Palawan		
Region VI		
Aklan	40,485.00	72,410.00
Antique	40,485.00	72,410.00
Capiz	40,485.00	72,410.00
Iloilo	40,485.00	72,410.00
Region VII		
Northern Cebu	10,000.00	70,000.00
Region VIII		
Biliran	5,000.00	10,000.00
Leyte	-	-
Tacloban City	-	-
Southern Leyte	130,000.00	170,000.00
Eastern Samar	+20% of the Cost of Damage	+20% of the Cost of Damage
Western Samar	20,000.00	70,000.00/ 130,000.00

For Relocation

REGION/PROVINCE	FOR RELOCATION (PRIORITY)			
	Number of Houses	Cost per unit	Amount	Remarks
GRAND TOTAL	98,707.00		17,494,482,000.00	
<i>Region IV-B</i>				
Northern Palawan	900	300,000	270,000,000.00	NHA Recommendation
	900.00		270,000,000.00	
<i>Region VI</i>				
Aklan	12,005	144,027.99	1,729,056,000.00	NHA Region VI Recommendation
Antique	11,525	172,147.51	1,984,000,000.00	NHA Region VI Recommendation
Capiz	9,896	157,538.40	1,559,000,000.00	NHA Region VI Recommendation
Iloilo	11,435	14,660.25	167,640,000.00	NHA Region VI Recommendation
	44,861.00		5,439,696,000.00	
<i>Region VII</i>				
Northern Cebu	8,548	250,000.00	2,137,000,000.00	NHA Proposed Housing Projects
	8,548.00		2,137,000,000.00	
<i>Region VIII</i>				
Biliran	399	80,000.00	31,920,000.00	Municipality of Biliran (Php 80,000.00 per unit)
Leyte	12,000	300,000.00	3,600,000,000.00	NHA Recommendation
Tacloban City	11,000	279,209.09	3,071,300,000.00	Number of Houses (NHA) / Amount (PDNA)
Southern Leyte	1,386	289,766.23	401,616,000.00	Municipality of Silago (Php 289,766.23 per unit)
Eastern Samar	18,563	120,021.01	2,227,950,000.00	75% of the Total Needs Requirement
Western Samar	1,050	300,000.00	315,000,000.00	NHA Recommendation
	44,398.00		9,647,786,000.00	

NHA Computation for Relocation

Projects/Activities	Per Unit (PhP)
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Land Acquisition	10,000.00
Land Development	55,000.00
Power and Water Connection	10,000.00
Housing Construction	220,000.00
Project Administration	5,000.00
Grand Total	300,000.00

Reconstruction and Recovery Framework

Housing assistance will be extended by the government to poorest and most vulnerable. As such, eligible individuals and households for repair/reconstruction assistance of damaged houses will be identified by the Department of Social Welfare and Development. The design and materials for the repair and construction of housing units should be made disaster-resilient to avoid similar incidents in the future. On the other hand, housing assistance can be augmented by the implementation of Cash for Work Program to augment the financial capacity for repair/reconstruction of damaged housing. Should relocation or resettlement is necessary, it will be the responsibility LGUs concerned to identify and provide the necessary sites. The national government shall assist in providing financial resources for the design and construction of dwellings as well as in identifying sources of livelihood to the relocated families to prevent them from returning to their original dwellings.

Policy Recommendations

The proposed blanket National No-Build Zone 40 meters from the shorelines should be subjected to thorough consultations among the national government agencies, LGUs and the affected population. A blanket 40-meter no-build-zone policy will be very costly to the national government and LGUs and may not be acceptable to the affected people especially the marginal fishermen without viable options. Moreover, DRRM-CCA concerns should be integrated in the formulation of housing resettlement projects and the Comprehensive Land Use Plan (CLUP) of LGUs.

Strategies for Recovery

In implementing the housing recovery program, the following strategies will be adopted.

- 1) Proper identification of beneficiaries for financial assistance shall be based on the DSWD final validated report of the affected population in coordination with the MDRRMCs. The DSWD can use their existing 4Ps program in the identifying the beneficiaries of the housing reconstruction.
- 2) LGU will provide the necessary relocation site and conduct information campaign on natural hazards including the dangers of storm surge, with the objective of educating the populace and to aid in the understanding of the need to relocate vulnerable families and to intensify social preparation.
- 3) Partnership with local and international development organizations will be strengthened and expanded.
- 4) The housing units shall be compliant with disaster-resilient standards and full resettlement area shall be gender sensitive.

Identification of Strategic Needs

- Housing:
 - A Post-Disaster Housing Assistance Strategy should be formulated and disseminated as soon as possible across all relevant government agencies (national to local), NGOs and development partners to ensure coherent approaches to housing assistance. It should take into consideration related international human rights such as rights to adequate housing, including Minimum Standards in Shelter, Settlement and Non-Food Items, protection against forced eviction, harassment and other threats to physical safety and well-being, the right of everyone to be protected against arbitrary displacement from their home or place of habitual residence for all, including the protection of human rights of the most vulnerable and encourage their participation in the design and implementation of shelter and settlement programmes wherever possible.
 - Community-led, owner-driven and self-recovery and reconstruction should be prioritized for recovery and reconstruction efforts. Technical support such as training on safer construction, access to rebuilding and repair materials (tools, CGI, timber, fixings) as well as salvaged materials is critical.
 - Displacement and dislocation should be avoided as much as possible. When resettlement is unavoidable, the resettlement site should be as close as possible to (existing and new) livelihood opportunities. Within this context, it is important to revisit the proposed National No-Build Zone policy on the following key points:
 - Blanket 40m No-Build Zone proposal versus unsafe zones identified as such through fine-grained hazard mapping and vulnerability assessments.
 - The Mines and Geosciences Bureau should conduct a per municipality assessment as to the hazard rating. Recommendations should then be furnished to the Municipal Planning Officer for comments before implementation.
 - For informal settlers living in the No-Built Zones, rental assistance (with a price ceiling) should be provided for them to find accommodation in the private market for a time period (1-2 years). This scheme could encourage housing supply from the entire real estate market (residential sector, hotel/motel, dormitory, etc.), and beneficiaries are given the choice vis-à-vis where to live.

REGION/PROVINCE	NUMBER of HOUSES			(1) DAMAGED			(2) LOSSES			(3) NEEDS				TOTAL
	Partially	Totally	TOTAL	Partially	Totally	TOTAL	Partially	Totally	TOTAL	Partially (Houses)	Partially (Amount)	Totally (Houses)	Totally (Amount)	
GRAND TOTAL	595,149.00	489,613.00	1,084,762.00	16,614,490,048.94	35,744,252,750.70	52,358,742,799.64	364,762,039.07	2,812,571,710.93	3,177,333,750.00	349,123.00	12,218,500,097.11	242,309.00	24,562,397,662.89	36,780,897,760.00
<i>Region IV-B</i>														
Northern Palawan	13,895	6,544	20,439	73,800,000.00	100,045,000.00	173,845,000.00		-	-				278,215,000.00	278,215,000.00
Sub-Total	13,895	6,544.00	20,439	73,800,000.00	100,045,000.00	173,845,000.00	-	-	-	-	-	-	278,215,000.00	278,215,000.00
<i>Region VI</i>														
Aklan	55,193	23,676	78,869	551,930,000.00	828,660,000.00	1,380,590,000.00	13,522,285.00	3,580,500.00	17,102,785.00	55,193	2,234,488,605.00	14,322	1,037,056,020.00	3,271,544,625.00
Antique	81,406	12,062	93,468	814,060,000.00	422,170,000.00	1,236,230,000.00	7,825,055.00	575,000.00	8,400,055.00	31,939	1,293,050,415.00	2,300	166,543,000.00	1,459,593,415.00
Capiz	75,206	80,842	156,048	752,060,000.00	2,829,470,000.00	3,581,530,000.00	18,425,470.00	17,211,500.00	35,636,970.00	75,206	3,044,714,910.00	68,846	4,985,138,860.00	8,029,853,770.00
Iloilo	81,046	77,217	158,263	810,460,000.00	2,702,595,000.00	3,513,055,000.00	19,856,270.00	11,401,000.00	31,257,270.00	81,046	3,281,147,310.00	45,604	3,302,185,640.00	6,583,332,950.00
Sub-Total	292,851	193,797.00	486,648	2,928,510,000.00	6,782,895,000.00	9,711,405,000.00	59,629,080.00	32,768,000.00	92,397,080.00	243,384	9,853,401,240.00	131,072	9,490,923,520.00	19,344,324,760.00
<i>Region VII</i>														
Northern Cebu	54,207	47,790	101,997	813,105,000.00	2,389,500,000.00	3,202,605,000.00		-	-	54,207	542,070,000.00	47,790	3,345,300,000.00	3,887,370,000.00
Sub-Total	54,207	47,790	101,997	813,105,000.00	2,389,500,000.00	3,202,605,000.00	-	-	-	54,207	542,070,000.00	47,790	3,345,300,000.00	3,887,370,000.00
<i>Region VIII</i>														
Biliran	14,572	5,140	19,712	29,144,000.00	28,504,847.00	57,648,847.00	-	-	-	14,572	72,860,000.00	5,140	79,330,000.00	152,190,000.00
Leyte	167,180	179,823	347,003	10,261,000,000.00	22,075,000,000.00	32,336,000,000.00			-			12,000	3,600,000,000.00	3,600,000,000.00
Tacloban City	15,484	21,212	36,696	1,657,726,048.94	1,422,881,903.70	3,080,607,952.64		43,472,000.00	43,472,000.00			11,000	3,071,300,000.00	3,071,300,000.00
Southern Leyte	4,954	278	5,232	49,540,000.00	69,500,000.00	119,040,000.00	-	-	-	4,954	844,366,857.11	278	63,069,142.89	907,436,000.00
Eastern Samar	17,957	24,751	42,708	520,685,000.00	2,475,100,000.00	2,995,785,000.00	286,376,750.00	2,722,610,000.00	3,008,986,750.00	17,957	624,822,000.00	24,751	3,000,600,000.00	3,625,422,000.00
Western Samar	14,049	10,278	24,327	280,980,000.00	400,826,000.00	681,806,000.00	18,756,209.07	13,721,710.93	32,477,920.00	14,049	280,980,000.00	10,278	1,633,660,000.00	1,914,640,000.00
Sub-Total	234,196	241,482	475,678	12,799,075,048.94	26,471,812,750.70	39,270,887,799.64	305,132,959.07	2,779,803,710.93	3,084,936,670.00	51,532	1,823,028,857.11	63,447	11,447,959,142.89	13,270,988,000.00

2.3 Health

The Health Sub-Sector was also heavily affected during the typhoon, with the evacuees' physical and mental health degrading over time. Hospitals and other health service facilities were not spared by its onslaught. The delivery of health services and its access, especially to the most needing was impaired and delayed. Much needed resources such as drugs, medicines and other medical supplies were left scarce and its acquisition more difficult due to the isolation of the islands from the neighboring islands and mainland province. Isolated island barangays were left to tend to their own until roads and paths and the means of transport to them were cleared and made available. Health facility enhancement programs were placed to a halt, while funds for ongoing projects blew off together with the facility. Supplies from different neighboring provinces and other facilities were redirected to augment the current need in the affected municipalities.

Damage, Losses and Needs

Aside from the structures, damages in the health sector also include other medical equipment, medical supplies, furniture and office equipment like computers and duplicating machines. In terms of value, the damage to structural and non-structural health facilities in Region IV-B, specifically Culion Sanitarium and General Hospital, amounted to an outstanding PhP 5.8M in equipment including its ultrasound machine, X-ray machine, and blood chemistry analyzer, among others. Since these are newly procured equipment, the same amount is needed to replace these equipment in order to resume the hospital's normal operations.. Furthermore, facilities currently undergoing construction, enhancement and rehabilitation program were destroyed prior to completion.

In Region VI, the total amount of damage is PhP 32M. In Capiz, they have PhP 18M estimate on damage while Iloilo has Ph 14M; however, campaigns for prevention and control of environmental related diseases and conduct of psychosocial rehabilitation of affected persons and families, The recovery needs Capiz is PhP 78M while for Province of Iloilo is PhP 65M and for province of Antique is PhP 835K.

Region VII included structural damages brought by TY Yolanda, a total of 91 barangay health stations, 9 rural health units, 2 hospitals and other birthing facilities were damaged amounting to PhP 26.6M and reconstruction needs of PhP 41M. In general, though some health facilities were damaged, health services were still available during the wrath of Typhoon Yolanda.

In Region VIII, Tacloban City shared the largest damage amount of PhP 206M out of the total damage of PhP 367M. An estimated amount of PhP 546M is needed in reconstruction and recovery of health sector.

The losses incurred in the sector were from the unexpected expenses in providing for the immediate medical requirements of the affected population. Some medical facilities have spent on the cleaning up of the dirt after the floods, the removal of debris that disrupted access, etc. In all regions response efforts to ensure continuous operations of these health service facilities amounted to a total of PhP 145M. It should be noted, however, that not all of the medical facilities have reported unexpected expenses.

The needs of the health sector represent the amount required to normalize the health-related services across the affected regions. This will involve repair and reconstruction of damaged structures through the building back better principle, replacement of destroyed equipment, supplies and other materials.

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	5,865,000.00	4,327,265.28	5,865,000.00
Sub-total	5,865,000.00	4,327,265.28	5,865,000.00
Region VI			
1. Aklan	-	-	-
2. Antique	-	-	835,000.00
3. Capiz	18,000,000.00	-	78,000,000.00
4. Iloilo	14,000,000.00	-	65,246,839.00
Sub-total	32,000,000.00	-	144,081,839.00
Region VII			
1. Northern Cebu	26,672,286.00	250,000.00	41,180,000.00
Sub-total	26,672,286.00	250,000.00	41,180,000.00
Region VIII			
1. Biliran	-	1,398,300.00	1,817,790.00
2. Leyte	57,603,900.00	90,446,500.00	57,232,100.00
2.1. Tacloban City	206,043,917.00	9,463,410.00	247,252,700.00
3. Southern Leyte	-	-	-
4. Eastern Samar	35,693,703.84	39,263,074.22	42,833,444.61
5. Samar	3,180,691.00	542,500.00	5,754,898.30
Sub-total	302,522,211.84	141,113,784.22	354,890,932.91
TOTAL	367,059,497.84	145,691,049.50	546,017,771.91

Recovery Framework

The normalization of the health sector should be one of the priorities for recovery to avoid any deterioration of the physical and psychological well-being of the affected population especially the poor and the most vulnerable like women, children and the elderly. The following are the proposed policies and strategies for the recovery and reconstruction and of the health sector:

1. The repair and/or reconstruction of Completely Damaged Barangay Health Stations that serves far flung barangays as well as Rural Health Units will be prioritized to enable them continuously delivery health services.
2. The damaged or destroyed structures, critical equipment and supplies (like drugs and medicines) of major hospitals will be repaired or replaced to restore the level and quality of hospital functions and services.
3. To restore the well-being of the people, proper nutrition through supplemental feeding to identified SAM/MAM and micronutrient intervention will be implemented; advocacy and awareness on WASH will be intensified; and Mental Health and Psychosocial Services (MHPSS) will be promoted. The health sector will also cooperate and assist in whatever way in the rehabilitation of water sources in the typhoon-affected areas to restore

potable drinking water which is critical in restoring and maintaining proper health in the communities.

4. To prepare for future emergencies, the health sector will strengthen partnership and coordination among health workers from LGU at Provincial and Regional levels and conduct trainings on WASH, NIE and MHPSS while supporting continuous efforts and interventions on the same.
5. Continuous monitoring on post-disaster health issues and concerns (SPEED) will be undertaken including the monitoring and evaluation of on-going and future projects.

Recommendations

Based on the experience from typhoon Yolanda, the following are recommended for disaster preparedness:

1. Coordinate and cooperate with LGUs and other agencies to update and improve the Provincial, Municipal/City and Barangay Health Emergency Preparedness, Response and Recovery Plan.
2. Upgrade the capability of local health workers on Emergency Response concerns (SPEED, BLS/CPR, First Aid, WASH, NIE, MHPSS). The health sector should also coordinate and train if necessary, interested private sector groups engaged in emergency health services.
3. Participate in emergency drills organized by both government and non-governments institutions.

SUMMARY OF DAMAGES, LOSSES AND NEEDS OF THE SOCIAL SECTOR

DAMAGE

	Housing with Settlement	Health	Education	TOTAL
Region IV-B				
1. Northern Palawan	173,845,000.00	5,865,000.00	-	179,710,000.00
Sub-total	173,845,000.00	5,865,000.00	-	179,710,000.00
Region VI				
1. Aklan	1,380,590,000.00	-	8,953,450.00	1,389,543,450.00
2. Antique	1,236,230,000.00	-	1,789,905.00	1,238,019,905.00
3. Capiz	3,581,530,000.00	18,000,000.00	34,793,654.00	3,634,323,654.00
4. Iloilo	3,513,055,000.00	14,000,000.00	20,889,455.00	3,547,944,455.00
Sub-total	9,711,405,000.00	32,000,000.00	66,426,464.00	9,809,831,464.00
Region VII				
1. Northern Cebu	3,202,605,000.00	26,672,286.00	5,286,797.60	3,234,564,083.60
Sub-total	3,202,605,000.00	26,672,286.00	5,286,797.60	3,234,564,083.60
Region VIII				
1. Biliran	57,648,847.00	-	-	57,648,847.00
2. Leyte	32,336,000,000.00	57,603,900.00	2,153,759,860.00	34,547,363,760.00
2.1. Tacloban City	3,080,607,952.54	206,043,917.00	99,550,321.71	3,386,202,191.25
3. Southern Leyte	119,040,000.00	-	-	119,040,000.00
4. Eastern Samar	2,995,785,000.00	35,693,703.84	60,000,000.00	3,091,478,703.84
5. Samar	681,806,000.00	3,180,691.00	-	684,986,691.00
Sub-total	39,270,887,799.54	302,522,211.84	2,313,310,181.71	41,886,720,193.09
TOTAL	52,358,742,799.54	367,059,497.84	2,385,023,443.31	55,110,825,740.69

LOSSES

SOCIAL SECTOR	Housing with Settlement	Health	Education	TOTAL
Region IV-B				
1. Northern Palawan	-	4,327,265.28	1,587,000.00	5,914,265.28
Sub-total	-	4,327,265.28	1,587,000.00	5,914,265.28
Region VI				
1. Aklan	17,102,785.00	-	10,050,880.00	27,153,665.00
2. Antique	8,400,055.00	-	8,636,120.00	17,036,175.00
3. Capiz	35,636,970.00	-	30,096,520.00	65,733,490.00
4. Iloilo	31,257,270.00	-	34,411,200.00	65,668,470.00
Sub-total	92,397,080.00	-	83,194,720.00	175,591,800.00
Region VII				
1. Northern Cebu	-	250,000.00	-	250,000.00
Sub-total	-	250,000.00	-	250,000.00
Region VIII				
1. Biliran	-	1,398,300.00	-	1,398,300.00
2. Leyte	-	90,446,500.00	2,488,409,039.00	2,578,855,539.00
2.1. Tacloban City	43,472,000.00	9,463,410.00	257,571,091.05	310,506,501.05
3. Southern Leyte	-	-	-	-
4. Eastern Samar	3,008,986,750.00	39,263,074.22	66,000,000.00	3,114,249,824.22
5. Samar	32,477,920.00	542,500.00	-	33,020,420.00
Sub-total	3,084,936,670.00	141,113,784.22	2,811,980,130.05	6,038,030,584.27
TOTAL	3,177,333,750.00	145,691,049.50	2,896,761,850.05	6,219,786,649.55

NEEDS

SOCIAL SECTOR	Housing with Settlement	Health	Education	TOTAL
<i>Region IV-B</i>				
1. Northern Palawan	278,215,000.00	5,865,000.00	1,587,000.00	285,667,000.00
<i>Sub-total</i>	278,215,000.00	5,865,000.00	1,587,000.00	285,667,000.00
<i>Region VI</i>				
1. Aklan	3,271,544,625.00	-	4,819,584.00	3,276,364,209.00
2. Antique	1,459,593,415.00	835,000.00	3,584,038.00	1,464,012,453.00
3. Capiz	8,029,853,770.00	78,000,000.00	45,348,548.00	8,153,202,318.00
4. Iloilo	6,583,332,950.00	65,246,839.00	48,135,728.00	6,696,715,517.00
<i>Sub-total</i>	19,344,324,760.00	144,081,839.00	101,887,898.00	19,590,294,497.00
<i>Region VII</i>				
1. Northern Cebu	3,887,370,000.00	41,180,000.00	6,872,836.88	3,935,422,836.88
<i>Sub-total</i>	3,887,370,000.00	41,180,000.00	6,872,836.88	3,935,422,836.88
<i>Region VIII</i>				
1. Biliran	152,190,000.00	1,817,790.00	-	154,007,790.00
2. Leyte	3,600,000,000.00	57,232,100.00	5,345,726,065.00	9,002,958,165.00
2.1. Tacloban City	3,071,300,000.00	247,252,700.00	126,527,355.54	3,445,080,055.54
3. Southern Leyte	907,436,000.00	-	-	907,436,000.00
4. Eastern Samar	3,625,422,000.00	42,833,444.61	72,000,000.00	3,740,255,444.61
5. Samar	1,914,640,000.00	5,754,898.30	-	1,920,394,898.30
<i>Sub-total</i>	13,270,988,000.00	354,890,932.91	5,544,253,420.54	19,170,132,353.45
<i>TOTAL</i>	36,780,897,760.00	546,017,771.91	5,654,601,155.42	42,981,516,687.33

3. Productive Sector

3.1 Agriculture

This section identifies the damage and losses in the agriculture and fisheries sector, and the corresponding strategies consistent with the build back better approach. Damage, losses and needs are accounted for according to crops, livestock, fisheries, and agriculture infrastructure, and according to the four regions most affected by Typhoon Yolanda. The corresponding recovery and reconstruction needs are also presented as operational strategies to be implemented within a short-term (up to one year after the typhoon), medium-term (up to three years) and long-term timeframe. Institutional and operational recommendations are put forward to complement the overall recovery and reconstruction framework.

Impacts

Damage and losses in the agriculture and fisheries sectors expose affected communities and population to social vulnerabilities, especially on livelihood and food security.

In the agriculture sector, coconut farmers whose standing trees were felled by the typhoon are the worst affected. Subsequently, indirect employment of agriculture laborers engaged in coconut harvesting are also affected. Alternative sources of livelihood and food sources are needed in the next five to seven years as replanted coconut seedlings grow and reach their productive stage. This impact is most significant in Region VIII (Eastern Visayas), which is the second largest coconut producing region in the country.

Rice farmers incurred damages in terms of farm animals, tools, equipment and rice seeds and seedlings. The typhoon struck after the harvest season and right before the planting season, which wiped out rice seedlings, and rice in storage for household consumption and selling.

In the fisheries sector, physical assets such as boats and fishing gears and equipment including hooks, nets, fish drying trays were either damaged or lost. Coping mechanism of the affected population should be monitored, including frequency and diversity of food intake, reliance on food aid, taking on credit and the corresponding amount, selling of assets, and migration, and sources of income and employment patterns.

Damages and Losses

Regional Level

In terms of spatial coverage, the PDNA covered a total of four (4) regions with at least eleven (11) provinces. As of February 2014, consolidated data from the PDNA team indicate that the value of damages and losses to the Agriculture and Fisheries Sector stands at PhP 18.8B and PhP 24.6B respectively.

Among the four covered regions, Region VIII was the most heavily hit with damages and losses to agriculture and fisheries amounting to PhP 16.2B. Among the areas covered include Tacloban City, Leyte, Eastern Samar, Western Samar, Southern Leyte and Biliran.

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	97,623,360.20	266,615,471.00	197,656,628.00
Sub-total	97,623,360.20	266,615,471.00	197,656,628.00
Region VI			
1. Aklan	388,191,953.25	782,408,232.25	904,942,470.33
2. Antique	157,052,749.14	212,042,444.56	188,419,719.65
3. Capiz	106,154,554.10	1,261,174,602.88	1,361,353,542.79
4. Iloilo	514,634,812.60	1,359,141,456.63	1,312,683,891.95
Sub-total	1,166,034,069.09	3,614,766,736.32	3,767,399,624.72
Region VII			
1. Northern Cebu	1,323,075,174.19	2,256,999,003.57	1,725,167,070.80
Sub-total	1,323,075,174.19	2,256,999,003.57	1,725,167,070.80
Region VIII			
1. Biliran	168,022,217.00	230,124,382.00	401,393,599.00
2. Leyte	11,871,291,528.00	16,181,819,716.00	13,671,372,044.00
2.1. Tacloban City	164,530,000.00	447,480,000.00	189,910,000.00
3. Southern Leyte	41,704,170.00	94,744,000.00	38,996,970.00
4. Eastern Samar	871,904,113.56	1,439,324,195.84	1,494,609,551.00
5. Samar	3,147,666,333.60	50,584,968.29	1,559,202,225.00
Sub-total	16,265,118,362.16	18,444,077,262.13	17,355,484,389.00
TOTAL	18,851,850,965.64	24,582,458,473.02	23,045,707,712.52

Recovery and Reconstruction Framework

The main objective of the recovery and reconstruction efforts in agriculture is to restore to normalcy the productive capacity of the sector in the affected areas as soon as possible. This is intended to avert the further deterioration of the poverty situation in the areas and aggravating the social conditions of the people especially the most vulnerable. The following were considered in the determination of the recovery and reconstruction programs and projects:

1. Without external support, it will be very difficult for the affected farmers and fisher folks, which are mostly marginal growers, to restart their production. Also, without outside assistance, agricultural growers may be exposed to onerous sources of credit.
2. Food supply in and out of the affected areas must be stabilized to avoid further problems like inflation, deterioration of health and nutrition conditions of the poor, etc.
3. Affected growers may be exploited in terms of the pricing of farm inputs as well as the cost of post harvest facilities if there will be outside intervention.
4. Other industries which are dependent on agricultural products may experience a slowdown in production if supply of inputs will not recover as soon as possible.
5. Mitigation programs and projects will be identified to ensure that the vulnerabilities and risks to similar disasters of farmers and existing infrastructure assets are significantly prevented or minimized.

In the short-term, interventions for the agriculture sector shall focus on the two (2) key result areas: i) recovery of livelihood and production capacities of farmers and fisherfolk, and ii) repair and reconstruction of damaged infrastructure.

Immediate funding and implementation of the proposed rehabilitation programs and activities should be prioritized by the government. Recovery for the agriculture sector will involve programs

on production support like giving of fuel subsidies for farm machineries, cash for work programs for clearing of production areas and establishment of prioritized crops, distribution of seeds, farm tools and machineries, distribution of planting materials and farm inputs, dispersal of farm animals, distribution of drugs and biologics for livestock and poultry, and establishment of seedling nurseries. For the fisheries sub-sector, repair and/or replacement of fishing assets such as *bancas*, fishing gears, and nets should be implemented. The potential of aquaculture such as seaweed farming as a means to livelihood and subsequently income diversification should also be explored as a recovery strategy. (livelihood support for marginal fisher folks and other programs which could help the sector in its fast recovery.) Reconstruction of major agriculture support facilities like irrigation, slaughterhouse, greenhouse and post-harvest facilities should also be prioritized.

Short, medium and long term strategies

Damages on agricultural assets, standing crops and trees and loss of livestock and poultry livelihood of smallholder farmers and fisherfolks increases their vulnerability as a result of foregone income losses and food source. Short-term measures (up to one year after the Typhoon Yolanda) are recommended for implementation as a stopgap measure for the expected reduced income and as food security measure.

Majority of agriculture strategies need to be implemented in the short-term for the immediate re-establishment of the productive base:

- Cash-for-work schemes and insurance premium for emergency employment to carry out agriculture activities such as land clearing, planting, and fertilizer application
- Distribution of coconut seedlings, rice seeds, corn seeds and inputs
- Distribution of vegetables and tubers
- Distribution of farm tools and machineries
- Establishment of nurseries, rain shelter, and greenhouse with drip irrigation
- Rehabilitation of silo
- Restocking of animals and provision of animal care for livestock and poultry, including drugs and biologics
- Provision of poultry facilities such as egg machine housing and incubators for egg hatching
- Insurance for coconut sector

Medium-term strategies additional production support

- Rehabilitation of post-harvest facilities such as palay shed, flatbed dryers and communal corn dryers
- Distribution of chicken and ducks
- Coconut replanting and intercropping

Long-term strategies

- Disaster risk and reduction management plan for the agriculture sector
- Research and development on drought and flood-resistant rice varieties

Recommendations to complement the recovery and reconstruction:

- Short term concessional finance, including financial counseling through Landbank of the Philippines
- Skills training in different agricultural trades supported by studies with the technical support of Agricultural Training Institute
- Establishment and/or strengthening of fisheries registration system to monitor fishing activities and as baseline information for coastal resource management
- Assessment of emergency response to identify gaps and inform transition into recovery and reconstruction

3.2 Industry, Trade and Services

Typhoon Haiyan affected the sub-sectors of mining and quarrying; manufacturing; construction; wholesale and retail; restaurants and real estate. The urban areas of the four Regions were mostly affected. However, not full information was readily available due to the fact that most of those in the sector are privately-owned and/or belonging to the informal sector. Nevertheless, efforts were exerted to come up with the estimates of damages and losses during the PDNA process. Most of the estimates are on physical damages. Although income losses were experienced by the firms in this sector, their values were not readily available.

Damage, Losses and Needs

Under the ITS, reported damages and losses amounted to PhP 2.8B and PhP 4.6B, respectively. The amount of damages has been arrived through calculating the damages to structures, machineries/equipment and inventories in the manufacturing, trading and service sectors; while losses represents foregone income, expenses in clearing and cleaning debris and additional operating costs as a result of the typhoon.

A total of PhP 1.3B is needed to undertake the reconstruction and recovery of the sector. During the assessment, findings indicate that financial and technical assistance are being requested by those affected. Priority PPAs identified for this sector includes the following:

- Backward Linkaging/ Raw Material Sourcing for Manufacturing Sector
- Market promotion
- Productivity/ technology enhancement
- Regulatory Compliance Program

	Damage	Losses	Needs
Region IV-B			
1. Northern Palawan	1,621,875.00	1,716,000.00	3,364,125.00
Sub-total	1,621,875.00	1,716,000.00	3,364,125.00
Region VI			
1. Aklan	26,100,015.25	-	27,150,000.00
2. Antique	22,430,476.25	12532750	34,000,000.00
3. Capiz	65,663,578.50	-	40,000,000.00
4. Iloilo	85,810,648.00	165,500,142.00	398,850,000.00
Sub-total	200,004,718.00	178,032,892.00	500,000,000.00
Region VII			
1. Northern Cebu	202,327,278.00	197,536,329.00	480,369,000.00
Sub-total	202,327,278.00	197,536,329.00	480,369,000.00
Region VIII			
1. Biliran	4,320,900.00	4,408,500.00	-
2. Leyte	1,164,580,000.00	947,050,000.00	-
2.1. Tacloban City	546,910,000.00	2,959,060,000.00	-
3. Southern Leyte	-	-	-
4. Eastern Samar	632,302,000.00	105,860,000.00	135,500,000.00
5. Samar	103,409,900.00	260,820,632.00	190,000,000.00
Sub-total	2,451,522,800.00	4,277,199,132.00	325,500,000.00
TOTAL	2,855,476,671.00	4,654,484,353.00	1,309,233,125.00

Recovery and Reconstruction Framework

The primary purpose of recovery and reconstruction in the sector is to enable the affected private sector to regain their normal productive capacity areas as soon as possible. The following were considered in the determination of the recovery and reconstruction programs and projects:

1. The affected businesses are private in nature, government assistance will not be extended as direct subsidy.
2. Affected micro entrepreneurs in the informal sector who are mostly marginal can be given the option to engage in other types of livelihood through training and other related services.
3. Assistance to affected small and medium business in the formal sector can be extended assistance through credit facilitation.

3.3 Tourism

For tourism, reported damages and losses amounted to PhP 46M (PhP 31M for Northern Palawan and PhP 15M for Tacloban City) and PhP 30M (PhP 9M for Northern Palawan and PhP 21M for Tacloban City), respectively. An amount of PhP 76M (PhP 42M for Northern Palawan and PhP 34M in Tacloban City) is needed for reconstruction and recovery.

Recovery and Reconstruction Framework

For the Tourism Sector, the following are being proposed as policies and initiatives:

- Adherence to the 40 meters no build zone.
- Observance to the National Accommodation Standards.
- Access to financing institutions with low interest rate.
- Providing grace period on payments of existing loans and waiver of interest rates.
- Conceptualize new tourism products and conduct aggressive marketing activities

3.4 Mining

Under the Mining Sector, reported damages and losses amounted to PhP 80M and PhP 263M in Leyte Province, respectively. It is important to note that these values only came from Leyte and there are no reported damages and losses for other covered regions.

SUMMARY OF DAMAGES, LOSSES AND NEEDS OF THE PRODUCTIVE SECTOR

DAMAGE

	Agriculture & Fisheries	Trade, Industry and Services	Tourism	Mining	TOTAL
Region IV-B					
1. Northern Palawan	97,623,360.20	1,621,875.00	31,000,700.00	-	130,245,935.20
Sub-total	97,623,360.20	1,621,875.00	31,000,700.00	-	130,245,935.20
Region VI					
1. Aklan	388,191,953.25	26,100,015.25	-	-	414,291,968.50
2. Antique	157,052,749.14	22,430,476.25	-	-	179,483,225.39
3. Capiz	106,154,554.10	65,663,578.50	-	-	171,818,132.60
4. Iloilo	514,634,812.60	85,810,648.00	-	-	600,445,460.60
Sub-total	1,166,034,069.09	200,004,718.00	-	-	1,366,038,787.09
Region VII					
1. Northern Cebu	1,323,075,174.19	202,327,278.00	-	-	1,525,402,452.19
Sub-total	1,323,075,174.19	202,327,278.00	-	-	1,525,402,452.19
Region VIII					
1. Biliran	168,022,217.00	4,320,900.00	-	-	172,343,117.00
2. Leyte	11,871,291,528.00	1,164,580,000.00	-	80,173,468.45	13,116,044,996.45
2.1. Tacloban City	164,530,000.00	546,910,000.00	15,121,170.00	-	726,561,170.00
3. Southern Leyte	41,704,170.00	-	-	-	41,704,170.00
4. Eastern Samar	871,904,113.56	632,302,000.00	-	-	1,504,206,113.56
5. Samar	3,147,666,333.60	103,409,900.00	-	-	3,251,076,233.60
Sub-total	16,265,118,362.16	2,451,522,800.00	15,121,170.00	80,173,468.45	18,811,935,800.61
TOTAL	18,851,850,965.64	2,855,476,671.00	46,121,870.00	80,173,468.45	21,833,622,975.09

LOSSES

	Agriculture & Fisheries	Trade, Industry and Services	Tourism	Mining	TOTAL
Region IV-B					
1. Northern Palawan	266,615,471.00	1,716,000.00	9,205,000.00	-	277,536,471.00
Sub-total	266,615,471.00	1,716,000.00	9,205,000.00	-	277,536,471.00
Region VI					
1. Aklan	782,408,232.25	-	-	-	782,408,232.25
2. Antique	212,042,444.56	12,532,750.00	-	-	224,575,194.56
3. Capiz	1,261,174,602.88	0.00	-	-	1,261,174,602.88
4. Iloilo	1,359,141,456.63	165,500,142.00	-	-	1,524,641,598.63
Sub-total	3,614,766,736.32	178,032,892.00	-	-	3,792,799,628.32
Region VII					
1. Northern Cebu	2,256,999,003.57	197,536,329.00	-	-	2,454,535,332.57
Sub-total	2,256,999,003.57	197,536,329.00	-	-	2,454,535,332.57
Region VIII					
1. Biliran	230,124,382.00	4,408,500.00	-	-	234,532,882.00
2. Leyte	16,181,819,716.00	947,050,000.00	-	263,432,365.50	17,392,302,081.50
2.1. Tacloban City	447,480,000.00	2,959,060,000.00	21,328,300.00	-	3,427,868,300.00
3. Southern Leyte	94,744,000.00	-	-	-	94,744,000.00
4. Eastern Samar	1,439,324,195.84	105,860,000.00	-	-	1,545,184,195.84
5. Samar	50,584,968.29	260,820,632.00	-	-	311,405,600.29
Sub-total	18,444,077,262.13	4,277,199,132.00	21,328,300.00	263,432,365.50	23,006,037,059.63
TOTAL	24,582,458,473.02	4,654,484,353.00	30,533,300.00	263,432,365.50	29,530,908,491.52

NEEDS

Productive Sector Needs per Region/Province	Agriculture & Fisheries	Trade, Industry and Services	Tourism	Mining	TOTAL
Region IV-B					
1. Northern Palawan	197,656,628.00	3,364,125.00	42,155,000.00	-	243,175,753.00
Sub-total	197,656,628.00	3,364,125.00	42,155,000.00	-	243,175,753.00
Region VI					
1. Aklan	904,942,470.33	27,150,000.00	-	-	932,092,470.33
2. Antique	188,419,719.65	34,000,000.00	-	-	222,419,719.65
3. Capiz	1,361,353,542.79	40,000,000.00	-	-	1,401,353,542.79
4. Iloilo	1,312,683,891.95	398,850,000.00	-	-	1,711,533,891.95
Sub-total	3,767,399,624.72	500,000,000.00	-	-	4,267,399,624.72
Region VII					
1. Northern Cebu	1,725,167,070.80	480,369,000.00	-	-	2,205,536,070.80
Sub-total	1,725,167,070.80	480,369,000.00	-	-	2,205,536,070.80
Region VIII					
1. Biliran	401,393,599.00	-	-	-	401,393,599.00
2. Leyte	13,671,372,044.00	-	-	-	13,671,372,044.00
2.1. Tacloban City	189,910,000.00	-	34,069,926.00	-	223,979,926.00
3. Southern Leyte	38,996,970.00	-	-	-	38,996,970.00
4. Eastern Samar	1,494,609,551.00	135,500,000.00	-	-	1,630,109,551.00
5. Samar	1,559,202,225.00	190,000,000.00	-	-	1,749,202,225.00
Sub-total	17,355,484,389.00	325,500,000.00	34,069,926.00	-	17,715,054,315.00
TOTAL	23,045,707,712.52	1,309,233,125.00	76,224,926.00	-	24,431,165,763.52

4. Cross-Sectoral

4.1 Macroeconomic Assessment²

National Macroeconomic Assessment

The remarkable performance of the national economy is supported by strong macroeconomic fundamentals, marked by low and stable inflation, favorable interest rates, sustainable fiscal and external positions, and stable financial sector. The Philippine economy is thus positioned in a higher growth trajectory with increasing contribution of the manufacturing sector, higher value agricultural products, infrastructure investment, and rebound of export.

Additionally, the debt obligations of the country are effectively managed; amortization is spread out over the long-term, and interest payments-to-revenue and interest payments-to-expenditure ratios are on downtrend. The domestic economy appears to be resilient, vibrant and is ready to cushion shocks both internally and externally.

Despite the devastation brought about by the series of natural disasters that hit the country in the last quarter of 2013, most notably the earthquake in Bohol and typhoon Yolanda (Haiyan), the country's Gross Domestic Product (GDP) grew by 6.5 percent in the fourth quarter of 2013. The Services sector, particularly, Trade and Real Estate, Renting & Business Activities, and the accelerated performance of Manufacturing, paved the way for the annual GDP growth of 7.2 percent.

Meanwhile, on an annual basis, Gross National Income (GNI) grew by 7.5 percent in 2013 from 6.5 percent the previous year, the highest since the 8.5 percent growth posted in year 2003. Net Primary Income (NPI) from Rest of the World (ROW) has grown by 9.4 percent in 2013 from 4.8 percent in 2012. With the robust economic growth in 2013, per capita GDP accelerated to 5.4 percent from 5.0 percent in 2012. Likewise, per capita GNI grew in 2013 by 5.8 percent from 4.7 percent in the previous year.

a) Gross Regional Domestic Product (GRDP)

Pre-Disaster Situation

There are four (4) regions largely affected by Typhoon Yolanda. Altogether, they have a total population of 21.382 million in 2012, or roughly about 14.2 percent of the total Philippine population. These regions account for 14.2 percent of GDP in 2012. The hardest hit is Eastern Visayas, which constitutes about 4.4 percent of the national population, and 2.2 percent of the GDP.

Population and Economy, at 2012 (current Prices)

Region	Population ('000)	Share of Population to Philippines (%)	GRDP/GDP (PhP'000)	Share to GDP (%)
IV-B	2,841	3.0	180,176,260	1.7

²Based on the figures gathered during the national write-up on Typhoon Yolanda Post-Disaster Needs Assessment on 5-7 March, 2014.

VI	7,296	7.6	421,697,041	4.0
VII	7,037	7.3	666,214,225	6.3
VIII	4,208	4.4	228,211,743	2.2
Affected Areas	21,382	22.3	1,496,299,269	14.2
Philippines	95,771	100.0	10,564,886,498	100.0

Source: NSCB, Regional Accounts of the Philippines

The affected regions account for 20.3 percent of agriculture, 14.2 percent of industry, and 12.9 percent of Services of the total national output of economy in 2012. Region VIII contributes 4.0 percent, 2.7 percent and 1.5 percent of the national sectoral output on Agriculture, Industry, and Services, respectively.

Regional and Sectoral Share to National Output, at current 2012 prices

Region	Agriculture	Industry	Services
IV-B	3.6	2.0	1.2
VI	8.7	2.3	3.9
VII	4.0	7.2	6.3
VIII	4.0	2.7	1.5
Affected Areas	20.3	14.2	12.9
Philippines	100.0	100.0	100.0

Source of basic data: NSCB, Regional Accounts of the Philippines

Of the affected regional economies, Agriculture accounts for 17 percent, followed by Industry at 31 percent, and Services at 51.9 percent.

Regional Distribution by Sector, at 2012 current prices

Region	Agriculture	Industry	Services
IV-B	25.0	36.2	38.8
VI	25.8	17.9	56.3
VII	7.5	35.3	57.2
VIII	21.8	38.6	39.6
Affected Areas	17.0	31.0	52.0
Philippines	11.8	31.1	57.1

Source of basic data: NSCB, Regional Accounts of the Philippines

The aggregated GRDP of the affected regions expanded by 5.4 percent in 2011-2012. However, the GRDP of Eastern Visayas (Region VIII) contracted by 6.2 percent in 2011-2012. Overall, the contribution of the affected regions to national growth is 0.8 percentage points out of the 6.8 GDP growths in 2012. Sectoral growth per region is shown on the following table:

GDP/GRDP Growth Rate Per Sector, 2011-2012, at 2000 constant prices

Region	GDP/GRDP	Agriculture	Industry	Services
IV-B	4.2	-0.3	4.8	6.8
VI	7.5	-0.1	19.9	7.6
VII	9.3	-0.6	10.9	9.6
VIII	-6.2	-3.0	-18.5	7.5
Major Affected Areas	5.4	-0.01	4.1	7.8
Philippines	6.8	2.8	6.8	7.6

Source: NSCB, Regional Accounts of the Philippines

In terms of the contribution of each region to national and sectoral growth in 2011-2012, industry and services have positive share, except for the industry sector of Region VIII.

Contribution to Growth of GDP Per Sector, 2011-2012 at 2012 constant 2000 prices

Region	Contribution	Agriculture	Industry	Services
IV-B	0.1	-0.01	0.09	0.08
VI	0.3	-0.01	0.40	0.32
VII	0.6	-0.03	0.76	0.59
VIII	-0.2	-0.15	-0.66	0.12
Affected Areas	0.8	-0.2	0.59	0.11
Philippines	6.8	2.81	6.83	7.62

Source of basic data: NSCB, Regional Accounts of the Philippines

Post-Disaster Assessment

Based on the PDNA results, typhoon Yolanda has resulted in total economic losses of PhP42.7 billion, representing an estimated 0.34 percent of Gross Domestic Product (GDP). Eastern Visayas (Region VIII) bore the highest amount of losses, estimated at around PhP 35.5 billion. Central Visayas (Region VII) has PhP 2.5 billion; Western Visayas (Region VI) has PhP 4.3 billion and MIMAROPA (Region IV-B) has PhP 0.351 billion. The National Economic and Development Authority (NEDA) initially estimates that this may have impacted the GDP by anywhere from 0.66% to 3% of GDP. The GDP growth for 2013 could have been 7.4% instead of 7.2%.

NEDA projects that the negative impact of Yolanda may linger in 2014 but reconstruction efforts are expected to speed up recovery. The impact of reconstruction spending on inflation rate, T-bill rate not significant. Inflation is expected to have a +0.01 percentage points increase while Treasury Bill rate is estimated to rise by 0.04 percentage points. The impact on deficit-to-GDP ratio is estimated to increase by 0.5 percentage points.

For the succeeding years, the NEDA estimates that positive GDP growth will still continue although there is a possibility that agriculture may decline in 2014.

Projected GDP Growth Rate, 2014-2016

Indicator	Baseline (2012)	Annual Plan Targets		
		2014	2015	2016
Gross Domestic Product (%)	6.8	6.5 -7.5	7.0-8.0	7.5-8.5
GVA in agriculture, hunting, fishery and forestry	2.8	(0.9)-0.1	2.0-3.0	2.5-3.5
GVA in industry	6.8	9.8-11.0	8.6-9.7	9.3-10.3
GVA in services	7.6	6.0-6.9	6.8-7.8	7.2-8.1

Source: NEDA Assessment, 2014 PDNA

b) Labor and Employment

Pre-Disaster Situation

In July 2013, prior to Typhoon Yolanda, the working-age population (aged 15 years old and over) in the four most affected regions (IV-B, VI, VII, VIII) was estimated at 15.0 million. Out

of this number, approximately 9.6 million were in the labor force, registering a labor force participation rate of 63.9 per cent. With a labor force of 3.2 million in both Regions VI and VII, they account for 66.6 per cent of the total labor force in the four regions. Some 9.0 million people were employed in the four regions, while 0.6 million were unemployed, representing an unemployment rate of 6.2 per cent.

The underemployment rate in the four regions was 20.0 per cent, with 1.8 million individuals seeking additional hours of work or an additional job. Among the four regions, Region VI had the highest unemployment rate (7.5 per cent) while Region IV-B had the lowest unemployment rate (3.9 per cent) and Region VIII had the highest incidence of underemployment (29.0 per cent) while Region VII had the lowest underemployment rate (12.2 per cent).

Key Labour Market Indicators, prior to Typhoon Haiyan (in thousands)

	IV-B	VI	VII	VIII	TOTAL
Working-age population (15+)	1,955	5,182	4,900	3,010	15,047
Labor force	1,296	3,205	3,201	1,914	9,616
Employed	1,246	2,964	2,992	1,819	9,021
Underemployed	243	666	365	528	1,802
Unemployed	50	241	209	95	595
Vulnerable employment	592	1,136	1,203	849	3,780
Labor force participation rate (%)	66.3	61.8	65.3	63.6	63.9
Employment rate (%)	96.1	92.5	93.5	95	93.8
Underemployment rate (%)	19.5	22.5	12.2	29	20
Unemployment rate (%)	3.9	7.5	6.5	5	6.2
Vulnerable employment rate (%)	49	37.9	41.5	48.1	42.6

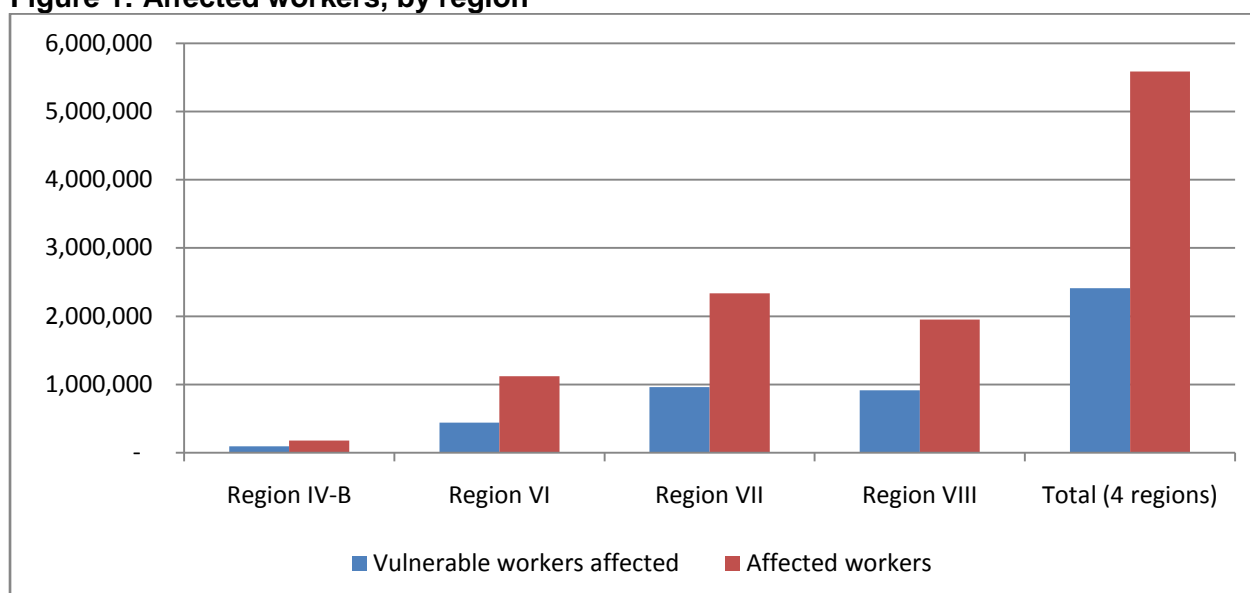
Source: All data based on Philippines Labor Force Survey, July 2013, except vulnerable employment and vulnerable employment rate, which are based on the Labor Force Survey, October 2012.

Post-Disaster Assessment

Information gathered indicates a large impact of Typhoon Haiyan on workers and livelihoods in the four regions. In Region VIII, an assessment by the Department of Agriculture for example indicated some 1.28 million farmers and fisherfolks have been affected in the region. Furthermore, a rapid assessment report of the Department of Labor and Employment (DOLE) Regional Office VIII covering the non-agricultural sector (services and industry) indicates that some 3,210 workers have lost their jobs permanently as a result of the shutdown of the business establishment or retrenchment. These permanent job losses have taken place in Leyte and Tacloban City and most were employed in distributorship and manufacturing businesses.

The above findings also support other available assessments. An ILO impact assessment indicates that some 5.6 million workers, 60% men and 40% women, in the four regions are estimated to have had their livelihoods impacted temporarily or permanently (see Figure 1). This represents over 60 per cent of total employment in the four regions. Amongst the total number of workers affected, an estimated 2.4 million vulnerable workers, or 42.9 per cent of affected workers, were either self-employed or unpaid family workers. Among the four regions, Region VII is estimated to have both the largest number of workers and largest number of vulnerable workers affected.

Figure 1: Affected workers, by region



Source: ILO estimates derived from the DSWD-DROMIC Report No. 100, 1 December 2013 and Labor Force Survey October 2012.

c) Inflation

Based on a year-on-year analysis, the movement of prices across the affected regions may not seem to be worrying, except for Eastern Visayas (Region VIII). The inflation in Eastern Visayas registered average 7.8 percent inflation from January to February 2014, which is 3.6 percentage points higher than the national average inflation. However, it has been noted on the ground that in the most affected city of Tacloban, the prices of some prime commodities have gone up. There are reports that in some areas of Tacloban City, the prices of some food items and fuel are exorbitant. To contain prices on a manageable level, food production must be initiated across the affected areas, especially for Region VIII. When food rations from the government and foreign donors begin to taper off, the agriculture sector of these regions must be able to provide enough quantity of food items in the market.

Regional Inflation

Region	Inflation rate (%)		
	2012	2013	Jan-Feb 2014
Philippines	3.2	3.0	4.2
Region 4-B	3.1	2.5	3.6
Region VI	4.1	3.8	4.6
Region VII	5.4	4.7	4.7
Region VIII	3.0	4.3	7.8

Source: Philippine Statistical Authority

d) Fiscal Impact

Although the government has spent millions of pesos for the emergency relief as an aftermath of typhoon Yolanda, the impact on tax collection in the affected areas has not been discouraging. Moreover, the inflow of foreign currency from overseas Filipinos has helped in averting substantial decline in the value of the national currency.

i. Tax Collection

Typhoon Yolanda has not significantly impacted on the revenue generation efforts of the government as reported by the Bureau of Internal Revenue. There was still an increase in taxes collected in the affected regions despite typhoon Yolanda.

Revenues Collected in the Affected Regions, 2012 and 2013

Region	Revenues (PHP Billion)	
	2012	2013
4-B Southern Tagalog	2.78	1.62 (1 st Semester)
VI Western Visayas	6.49	7.27
VII Central Visayas	14.95	17.3
VIII Eastern Visayas	4.75	5.02

Source: The Bureau of Internal Revenue as contained in the regional PDNA reports.

ii. Remittance of Overseas Filipinos

The remittance of foreign currency from overseas Filipinos (OF) has consistently increased over the years. This phenomenon has always helped the country maintain its economic stability. Table below shows the value of remittance over the last four years.

Personal Remittance of Overseas Filipinos (in US\$ Million)

Month	Year			
	2010	2011	2012	2013
January	1,509	1,609	1,712	1,855
February	1,553	1,635	1,743	1,862
March	1,701	1,763	1,864	1,932
April	1,670	1,760	1,871	2,003
May	1,731	1,840	1,948	2,068
June	1,777	1,901	1,989	2,102
July	1,771	1,868	1,967	2,112
August	1,645	1,820	1,955	2,100
September	1,752	1,891	2,000	2,136
October	1,830	1,936	2,096	2,282
November	1,768	1,942	2,087	2,286
December	1,856	1,959	2,120	2,386
TOTAL	20,563	21,922	23,352	25,124

Source: Bangko Sentral ng Pilipinas. (2013 figures are preliminary estimates)

It is noticeable that there were remarkable increases over the months of November and December in 2013, the first two months after Yolanda has struck. Nearly US\$ 2 billion were sent by overseas Filipinos to the country compared to the same month of the previous year. This phenomenon could be attributed to the numerous outpouring of cash donations coming from overseas Filipinos to those who were affected by the typhoon.

e) Other Macroeconomic Indicators

Based on the press releases of the economic agencies on February 2014, the following are the other economic statistics as of end 2013:

• Debt

According to the data of the Bureau of Treasury, the government's outstanding debt as percentage of GDP declined by 2.3 basis points, from 51.5% in 2012 to 49.2% in 2013. External debt ratio fell to 16.9% from the previous level of 18.6% while domestic debt ratio

fell to 32.3% from 32.8%. This debt-to-GDP ratio, which is closely monitored by international rating agencies, strengthened the GOP's position to settle its obligations. The goal of the administration is to reduce the debt ratio to below 45% by 2016 from a high 54.8% in 2009. In value terms, however, the debt of the national government increased by 4.5% year-on-year to PhP 5.681 trillion in 2013 from PhP 5.437 trillion due to higher domestic obligations. Of the total debt, 34% (PhP 1.948 trillion) was from foreign creditors while the remaining 66% (PhP 3.733 trillion) was sourced from domestic creditors.

- **Balance of Payments (BOP)**

The external accounts of the country, which have been coming from structural sources, has remained healthy despite the challenges in the global economy. Although there was a significant outflow of US\$ 1.6 billion in December 2013, the BOP surplus in the same year stood at US\$ 5.1 billion. This is the ninth year that a BOP surplus was posted.

- **Gross International Reserve (GIR)**

The GIR for 2013, which was US\$ 83.187 billion, fell short of the US\$ 87 billion target. This was due to the decreased valuation of gold and other assets such as the yen-denominated holdings against the US dollar. (The GIR target for 2014 of US\$ 88 billion will be subjected to review by April).

2104 and Beyond

The growth rates of the national economy are expected to be generally on track despite typhoon Yolanda, since there are no serious long-term impacts on the supply chain of the production capacity of the economy. However, the position of the national economy in terms of its debt, balance of payments, gross international reserve, among other indicators, will largely depend on the government decision on the financing strategies of the post-Yolanda reconstruction. If the government will decide to finance the reconstruction with foreign and loans or the government should raise taxes to accommodate any financial shortfall, the government will have to review and re-estimate the impacts of typhoon Yolanda on the macroeconomic indicators.

The reconstruction strategies and the corresponding re-estimation of economic indicators will be considered in detail in the post-Yolanda reconstruction planning activities.

4.2 Human Recovery Needs Assessment

The chapter assesses human and social impacts of typhoon Yolanda. As the typhoon has affected some of the poorest regions of the Philippines, its impact on households and communities would be long-term. A recovery and reconstruction programme needs to take into account their socio-economic vulnerabilities as expressed through a number of cross-cutting sectors, and implement them through direct transfer of assistance to the people.

The chapter presents the demographic and poverty profile of the disaster-affected areas. It reviews how the people responded to the disaster event and coped with its immediate impacts. It assesses the impacts on different sectors as experienced by the people, as compared to the impact on physical assets, and suggests various measures which need to be taken to support household and community recovery.

Methodology and Sources of Information

The HRNA was conducted by the regional PDNA teams in each of seven regions. Some of the regional teams collected information through administering a questionnaire, while other teams conducted the assessment through focus group discussions. A detailed household-level survey eliciting information on different aspects of human and social impacts was, however, not attempted. The regional teams also could not turn these assessments into systematic accounts of impacts. Despite these limitations, there has been enough evidence of the wider human and social impacts from the most affected regions. The chapter is based on the feedback and comments provided by a number of respondents on a range of issues, which included the distribution of immediate relief, experience of evacuation centres, coping strategies, impact on different aspect of their lives and livelihoods, and the need for recovery assistance.

A few other agencies conducted sector-specific surveys at the household and community level. The Assessment Capacities Project (ACAPS) has produced a Secondary Data Review (SDR) report on the basis of primary assessments conducted in a number of sectors. The HRNA chapter draws upon the SDR report in a significant way. In addition, the chapter also draws upon the Multi-Cluster Initial Rapid Assessment (MIRA I) conducted in November, 2013 and Multi-Cluster Needs Assessment (MIRA II) conducted in December, 2013. MIRA II was conducted to supplement the information obtained through MIRA I. While the MIRA I aimed to provide information about impacts at the community level, the second assessment aimed to better understand impacts at the household level.

Despite the information that is available through multiple sources, it must be said that a more comprehensive and systematic approach is needed to collect data on the needs and priorities of affected and vulnerable groups, including those related to gender, age, and disability. As the Secondary Data Review (SDR) prepared by the ACAPS has pointed out that there has been a serious lack of sex and age disaggregated data in most assessments combined with a lack of voice of vulnerable affected groups, including older persons, persons with disability, and indigenous groups. Without sex and age disaggregated data, it is impossible to adequately and appropriately plan and implement an effective and efficient gender, and rights based, humanitarian response. Further, there is a lack of data regarding the environmental impact of the typhoon in assessments and activity reports, and limited data relating to mainstreaming issues as protection and Gender Based Violence (GBV).

The chapter will convey peoples' experiences and expectations in the aftermath of typhoon Yolanda, which would make the recovery programme more responsive to households' and community's needs. The chapter includes information on the issues in certain sectors which affect the people severely, but are not really neatly quantifiable in physical terms. These sectors are environment, governance, and livelihoods—those important but invisible sectors which have a serious impact on peoples' lives.

Demographic Profile of the Disaster-affected Areas

Typhoon Yolanda has affected a large population of the Philippines, both in terms of percentage of the total population as well as the absolute number. Based on the 2010 population census, the total population of the Philippines is 92.3 million, but projections suggest this number rose to 98.9 million in December 2013. Total populations in Yolanda affected Regions IV-B Mimaropa, VI Western Visayas, VII Central Visayas, VIII Eastern Visayas and XIII Caraga together count for more than 23 million (or 25%) of the total population of the Philippines.³

Some of these regions such as Western Visayas (428 p/ km²) and Central Visayas (342 p/ km²) have a much higher density of population compared to the national average of population density (308 p/ km²). It implies that the risk exposure in these regions is much higher compared to the other regions of the country.

The disaster inflicted severe damages upon the rural and urban areas, as well as coastal areas and hinterland of the affected regions. In the urban areas, it affected tourism, trade, and informal sector employment, while in rural areas it damaged plantations, crops, and boats.

Poverty Profile of the Population

An estimated 14.12 million people are reported affected in the five regions, out of which 4.8 million are under the poverty threshold. The incidence of poverty is high in all the affected areas. However, it is particularly high in Region VIII, Eastern Visayas, where levels of poverty incidence by magnitude of population are the country's highest (45.6%) with the exception of Mindanao (ARMM). The other regions too which include Region IV-B, Mimaropa (33.4%), Region VII, Central Visayas (35.5%), and Region VI, Western Visayas (27.9%), score higher than the national average of 25%.⁴

ADB estimates an increase in national poverty incidence by 1.9 percentage points resulting from typhoon Yolanda. The estimate assumed varying percentage losses in income depending on source, whether from wages (agricultural or non-agricultural), entrepreneurial activity (agricultural or non-agricultural), or transfers.⁵

Although in Region VI, Western Visayas, and Region VII, Central Visayas, almost a similar number of people are affected, there are nearly 700,000 more poor affected people in Region

³<http://www.popcom.gov.ph/popstat.php>; <http://www.census.gov.ph>

⁴<http://www.nscb.gov.ph/poverty/default.asp>, Philippines Poverty Statistics

⁵Reconstruction Assistance on Yolanda, 2013

VII, Eastern Visayas. Eastern Visayas is a predominantly rural area, with agriculture and fisheries being the main sources of peoples' livelihoods. The region is expected to have the largest jump in poverty because of the magnitude of the damage in the region, the destruction in public infrastructure and services, and the high share of families that were vulnerable to fall into poverty before the typhoon. ADB estimates that the poverty rate in Eastern Visayas may increase from 41.2 percent to 55.7 percent.

In recent disasters in the Philippines, the poor as well as other vulnerable groups have consistently been disproportionately affected.⁶ An estimated 80% of vulnerable groups (persons with disabilities, pregnant and lactating women, and older people) affected by Typhoon Washi were not given special attention,⁷ highlighting the need to identify and respond to the needs of vulnerable groups.

Deaths, Injuries, and Displacement

According to the situation report issued by the National Disaster Risk Reduction Management Council (NDRRMC) dated 6 March 2014, the confirmed death toll is 6,245. It is a very high death toll for a natural disaster. In 2012, the Philippines had the highest number (2,385) of natural disaster fatalities anywhere in the world.⁸ In the Asia-Pacific region, the Philippines is the only country where the number of human deaths in natural disasters has increased in recent years. It is indeed an alarming trend, which must evoke serious concern and be responded through a national effort to reduce the level of mortality. It would require greater investment in early warning capacities, capacity-building in dissemination of early warnings, and considerable improvement in emergency preparedness.

In Typhoon Yolanda, there are a number of tragic stories about the entire family except one or two being swept away by tidal surges. As the families saw their loved one being swept away before their own eyes, the sense of tragedy is very acute. Though the local government as well as the organizations and newspapers have tried to locate missing persons, 1,039 people are still missing, as per the NDRRMC update. People are still trying to locate their family members. The sense of trauma which the communities have faced particularly in severely affected areas will not easily go away.

The assessments that have been conducted have reported psycho-social distress, including fear and changes in behaviour such as sadness, crying, and other exaggerated emotions in the affected areas of Iloilo, Leyte, and Eastern Samar. Roughly 40 percent of households report feeling insecure. Children and young people remain profoundly affected by what they experience during the typhoon. Psycho-social support thus has emerged as an important priority in course of a number of assessments.

According to the NDRRMC update, 28,626 people have been injured in the typhoon. Despite their personal losses, the personnel from the Rural Health Unit made themselves available to serve those who needed medical attention, especially pregnant women, children and the elderly. Medicines were available at the health centers. However, a large number of people

⁶Disaster-induced internal displacement in the Philippines - The case of Tropical Storm Washi/Sendong

⁷ Post-disaster Needs Assessment Washi, 2012

⁸CRED 2012

who were injured lived in remotes areas, which were not accessible. As a result, there was a delay in the provision of medical assistance. According to the WHO, with some of the more remote areas being accessible about four weeks later, there was a second wave of people reaching hospitals with injuries. As local hospitals were not working in the affected areas due to destruction, some of the people who were injured required air evacuation. Hospitals in Manila treated about 20 people with spinal cord injuries, and many more with fractures and amputations.

Damaged houses and debris, uncollected solid waste and broken pavements and roads pose a high threat for physical injuries. According to the Multi-Cluster Needs Assessment (MCNA) conducted in December 2013, the risks are highest for women, 67% of household responding noted that women are at increased risk of physical injuries compared to 34% of men.⁹

There is no data on the disabilities caused by Typhoon Yolanda, and there is a need to conduct a survey of the people rendered disabled by Typhoon Yolanda, and provide assistance for their rehabilitation. This is an area where updated information is not available. It is a critical gap, and a delay in assisting the disabled people would make their situation worse. Children with disabilities, especially those who live in rural areas affected by Typhoon Yolanda, are especially vulnerable to disruptions in education and require support, mainstreaming, and close monitoring to ensure effective mainstreaming and access.

Early Warning Dissemination

All the interviews with groups of people confirmed that people knew about Typhoon Yolanda as a super-typhoon. Most of the respondents mentioned that they were in their homes when typhoon Yolanda struck as they had received early warning from several sources. Those who had concrete houses decided to wait out the storm in the comfort of their homes and made necessary preparations such as stocking of food, water, and clothes, in case they needed to evacuate. Some respondents, especially those living in danger zone areas decided to seek shelter in their evacuation centers identified by the government. Schools, chapels, and Barangay halls were some of the places identified as evacuation centers. Some took refuge in two-storeyed houses. Usually, the women, children and elderly were evacuated to safer places and men and older sons were left at their homes. People who decided to evacuate a day before the storm hit prepared for their families' immediate needs, like flashlights, candles, matches, food, and water, but they did not expect that the storm would last long; hence, the provisions were only good for a short-term duration.

However, people thought that the storm would bring heavy rains and so almost everyone prepared for normal flooding. People also made an effort to gain information regarding the typhoon's current location, speed and time of landfall. Not many thought of the force of the wind and storm surges that the typhoon would bring. A lack of popular knowledge and awareness of storm surges and their impacts contributed to a high level of fatality in the area. It is the six-meter high storm surge which killed most of the people.

⁹Multi-cluster Needs Assessment, Philippines Typhoon Yolanda (December 2013), also known as MIRA II

Evacuation of the People

Some LGUs had the experience of preparing for typhoons and other calamities, based on which they reminded the people to make essential preparations and shift to evacuation centers. However, not all were aware of the dangers of a storm surge and its effect on the community, specifically those living along the coastal areas. Officials provided the warning, in many cities with bullhorns, urging residents to occupy higher ground, or take refuge in evacuation centers. About 1 million people evacuated. However, typhoon's severe force overwhelmed any preparations. In Tacloban city, thousands of people got to a big indoor stadium, considered to be stormproof. Though the reinforced roof survived, the people were killed by a 6-meter high surge of water which flooded the structure. In Tacloban, the storm surge was like a tsunami. Nobody expected that the typhoon could do so much damage.

The people residing in evacuation centers are predominantly from the poorest segments of the population; almost half of the people who are living still in evacuation centers belong to those with current expenditure levels among the bottom quartile of the population. People in evacuation centres are among those most severely impacted by the typhoon as reflected in almost every indicator presented in this report.¹⁰

The interviews with communities and local government officials provide a clear indication that people were not very aware of the fatal impacts of storm surges, and they were overwhelmed with the sheer force of disaster. As the typhoons are expected to be stronger and more intense in coming years, there are clearly some lessons for the dissemination of early warning. It is not just enough that the people be warned of the typhoon and the need for evacuation, they should also be informed of various parameters of severity, particularly the speed of wind, storm surges, and the level of inundation. Local governments need to designate those buildings as evacuation centres which are at a sufficient height so that the people do not risk losing their lives when they move to such centres.

Coping with Immediate Aftermath of Typhoon Yolanda

The people found it difficult to cope with the impact of disaster event in the immediate aftermath. Due to disruption of transport and communication, the distribution of relief started late. It was further delayed in far-flung affected areas as the access roads were blocked due to heap of debris. However, once the relief distribution began, it was orderly and smooth. Most families who suffered damages and losses received food and non-food items from various sources such as the Local Government Units, Department of Social Welfare and Development, International NGOs, and private donors. A large number of donors provided humanitarian assistance, which improved the supplies of relief goods.

Barangay Councils identified the beneficiaries and managed the relief distribution. The distribution of immediate assistance was transparent, and communities were informed of the amount of relief goods distributed. The Local Government Units reported / announced to the community all the relief goods that they received and a copy of this list was submitted to the local Disaster Risk Reduction and Management Offices (DRRMOs) and updated them from

¹⁰MIRA II, Page 6

time to time. The Municipal and Provincial Disaster Risk Reduction & Management Offices kept track of the list of beneficiaries and ensured that there was no repetition in respect to distribution of relief goods, and all the families received both food and non-food items. In respect to non-food items, priorities were given to differently-abled persons, senior citizens, single parents, households with most number of children below 10 years old, and households with no regular source of income. Most respondents expressed their appreciation on the transparency and manner of distribution.

In some cases where private donors asked for a specific group to handle the distribution of goods, the MDRRM office coordinated with these groups such as Church / Barangay leaders. Before and during the disasters, food items from the LGUs were distributed to the people in the evacuation centers. Right after the typhoon, both food and non-food items (tarpaulins/shelter kits) came and the immediate need of the community was provided for, albeit not all those who were affected received assistance. For those municipalities which were hardest hit, medium to long-term help is being made possible by some International NGOs.

There were instances of looting as well following the disaster event. The affected families from Tacloban City admitted that they looted items from supermarkets, but those items were goods of basic necessities such as food, water, milk, and clothes. They could not really identify those people who looted things which are not for immediate survival such as appliances, jewellery, etc. It must be said that the incidents of looting was reported in the worst affected area of Tacloban City, and not in any other area.

The Multi-Cluster Needs Assessment (MIRA) of December 2013 showed that 31% of the affected population were currently not living in their own house. They are either living in temporary shelter near to their homestead, or staying with friends and family. The homelessness and dislocation of the people has been a source of stress. Women and elderly people have been the most affected groups. Elders in the family are most affected from extreme weather conditions making them most vulnerable to illnesses.

Impact on Livelihoods

Typhoon Yolanda's impact on the livelihoods of almost six million working women and men has been severe. It could be explained in terms of destruction of assets and supplies, disruption of markets and businesses, and reduction in demand for skilled and non-skilled labour. Income has been halved on average in many sectors.

In July 2013, prior to Typhoon Yolanda, the working-age population (aged 15 years old and over) in the four most affected regions (IV_B, VI, VII, VIII) was estimated at 15.0 million (see Table 1). Out of this number, approximately 9.6 million were in the labor force, registering a labor force participation rate of 63.9 per cent. With a labor force of 3.2 million in both Regions VI and VII, they account for 66.6 per cent of the total labor force in the four regions. Some 9.0 million people were employed in the four regions, while 0.6 million were unemployed, representing an unemployment rate of 6.2 per cent. Furthermore, some 3.8 million workers were in vulnerable employment (own-account workers and unpaid family workers), representing 42.6 per cent of total employment in the four regions. In particular,

vulnerable employment rates were relatively high in Region IV-B and Region VIII, at 49.0 per cent and 48.1 per cent respectively.

Key labour market indicators, prior to Typhoon Yolanda (thousands)

	IV-B	VI	VII	VIII	Total (4 regions)
Working-age population (15+)	1,955	5,182	4,900	3,010	15,047
Labor force	1,296	3,205	3,201	1,914	9,616
Employed	1,246	2,964	2,992	1,819	9,021
Underemployed	243	666	365	528	1,802
Unemployed	50	241	209	95	595
Vulnerable employment	592	1,136	1,203	849	3,780
Labor force participation rate (%)	66.3	61.8	65.3	63.6	63.9
Employment rate (%)	96.1	92.5	93.5	95.0	93.8
Underemployment rate (%)	19.5	22.5	12.2	29.0	20.0
Unemployment rate (%)	3.9	7.5	6.5	5.0	6.2
Vulnerable employment rate (%)	49.0	37.9	41.5	48.1	42.6

Source: All data based on Philippines Labor Force Survey, July 2013, except vulnerable employment and vulnerable employment rate, which are based on the Labor Force Survey, October 2012.

An ILO impact assessment indicates that some 5.6 million workers, 60% men and 40% women, in the four regions are estimated to have had their livelihoods impacted temporarily or permanently as a result of Typhoon Yolanda.¹¹ This represents over 60 per cent of total employment in the four regions. Amongst the total number of workers affected, an estimated 2.4 million vulnerable workers, or 42.9% of affected workers, were either self-employed or unpaid family workers. With inadequate incomes and no or limited access to social security prior to the disaster, this group of workers is most vulnerable to any disruption in employment and income flows. Among the four regions, Region VII is estimated to have both the largest number of workers and largest number of vulnerable workers affected.

According to the Philippines labour force survey, half the workforce in the affected areas previous to the Typhoon was in the service sector, with the industrial sector accounting for 13% of employment, and 38% in agriculture. Livelihoods are often mixed, with many households maintaining secondary or tertiary livelihoods, and therefore have more than one income source. This improves income diversity (hedging) on the one hand, and allows for lean periods in one activity type to be complemented by other activities on the other hand.¹² Households with mixed but vulnerable livelihoods (agriculture, fishing, trading etc.) have suffered damages even in their secondary and tertiary sources of income. This was observed in the coastal areas in particular, as well as in major urban centers on the coast.

Rural Livelihood Losses

The survey conducted for MIRA showed that agriculture and fishing were the most severely impacted: more than half (51 percent) of fisherfolk and 29 percent of farming households reported that their livelihoods were completely destroyed. In addition, more than half of those engaged in wholesale and retail trade (51 percent) also reported a lasting impact on their livelihoods due to the typhoon. By contrast, those in salaried and skilled employment as well

¹¹ILO (2013/11/28) Service Sector Severely Affected by Typhoon Haiyan

¹²FAO Livelihood Profiles 2013

as other daily labourers (unskilled, non-agriculture) reported less impact, with the majority reporting no or temporary impact, i.e. disrupted but now restored.

Though the coastal areas were significantly affected, the impact was severe in some of the inland communities. In Leyte, many communities also reported lasting damage to their livelihoods, largely due to extent of damage sustained on coconut plantations on which many of these communities depend. Given that coconut plantations can take approximately seven years to grow and become productive, alternative livelihood options may need to be identified and encouraged for affected households.

In terms of area destroyed, farming households report that for all crops except rice (coconut, banana, vegetable, corn, cassava and sugarcane), crop area destruction was more than 90 percent. Paddy fields were damaged to the extent of 72 percent of cultivated area.

Fishing communities were hit hard in that they not only lost their boats and fishing equipment but also their houses and catch earnings. Twenty-eight percent of fisherfolk have lost their boats and 35 percent have lost almost all fishing equipment including nets. Many fisherfolk reported being able to resume limited fishing activities (mostly for consumption) by sharing boats and equipment. On average, fishing was disrupted for almost a month in all areas. The main challenge for households that depend on fisheries is not only access to boats and fishing equipment but also access to electricity to refrigerate fish for sale at a later stage. Fisherfolk with seaweed plantation or aquaculture farms were also severely affected.

As elsewhere, in the Philippines, animals are considered valuable assets in rural communities and an important secondary source of income throughout many livelihood groups. Overall, 31 percent of households reported livestock losses, mainly of poultry.

Urban Livelihood Losses

While many households maintain more than one income source, those in the coastal and urban areas in particular have suffered losses across different activity types as well as along the value chain which includes processing, salting, canning, etc.¹³ Wage labourers engaged in downstream agricultural and livestock sectors such as rice milling and feed milling have also been severely affected as a result of damages in plantations and paddy fields.¹⁴

In Tacloban City area, a large number of retail stores run by small vendors who normally supplied the city and its surrounding Barangays with fresh food and dry goods had been severely damaged. Other than physical damage and looting, many reported a lack of capital and clientele. The few shops that had resumed operations were reportedly selling goods that had either been looted, or recovered from the debris such as cigarettes and light drinks. A large number of tricycle and pedicab drivers in Tacloban City had as of November either lost their vehicles or required repairs.¹⁵

¹³ FAO Livelihood Profiles 2013

¹⁴ ILO 2013, Northern Cebu Livelihood Impact Assessment

¹⁵ Oxfam 2013, Emergency Food Security and Vulnerable Livelihoods Assessment Report, Tacloban City and Leyte Province

The small business owners who were affected were those who operated their businesses at their house (Sari-sari store). It is women of the house or other family members who mostly looked after the business. The assets that were lost were mostly the inventory. As for damages to structures, they have no other option but to rebuild. All household enterprises (Sari-sari stores and handicrafts) do not employ hired help, and as a result, no workers were laid off.

More women than men are engaged in the informal economy. While activity in this sector is largely untaxed, labour rights and contracts are rarely enforced, thereby increasing the risks of exploitation.

Income Losses

The household survey conducted as part of the MIRA II has reported that there are significant income losses. Across all the affected areas, half of income derived from the main livelihood activities was reportedly lost as a result of typhoon Yolanda, with the most affected areas experiencing 80 to 90 percent losses. The poorest households were the most severely affected in terms of income losses. The poorest quartile of households (measured in terms of total expenditure in November) reported losing around 75 percent of their income, while the second poorest quartile lost 55 percent, the third poorest lost 43 percent, and the richest quartile lost 27 percent. This trend highlights the vulnerability of the poorest segments of the population who now face additional income challenges as a result of typhoon Yolanda.

In terms of income losses by specific livelihood, fishing and farming were again the most impacted: fisherfolk lost around 70 percent of their income while farmers lost 54 percent in the aftermath of Yolanda. Wholesale/retail traders and non-agricultural daily labourers also reported losses of approximately half of their income in November. Salaried and skilled employment reported smaller but still substantial income losses, of around 38 percent.

Whatever little money the affected households have, they spent on making temporary/makeshift shelter. Though some respondents received help, most of them said they had no outside help (i.e. remittance from an OFW family member, family members working in Manila). Since Nipa and Ambolong trees (source of materials used for roofing) were mostly destroyed, some respondents have resorted to taking out cash loans from informal lenders, and for those gainfully employed, they borrowed from lending institutions like banks, formal lending companies, and GFIs (Government Financial Institutions) like GSIS (Government Service Insurance system) Home Development Mutual Fund, SSS (Social Security System). There were no reported cases of a spike in interest rates. 25% of female-headed households are now receiving remittances, compared to the lower figure of 18% before the crisis.¹⁶

In the absence of cash, there is a likelihood of dependence upon loan sharks and informal moneylenders, colloquially, 'Bombay loans', 'Indians', or '5-6' loan schemes), which perpetuates the cycle of indebtedness (FAO Livelihood Profiles 2013). The quick recovery of

¹⁶MIRA II, 2013.

financial institutions, despite problems with ID documents, at least ensures the ongoing transfer of remittances.¹⁷

The proposed recovery interventions in the area of livelihoods are mentioned in the section related to recovery and policy recommendations.

Housing: Human and Social Impacts

The damage to housing stock in the wake of Typhoon Yolanda is enormous. According to the latest situation report issued by the NDRRMC, the total number of houses totally destroyed is 550,928, while the number of houses partially damaged is 589,404. With a huge incidence of homelessness, the housing remains a key priority for the affected population.

Inferior quality materials and poor construction underscore much of the devastation to houses: observations from the field confirm that many of the houses destroyed were built from wood and other fragile materials. With the risk of up to four more storms in the coming months, shelter concerns are a top priority.

While there is a discussion of housing damages and reconstruction needs emerging from them in the chapter on social sector, the section discusses peoples' needs, choices, and expectations. People have limited cash to pay for repairs and rebuilding. Almost 20 percent of those whose homes are destroyed are living in temporary shelters near to their homestead. A large number of families, especially those who can afford to and have relatives elsewhere, have left their community at least temporarily. Of those who have migrated, about one third come from the coastal areas.

Temporary / transitional housing

Temporary / transitional housing, also known as bunkhouses, needs to be made available for families forced to relocate due to housing insecurity at least until it is safe to return back to their home or, if necessary, until they are relocated. However, the provision of temporary / transitional housing raises several issues which need to be addressed:

- a. A selection criteria needs to be developed which is applied consistently for provision of temporary shelter. The criteria must be communicated to all the people who are considering moving into temporary shelter.
- b. There will not be enough temporary shelter for the people who have been displaced. In such situation, a standard assistance should be considered so that people can build temporary shelter through their own efforts.
- c. It is equally important to provide basic civic amenities such as water, sanitation, and schools close to cluster of temporary shelter. If the people need to live there for a certain length of time, they must be provided with living conditions which are acceptable.

¹⁷Oxfam 2013, Emergency Food Security and Vulnerable Livelihoods Assessment, Daan Bantayan

The affected households indicate that their immediate priority needs are still reconstruction and repair of housing, continuation of food assistance, and fulfillment of cash requirements. No major differences are observed between priority needs expressed by female and male respondents.

Low income generation limits the ability of people to start or complete the reconstruction of their houses. An estimated 70% of households are in need of support to rebuild or repair their homes.¹⁸ Limited cash is available to pay for repairs and rebuilding.¹⁹

Debris and rubble clearance must be prioritized to make room for new shelter. The debris contains timber and corrugated galvanized iron (CGI) roofing materials that can be salvaged for rebuilding or repair purposes. It is important to salvage CGI especially in urban areas as natural resources such as palm leaves for roofing and bamboo is not easily accessible. The skills of men and women in recycling and natural resource harvesting will inform equitable inclusion in the shelter response.

Housing, land and property issues potentially affect over a third of all IDPs. These issues have become an increasing concern, as many households do not own land titles. An estimated 62% of the affected population owns or rent their plot. However, 33% of the population lives on rent-free land with (27%) or without consent (6%) of the owner. Having the consent of the owner is not a guarantee for these families occupying their land as they can be forcibly relocated or evicted by the landlord.²⁰ In absence of these legal rights, they could be overlooked in government housing allocations.

If availability of land emerges as a critical issue, there is a need for wider consultations with households and communities to resolve the issue. Appropriate gender-sensitive solutions need to be identified and effective solutions implemented by government, where necessary with the support of the international community.

There is an urgent need to prioritize shelter assistance according to vulnerability, especially for households headed by women, older people, children, and persons with disability whose needs have not been met before the new rainy season starts. Those households who did not own a house or land before the typhoon or have lost their land or property titles also need to be assisted for housing.

A large number of affected households are returning to rebuild or repair their houses. Financial and technical assistance for self-help housing / owner-driven reconstruction is a strategy which the national and local governments must consider. Providing building materials, tools, and organizing cash for work and trainings is a sustainable solution that will enhance community resilience.²¹

The need for community and urban planning in highly damaged areas will be crucial, particularly in areas with possible reduction in population, key changes to community

¹⁸ REACH (2014/01) Super Typhoon Haiyan, Shelter and Wash Cluster Assessment

¹⁹ MIRA II, 2013

²⁰ REACH (2014/01) Super Typhoon Haiyan, Shelter and Wash Cluster Assessment

²¹ Shelter Cluster, 2013 Typhoon Haiyan - Shelter Cluster Technical Guidance

infrastructure, and areas where government wants to declare as no-build and no-settlement zones.

If there is a demand for enforcing 40 / 50 meters from the coastline as no-building zones, a large number of families affected by the implementation of this regulation will need to be relocated. The decision will need to be implemented in consultation with the local governments and communities.

Key recovery interventions in the area of housing are mentioned in the section related to recovery below.

Protection Issues

There is an overall lack of sex and age disaggregated data on protection concerns, both pre- and post-typhoon. However, there are certain protection issues that have been expressed in several assessments conducted after typhoon Yolanda.

The key protection issue that emerged is a general feeling of insecurity among men and women, especially in evacuation centres, but also throughout the affected areas. On average, across all geographical areas, sex and wealth categories, 40 percent of households interviewed indicated a feeling of insecurity.

As a large number of people were displaced due to typhoon, protection risks increased considerably for women and children. A total of approximately 3.3 million people moved into 1,092 evacuation centers. As a result, conditions such as overcrowding, lack of privacy, lack of lighting, and lack of segregated facilities heighten the likelihood of sexual and gender-based violence in evacuation centres overall (SRP 2013/12/10), and especially within families. Women in 26% of households are restricting their movements by fear of prevailing insecurity, especially in inland areas of Leyte and the Western coast of Samar which suffered significant damage as a result of extreme wind.²²

Government institutions and NGOs have reported trafficking as a major concern, particularly because areas heavily impacted by the typhoon, like Samar and Leyte, were known hot spots for trafficking of women and girls prior to the current disaster.²³ Around 15 percent of households express an increase risk of human trafficking in these sites for both men and women. Women, children and adolescents from poorer households may be particularly at risk. In other areas, the increased risk of human trafficking is expressed by 4.3 percent of households for females and 2.2 percent of households for males. The danger of human trafficking will need to be strictly monitored for households still residing in evacuation centres.

In addition, a child protection rapid assessment carried out by UNICEF in Leyte, Samar, Eastern Samar, Cebu and Capiz suggest there are increasing concerns about the potential risk of violence, abuse and exploitation against women and children in the typhoon-affected areas. Mitigating actions include support for the psycho-social wellbeing of children and their

²²MIRA II

²³IACAT, 2012. The Second National Strategic Action Plan Against Trafficking in Persons 2012-2016

families and preventative measures to reduce a potentially increasing risk of child sexual abuse and child trafficking.

IDPs in remote areas and areas affected both by conflict and by the typhoon, and in evacuations centres face protection risks related to their displacement, relocation and resettlement.²⁴

Loss of documents can lead to significant land and property rights issues. Families who have lost legal documentation of land and property title may encounter legal dispute on ownership of land tenure. These groups will require support from local or provincial government resources to recover these assets.

Gender

The assessment is seriously constrained by a lack of sex and age disaggregated data. Without the necessary data on how vulnerable groups such as women, older persons, and persons with disability are affected, it is difficult to plan a well-targeted recovery programme.

In the Philippines, the number of female-headed households is around 20 percent of total households, and in typhoon-affected areas, the percentage must be the same. This group is clearly more vulnerable, and they need to be identified for the purpose of assistance. A positive development is that remittances from abroad for female-headed households have increased after the typhoon, compared to pre-typhoon level.

More women than men are engaged in the informal economy. Small and local traders (mostly women) who relied on local agricultural or fishing have suffered a significant economic blow; their recovery will not be rapid. Impacts on women have been presented as below:

1. Poorer families, and especially women, are engaging in negative coping strategies and limiting food intake. If these strategies continue for a long time, it may have a negative effect on the health and physical well-being of the affected population, especially children, pregnant women, older people, people with chronic illnesses and those with disabilities.
2. Men are primarily involved in catching fish, while women are engaged in pre- and post-fishing activities. Women undertake local fish processing and marketing activities and are involved in mending nets, tending fishing equipment, and other activities.²⁵ Livelihoods interventions need to be organized, taking into account such a gendered division of labour.
3. Both men and women farm, but have different roles. Usually, men prepare the land. Both men and women transplant and harvest the crops. Women are also engaged in post-harvest processing (cleaning and drying at household level) and selling the

²⁴Strategic Response Plan Philippines Typhoon Haiyan 2013

²⁵Asia-Pacific Fishing Commission, 2012

surplus production of both vegetables and staple food crops. Some women are active in farming. Immediate support for resumption of agriculture will benefit both men and women engaged in farming.

4. Timely early recovery and livelihoods support, which includes a gender analysis, should be provided to the agricultural and fishing communities so as to enable men and women to restore their income and food generating activities. Reliable supply routes are critical when planning support for food production activities.
5. By region, a high prevalence of nutritionally at-risk pregnant women was noted in Mimaropa (43.6%) and Western Visayas (33.2%). Despite efforts to improve the health and nutrition of mothers and new-borns, maternal and neonatal mortality is still at 200 per 1,000 live births.
6. In the three regions most-affected by Typhoon Yolanda (Western Visayas, Central Visayas and Eastern Visayas), the reported rates for physical and sexual violence are higher than the national average.
7. One overlooked need during and after disasters relates to female reproductive and hygiene care. Few women stated that they had access to feminine hygiene supplies and most women who were sexually active stated that they did not have access to birth control.

Food Security

The section is based on the results of a household-level survey conducted to assess the level of food security in the typhoon-affected areas. A team of researchers associated with the Igarapé Institute and the Institute of Social Work and Social Science conducted a rapid household survey which included 4,366 households with a total of 20,524 individuals.

As the food supplies ran short, more than half of all households reportedly experienced hunger after the typhoon. Urban households were nine times more likely to be food secure than rural households in the weeks after the typhoon. Rural households were significantly more likely than urban households to report losing food stored for later consumption and/or animals used for food or sale during or after the typhoon.

Supplies of food and water were not enough to nourish the affected population due to huge number of families affected. Relief goods from government and non-government organizations would be sufficient only for a few days. Poor families have no other option but to reduce the expenditures for food and sometimes skip meals together.

Areas with limited food assistance are primarily located in the Western Visayas and Eastern Visayas regions with La Paz, Buruaen, Santa Fe, Pastrana, and Tabontabon areas particularly in need.

Poorer families, and especially women, are engaging in negative coping strategies and limiting food intake. It would be important to increase their purchasing power through cash-

based interventions so that they can purchase food, and the negative effect on health and physical well-being of the affected population could be avoided.

The critical place of remittance support in shaping peoples' wellbeing was also confirmed. Access to remittances from family members abroad served as a protective factor with respect to food security. Those receiving remittances or cash transfers after the typhoon were 4.72 times more likely to be food secure than other households. It is worth noting that the frequency of remittance flows from Filipinos working overseas grew continuously in 2013 – up to USD2 billion a month, a 6.6% increase on previous years. Though only ten percent of households had received remittances or cash transfers since the typhoon, many more reported that they expected to receive such funds.

People taking shelter in evacuation centres, marginalized or isolated indigenous communities and those considered highly vulnerable (older people, people with disabilities, pregnant and lactating women, the chronically ill, households with multiple infants and small children, and those from areas with a high pre-disaster prevalence of malnutrition and extreme poverty) are at high risk of food insecurity in the coming months if they are not able to recover their livelihoods.

4.3 Disaster Risk Reduction and Management: Learning the Lessons from Typhoon Yolanda (Haiyan)

The Philippines is among the top global disaster hotspots, and is exposed to a wide range of natural hazards. It ranks 8th among countries most exposed to multiple hazards, and 13th among those at high economic risk to natural disasters, with at least 85 percent of GDP in areas at risk. Located in the Pacific Ring of Fire, it is highly exposed to earthquakes, volcanic eruptions, and other geological hazards, as well as to multiple typhoons and monsoon rains.

Over the last few years, the Philippines has incurred considerable damage and loss from severe events that impacted various parts of the country. Severe weather events such as Ondoy (Ketsana), Pepeng (Parma), Sendong (Washi), and Pablo (Bopha) affected a widespread area across the archipelago. These events affected more than 10 million people, claimed around 3,000 lives and resulted in damages and losses of around US\$6 billion, based on post-disaster assessments undertaken by the Government and its development partners.

Amidst these events, the Philippines has achieved significant gains following the enactment of the National Disaster Risk Reduction and Management Act (Republic Act No. 10121) in 2010. Action plans, instructions, and guidelines across sectors and levels of governance, awareness building and community mobilization, investments in hazard assessment and forecasting, and initiatives in new realms of disaster risk reduction, such as risk financing and catastrophe risk modeling have been undertaken to implement the Law.

Many challenges definitely remain. These challenges are amplified by an occurrence of a natural hazard. Compounded with existing fundamental development challenges, such as poverty, unplanned urbanization, high population, environmental degradation, and inadequate infrastructure, impacts from natural disasters can easily overwhelm communities and local governments. The interplay between these complex underlying sources of vulnerabilities and the high degree of exposure of these communities to multiple hazards

determines the extent of disaster to occur in these communities, as demonstrated by Yolanda and other disaster events that came before it.

Policy and institutional framework for DRRM

The National Disaster Risk Reduction and Management Law (Republic Act No. 10121) embodies the policy framework that governs the institutional mandates and relationships, and practices across levels of governance and sectors in society. The Law significantly reformed the paradigm for dealing with disasters by adopting a pro-active approach, focusing on preparedness, mitigation, and reduction, shifting away from emergency response approach. Institutional arrangements have been introduced, expanding the constitution of the disaster risk reduction and management councils, from the national down to the barangay levels. Four agencies have been nominated as co-chair of the different phases of disaster risk reduction. The law has also ushered in new mandates in new realms of disaster risk reduction, such as disaster risk financing. The Law upholds the role of local governments to take lead in decisions and actions across disaster risk response, preparedness, mitigation, and recovery and reconstruction in their jurisdiction.

Needs Assessment for DRRM

Advance discussion on review of DRRM policy and institutional framework. Significant investments have been put in place since the enactment of RA 10121. However, as challenges remain, there is a need to revisit the adequacy and responsiveness of these policies to deal with large and complex disasters which are becoming more frequent as well. The Law provides for a review of the institutional set up for disaster risk reduction in 2015, five years since its enactment. In addition, several other laws that affect the other pillars of disaster risk reduction should likewise be reviewed. Among these are the Local Government Code, the Government Service and Insurance System, and the National Building Code. The lessons learned from the huge disasters provide a good impetus for reviewing the policy to ensure that responsibilities and corresponding capacities are in place.

Demarcate of safe locations and hazard zones. The Government has intensively invested on improving hazard information and risk assessment in the country, which is a fundamental first step to disaster risk reduction. Improvements through the CSCAND agencies and Project NOAH have increased disaster awareness among local governments and communities, particularly on hazard warning. As shown by past events, information from these agencies has facilitated early actions that have undoubtedly reduced the potential human impacts of disasters.

Hazard information and risk assessments have a greater value in informing pre-disaster actions. Ensuring access and availability of this information at appropriate scale and form across local governments and communities has the potential to inform land use planning, community-level awareness and action planning, and investment decision-making. Recovery and reconstruction of the Yolanda-affected areas presents an opportunity to build safer communities, informed by demarcation of safe zones and multi-hazard areas.

Invest in early warning system and community level awareness for disaster preparedness. The spate of huge disasters in the Philippines has greatly contributed to building awareness especially at the community level. Forced evacuation stemming from communities' lack of awareness of potential disaster impacts is a thing of the past. Days before Typhoon Yolanda made a landfall, the communities along the predicted typhoon path have already evacuated to identified shelters and necessary preparations have been undertaken. Many, however, prepared for dealing with typhoon and strong wind, which have hit many of the areas in the past and were not aware of the storm surge impacts. The high degree accuracy achieved in forecasting and nowcasting should be complemented with early warning system

community awareness to achieve end to end system. Strengthening and fast-tracking of community-based DRRM interventions needs to be supported considering the urgency of capacitating communities to address their own vulnerabilities, including building community knowledge on multiple hazards to which they are exposed.

Strengthen engineering standards and designs especially for critical infrastructures. The huge damage to personal properties and assets amplifies the urgency of updating the engineering codes and designs in the country, a process which has been initiated already by the DPWH. School buildings, health facilities, and other public infrastructures are critical in reducing the overall vulnerability of the society to disaster impacts. The adoption of these standards has serious implications on the cost of recovery and reconstruction, but the benefits of resilience outweigh the costs in terms of ensuring that the individuals occupying these structures are safe, the structures will withstand events and will not require recovery after each event, and that services are not disrupted.

Build sectoral capacities for disaster resilience. Schools, health facilities, and other key public facilities need to have established preparedness plans and procedures, especially if these are designated shelters. Business continuity plans and procedures need to be formulated, in consultation with stakeholders, to clarify roles and responsibilities during a disaster event.

Improve national capacities to deal with large scale disasters. The widespread impact of Yolanda encourages a review of the capacities of the national government to deal with large-scale disasters. The country's protocol is mature for review and updating to consider the increasing frequency of extreme events. Issues on chain of command, coordination, and establishment of contingency/back up measures are carefully evaluated and embodied in this document. As a typical result of any disaster, the emergency response system, including human capacities and physical hardware, are enhanced to meet at least the level of the last worse disaster.

Establish risk transfer mechanism. Time and again, the Philippine Government is placed in a situation where it ends up being the financier of the first and last resort. The economic and fiscal toll arising from disasters, especially as large-scale as Yolanda, displaces priorities for long-term development to meet emergency and reconstruction requirements. Financial protection across segments of society, such as the poor and vulnerable, low income households, and micro, small and medium enterprises, which are the most adversely affected, do not have access to these instruments and oftentimes have to rely on government or borrowing to tide them over. Through the leadership of the Department of Finance, concrete reforms and actions are underway to address this concern.

4.4 Environment

Damage and loss assessment

The environment is intricately linked to the livelihoods and products of the Philippines and crosses all other sectors. Agriculture, fisheries, tourism, construction and energy rely on environmental resources, among many other sectors. Land use planning and management also significantly affects the availability and impact of these resources on communities, particularly during and after the instance of a disaster.

Several significant impacts to the environment were documented and assessed in the PDNA, some of which may cut across other sectors. These included damage to mangrove habitats and other important fisheries, such as coral reefs, fish sanctuaries and seagrass

beds, coastal erosion, damage to upland forest and habitats, watersheds, including erosion and siltation of rivers and waterways, water contamination and waste management problems.

Information compiled on environmental losses and damage varied across regions, with some providing detailed estimates of environmental needs while others providing limited information or qualitative analysis only. Undertaking a PDNA for the environment sector is a challenging task with some aspects of environmental services being extremely difficult to quantify. Though the process followed the guidelines for PDNAs, the variation between the different regions implies some weaknesses in the systematic coordination and possible gaps in capacity.

Further environmental damage from recovery and reconstruction operations were not covered by the assessment though ideally should be. Some environmental damage was reported post-Typhoon Haiyan due to illegal logging and hunting, but there is likely to be damage from temporary accommodation and camps, reconstruction and community coping mechanisms that is not captured here. In addition, information on the original state of the environment is weak and for some of the assessment teams, unavailable. This makes undertaking the PDNA challenging, particularly for the environment sector.

Further detailed analysis and assessment would be important in ensuring the damage and needs identified in this section is not counted in other sections. Also, the needs for some regions are likely to be underestimated as minimal or no quantitative information was provided.

The short to medium term needs, as compiled from all sources under the environmental cross-sector, totaled more than 6.6 billion Pesos. When broken down however, some needs such as those for municipalities in Eastern Samar including requests for eco-tourism infrastructure which was not pre-existing, may be considered a lower priority. A further assessment of key environmental issues raised by various provinces is provided in the following discussion.

Coastal

Coastal areas in the path of Typhoon Haiyan suffered severe damage, impacting important fisheries and aquaculture habitats and potentially exposing communities to greater risk of damage from further storms. Issues covered under this section include destruction and damage of mangroves, seagrass and fish sanctuaries, coral reefs, marine reserves and coastal foreshores.

Mangrove ecosystems

Considerable damage to mangrove ecosystems was reported by numerous municipalities, particularly in Eastern Samar and parts of Western Samar, Iloilo and Capiz, among other areas. . Damage to some areas was very severe, with the municipality of Salcedo reporting more than 2000 hectares of damage to mangrove alone. In total, almost 2500 hectares estimated to be affected, though further assessment is needed to confirm this as some regions reported limited information. Mangroves are important habitats for fisheries - a key

industry in the Philippines - and therefore should be urgently regenerated and maintained in an ecologically sound manner. Mangroves also provided some protection against Typhoon Haiyan according to some reports²⁶, and their removal or damage increases the risk of exposure to further disasters. The recovery and reforestation of damaged mangrove ecosystems should not just focus on replanting, but also on building their resilience to future disasters and replenishing their health to support fisheries and wildlife, which was noted to be almost absent after Typhoon Haiyan.

Limited information on the status and health of mangroves prior to Typhoon Haiyan was reported, with the exception of some damage due to coastal development and aquaculture²⁷. However, many community based forest management sites and greening programmes were on-going prior to the storm. Further damage to these systems was noted in the aftermath of the disaster as the coping mechanisms for communities included hunting and illegal logging²⁸. Additionally, waste was illegally dumped in some forests, while others suffered contamination from oil spills during the disaster. Careful management of natural resources, awareness raising and better access to social support strategies for affected communities post-disaster are needed to reduce further degradation.

Support for eco-tourism development in mangrove areas, such as mangrove walkways, accommodation and home stays, promotional material and training particularly by Eastern Samar, was requested. The total recommended amount for this is PhP 774.2 million.

Table below provides an overview of the area, recommended recovery efforts and estimated needs for mangrove recovery. The needs assessment funding request only includes reforestation activities where the distinction was made in the report, however other recommendations such as the development of forest management plans and institutional needs should also be considered in redeveloping these sites.

Damage and replacement cost for mangrove ecosystems

Area/Region	Estimated mangrove area damaged (ha)	Recommended action	Needs assessment (PhP)*
Eastern Samar			
Maydolong	0	N/A	
Balangkayan	7.5	Reforestation, Eco-tourism, GIS mapping, forest plan, maintenance equipment	112,775.00 (over 3 years)
Llorente	10	Natural regeneration, Eco-tourism, GIS mapping, forest plan, maintenance equipment	173500 (over 3 years)
Hernani	88	Reforestation, Eco-tourism, GIS mapping, forest plan, maintenance equipment	1,217,400.00 (over 3 years)
General Mac Arthur	246	Reforestation, Eco-tourism, GIS mapping, forest plan, maintenance equipment	4,130,800.00 (over 3 years)
Salcedo	1662	Reforestation, Eco-tourism, GIS mapping, forest plan, maintenance equipment	28,835,700.00 (over 3 years)

²⁶ Llorente and Lawaan

²⁷ Leyte

²⁸ Region 6 LGU Giporlos, Biliran

Mercedes	0	Eco-tourism, GIS mapping, forest plan, maintenance equipment	
Guiuan	34	Reforestation, canopy walk and eco-tourism infrastructure, GIS mapping, training, forest land use plan	435,200.00 (over 3 years)
Quinapondan	0	Eco-tourism, GIS mapping, forest plan, maintenance equipment	
Giporlos	Damage reported but area not provided	Natural regeneration, Eco-tourism, GIS mapping, forest plan, maintenance equipment	
Balangiga	45	Reforestation, Eco-tourism, GIS mapping, forest plan, maintenance equipment	780,750.00 (over 3 years)
Lawaan	Indicated damage but area not specified	Eco-tourism, GIS mapping, forest plan, maintenance equipment	
Ecotourism for mangrove areas - Eastern Samar		Mangrove canopy walk, tourism infrastructure, accommodation, training	774,200,000.00 (over 3 years)
Tacloban	Minimal damage reported		Low recovery cost
Western Samar	Needs assessment requests funding as a total for environment, not specifying the area or need	Reforestation	458,076,000 (for all environment-related activities)
Biliran	Specific mangrove area not identified	Reforestation	
Leyte	Needs assessment requests funding for reforestation of mangroves, but area not specified	Reforestation, nursery and seedling production, monitoring and supervision	116371498.4
Southern Leyte	Limited information provided		
Aklan	1.5	Reforestation	17250
Antique	20	Reforestation	90000
Iloilo	135.9 + 4.86 (contamination from oil spill)	Reforestation	792905
Capiz	60.25 + 85	Reforestation	2840500
Negros Occidental	52.705	Reforestation	323000
Northern Palawan	No data	No data	No data
Northern Cebu (reported under agriculture)	171.8	85 hectares recommended for reforestation	No data

* Only needs assessment costs for reforestation included. Cost associated with developing a forest management plan, eco-tourism and maintenance is not included.

Coastal erosion

Coastal erosion was reported in several provinces, in some cases quite severe and including damage to sea walls, though this is likely to be considered in other chapters of this report. The impacts of this damage are being felt by the tourism sector and activities such as marginal fishing²⁹, but this also exposes land and nearby communities to possible further

²⁹ (sector 6)

hazards from further storm surges. In some instances, reconstruction of sea walls or other engineering solutions have been recommended, which would be dealt with in other parts of this report. Alternatively, the development of coastal forest and green belt zones could also contribute to reducing coastal erosion in the future.

The impact of the intrusion of seawater inland has not been assessed but has been noted by one municipality as likely to affect the productivity of agriculture due to salinity. In this area, the storm surge reached up to one kilometre inland in this area, affecting 156 hectares of farmland. Though this relates to the agriculture sector, salt water intrusion has other impacts on natural ecosystems and can infiltrate water supplies. A more detailed assessment of the impact of salt water intrusion should be undertaken and included also under the agricultural sector assessment³⁰.

The total degree of coastline and beach damage and the status of the foreshore of before Typhoon Haiyan struck were not clearly reported. In Aklan, Antique, Capiz, Guimaras, Iloilo and Negros Occidental, more than 37 million PhP is recommended for delineation and demarcation of the coastline along Western Visayas, a distance of almost 3290km. Though other regions recommend an assessment of the delineation needs, few have estimated this yet. Eastern Samar requested mapping and the establishment of a coastal management plan, which should be standard for all regions. For this region and purpose, 2.54 million PhP was requested. Coastal protection and delineation was also recommended for Leyte at an amount of 930,000.

Foreshore and coastal eco-tourism was recommended for all municipalities in Eastern Samar, totaling PhP115,850,000.00. These included accommodation (in some areas existing accommodation was damaged during the Typhoon) and mapping of dive sites.

Coral reefs

Coral reefs, some of which are protected areas³¹, were damaged during Typhoon Haiyan affecting fisheries, livelihoods and tourism. Like mangrove habitats, reefs are important breeding grounds for fish and other aquatic organisms and also provide a buffer from storms. Limited quantitative information on the damage to reefs was provided for most provinces, though in Salcedo, 90 per cent of the 1108.5 hectares of coral reef was reported to have been damaged. The total figure for all of Eastern Samar for establishment or repair of reefs was around PhP 7.2 million. The reef system in Aklan, parts of which are considered protected areas, was also damaged in the storm, though the exact extent was not quantified. Prior to Typhoon Haiyan, some reef systems were damaged and have now been further degraded³². Many regions recommended that work should be undertaken urgently to repair these habitats³³.

Fish sanctuaries and marine reserves

³⁰ Eastern Samar Hernani

³¹ region 6

³² Mercedes

³³ eastern samar, region 6,

Important fish habitats such as seagrass³⁴ and fish sanctuaries were damaged during Typhoon Haiyan, some requiring total replacement, which could affect fishery livelihoods³⁵. The actual damage to fish sanctuaries and protected areas was difficult to quantify, though Eastern Samar suggested that PhP 14.42 million was needed to establish a total of 63 fish sanctuaries and 57 marine reserves. The city of Tacloban indicated that fish cages were lost during the storm with very high recovery costs as a result.

Overfishing was reported as a serious concern prior to the disaster and recovery efforts should not support further fisheries depletion, especially since many fish spawning areas were damaged and will take time to recover. One regional report³⁶ indicated that the response to previous disasters resulted in more fishing boats being provided than had been lost, contributing the further depletion of fishery resources.

Inland

A number of inland forestry areas and watersheds were severely affected during the storm. This is not only a concern for lost forestry resources, but can produce increasingly hazardous circumstances where slopes are weakened and prone to landslides, and downstream communities may be at risk from more severe flooding. Further analysis of upland watersheds that may be at risk is needed and those that may impact larger communities downstream, have had considerable removal of vegetation which could destabilize slopes, or have resulted in severe damage to waterways should be prioritized.

Upland forestry

A number of plantations of timber, fruit, rattan, bamboo and other environmental assets with direct economic or food value were damaged in several municipalities requiring restoration, though this should be noted in the agriculture chapter of this report³⁷. Native protected forests were severely damaged in some areas with considerable loss of wildlife observed. The Typhoon damaged community-based forest management sites and national greening programmes in several areas³⁸, with young plants to more established trees being uprooted. Reports of hunting and illegal logging after the typhoon passed also contributed to biodiversity loss and forest degradation³⁹. Careful management of natural resources, awareness raising and support for affected communities is needed to reduce further degradation from people resorting hunting and illegal logging as part of their coping strategies to address their basic needs post-disaster.

The total upland forestry area affected was extensive in some regions, though not all had adequately assessed the damage at the writing of this report. For example, Aklan, Antique, Capiz and Iloilo experienced a total of 7560 hectares of damage. Reforestation programmes should prioritize the stabilization of slopes where future storms could cause landslides. Additionally, where forests are important for watershed and flood mitigation, management of

³⁴ mentioned in presentation for region 4b?? also Eastern Samar Mercedes

³⁵ LGU General Mac Arthur

³⁶ Leyte

³⁷ Leyte, Iloilo, Tacloban, eastern Samar, Biliran

³⁸ region 6

³⁹ (region 6 LGU Giporlos, Biliran,)

these areas should be prioritized, particularly where they are upstream from large cities or communities.

Many municipalities lack land use plans or zoning ordinances which exacerbate forestry management⁴⁰, for example, in Western Samar only 4 out of 26 local government municipalities have land use plans⁴¹. Illegal logging has also been reported in some municipalities, even before the disaster struck⁴², and may have exacerbated the risk of landslides during the typhoon. In the assessment of several reports, the development and implementation of land use, forestry and zoning plans were recommended.

Watershed and erosion

Several municipalities experienced damaged watersheds with increased sedimentation and soil erosion which blocked waterways and contributed to flooding even after Typhoon Haiyan passed. Strong winds and rain during the storm were reported to have caused erosion and removal of vegetation on hillsides and in some cases led to landslides⁴³. In some areas, serious riverbank erosion has been observed⁴⁴ affecting livelihood activities due to downed trees⁴⁵, impacting flood defences, and potentially creating a further hazard for people or structures located downstream or on the banks of these rivers. River systems were in watersheds were also reported by some as severely damaged and requiring the removal of silt and the strengthening or repair of river banks. Contaminated water was reported for several areas as some communities relied on rivers that became silted, groundwater that became contaminated with wastewater or waste, or pipes and water infrastructure that was broken. Incidences of health impacts were reported.

Unfortunately, only two municipalities were able to quantify the damage to watershed areas. Balangiga assessed that an area of 3780 hectares required work, along with Salcedo which reported 153 hectares damaged.

Removal of vegetation prior to the storm would have contributed to reduced stabilization of slopes and development and/or implementation of land or forest plans should address illegal logging or ensure better forest or watershed management. A more detailed analysis of the geophysical conditions will be needed to assess the best strategies to reduce further risk for many areas. The rehabilitation and management of upland areas, such as watersheds and forests, needs to be done in a manner that builds resilience to further storms and aims to build a healthier ecosystems which a diversity of species, rather than just monoculture plantations. Utilizing a risk management approach to planning and prioritizing funding will be important for long term watershed management to build resilience. Unfortunately, insufficient data exists presently in the PDNA for this purpose, and further monitoring, mapping and assessment for watersheds should be undertaken as a priority.

Damage and estimated needs for upland forests and watersheds

⁴⁰ (region 8)

⁴¹ (Western Samar)

⁴² Lawaan - Eastern Samar, though may be interpreted otherwise)

⁴³ (region 6)

⁴⁴ (Leyte, XXregion 6, LGU Guiuan)

⁴⁵ (Leyte)

Area/Region	Estimated upland forest and watershed area damaged	Recommended action	Needs assessment
Eastern Samar			
Maydolong	105	Reforestation	2,948,420.00 (for 3 years)
Balangkayan	60	reforestation	2,619,150.00 (for 3 years)
Llorente	Unknown	Inventory of trees	1,800,000.00 (for 3 years)
Hernani	287	Reforestation	5,638,572.50 (for 3 years)
General Mac Arthur	246	Reforestation	14,809,894.00 (for 3 years)
Salcedo	153 (watershed and forestry)	Reforestation and watershed regeneration	4,296,950.00 (for 3 years)
Mercedes	230	Reforestation	5,445,500.00 (for 3 years)
Guiuan	0		
Quinapondan	Unknown	Inventory of trees	1,800,000.00 (for 3 years)
Giporlos	674	Reforestation	12,154,450.00 (for 3 years)
Balangiga	155 forestry + 3780 watershed	Reforestation	63,697,000.00 (for 3 years)
Lawaan	Unknown	Inventory of trees	1,800,000.00 (for 3 years)
Tacloban	Severe upland timberland damage		High recovery cost
Western Samar	Needs assessment requests funding as a total for environment, not specifying the area or need	Reforestation	458,076,000 (for all environment-related activities)
Biliran	2342 (no differentiation between mangrove and upland areas)	Rehabilitation and reforestation	28948760 (for entire forest ecosystem)
Leyte	No differentiation between upland and mangrove	Reforestation	
Southern Leyte	No differentiation between upland and mangrove	Reforestation	Total figure provided
Aklan	770.5	Reforestation	
Antique	1512	Reforestation	
Iloilo	2,680.08	Reforestation	
Capiz	2,490.76	Reforestation	
Negros Occidental	165.45	Reforestation	
Northern Palawan	No data	No data	No data
Northern Cebu	No data	No data	No data

Urban environment

A number of urban related issues such as water, waste and planning, were mentioned by various regional reports, some of which are discussed in other parts of this report. Waste was highlighted as an urgent problem during the aftermath of Typhoon Haiyan, and pre-existing waste management programmes reportedly lead to some of these problems.

In addition, many reports discussed weaknesses in institutions and planning, which have been discussed under some parts of this chapter. Urban planning is a key issue for disaster

risk reduction and many other sectors. Weak planning which is not adequately implemented can result in people or infrastructure being rebuilt in hazardous areas. As this issues is likely to be dealt with in other chapters of this report, only waste management will be discussed here.

Waste management

Waste has been reported as a serious problem in many municipalities with considerable accumulation of various waste products in waterways, forests and areas which could lead to health problems for local communities⁴⁶ and can contribute to further flooding problems by impeding water flow or contaminate groundwater supplies. Several municipalities reported damage to waste management equipment or facilities⁴⁷ which has hampered efforts to remove waste⁴⁸. Mangrove areas have also become contaminated with waste and in some cases, illegal dumping in these areas has been reported⁴⁹. Improvement of landfills and roads for access was mentioned. Municipalities of Eastern Samar recommended the purchase and construction of a new landfill and associated road for all local government areas. Some have reported damage to their existing landfill sites. All municipalities also recommended the development of a 10-year ecological solid waste management plan. Though other regions mentioned waste management as a serious concern, it was not quantified in their PDNAs. The total recommended needs for waste management was almost 600 million PhP, primarily for Eastern Samar, though 72 million of this was allocated to the purchase of landfill sites.

Recovery and reconstruction framework

The assessment of the needs for reforestation of damaged sites varied between municipalities and regions. The extensive damage of mangrove and upland forests and watersheds, marine resources and coastal areas needs considerable rehabilitation and should be a priority as they form the basis for the livelihood of many. It is also recommended that recovery and reconstruction programmes integrate disaster risk reduction and climate change adaptation strategies⁵⁰. Though available estimates of costs for this mostly focus on the short to medium term (one to three years), the regeneration of a mature forest is likely to take a number of years.

In the interim, these ecosystems should be managed to minimize further damage, such as through over-fishing or illegal logging and hunting. Issues related to social protection in the immediate and medium term are dealt with in another chapter of this report, but should ensure sufficient support for the affected communities so as to not undermine efforts to regenerate the natural resources that are important for the livelihood of many people in the Philippines. Diversification of livelihood activities or agricultural and fishery activities is also a mechanism that could support both social and environmental strategies.

⁴⁶ (Leyte, Eastern Samar, LGU General Mac Arthur)

⁴⁷ (Region 6)

⁴⁸ (region 8)

⁴⁹ (LGU Giporlos)

⁵⁰ (Samar)

Several provinces recommended better land use planning or implementation of land use plans. In some municipalities, zoning or land use plans were not established, compounding problems of development in hazardous areas⁵¹. Land use planning should focus on reducing exposure to hazards for people and infrastructure during the reconstruction phase, restoring the environment to protect against hazards, such as stabilizing slopes and upstream habitats through re-vegetation to reduce the risk of landslides, and also ensure better protection for environmental resources to adequately recover from the damage of Typhoon Haiyan.

Likewise, coastal and marine management plans were recommended for several provinces⁵². In an effort to "build back better" programmes for recovery of ecosystem resources should be based on land and marine management plans that encourage sound environmental management. For those areas that require the development of plans, this will be a medium term activity, as time will be required for consultation and adequate assessment, however the development of these plans will be important for long term recovery and sustainability. Capacity building of local government may be required for this purpose. Policies aimed at better environmental management and protection should not only be established but implemented and adequately and regularly resourced⁵³.

It was also suggested that GIS mapping, updated hazard maps and risk assessments⁵⁴, and better environmental assessment is needed, along with the capacity to undertake these assessments⁵⁵ and when repairing or reconstructing infrastructure⁵⁶. This is strongly recommended as the Philippines is regularly struck by disasters and a better analysis of the current resources is important for future PDNA assessments and long term planning. It will also assist in assessing the long term cost and benefit of these resources, which would help evaluate and quantify regular funding for environmental protection.

Better waste management and clearing waterways of waste debris is a short term priority to minimize any future blockage during flood events⁵⁷ and reduce the risk of further health problems and water contamination. A long term waste management plan has been recommended and should include environmental considerations such as reducing, reusing and recycling waste and include the community in waste management. The use of recycled debris for reconstruction and the use of environmentally sensitive products for reconstruction were also recommended. It should also be noted that better hazardous waste management may be needed in the future, as a number of oil spills were reported during Typhoon Haiyan, one of which required evacuation of local residents.

Many of the ecosystems damaged were community projects initially, and continued community participation and education is encouraged in the recovery work. Raising environmental awareness and promoting environmentally sensitive strategies, particularly in agriculture and fisheries, but also for waste management, have been suggested⁵⁸. Several

⁵¹ Samar

⁵² (LGU Llorente Region 8)

⁵³ (region 8 - Tacoloban, Samar province,

⁵⁴ (Samar)

⁵⁵ (region 6)

⁵⁶ (region 6)

⁵⁷ (leyte and eastern samar

⁵⁸ (Samar)

strategies for community involvement have been suggested, such as waste minimization and recycling programmes and employment activities to encourage local communities to repair and maintain the local environment. Specific activities could involve a more detailed survey and assessment of natural resources and their benefits to the community and for disaster risk reduction, plant nursery development, seedling production and employment for planting⁵⁹.

Policy recommendations

The following recommendations are compiled from those suggested in various regional reports:

- Better and more comparable data on losses and needs for all regions is required, including a baseline assessment of environmental resources and GIS mapping for future planning and in the case of other disasters. In addition, improved information and updating of hazard maps is strongly recommended, along with capacity building and access to tools for appropriate authorities to better undertake risk assessments and environmental impact assessments. Better monitoring of watersheds and rivers may help with early warning for future floods.
- Re-establishment, repair or expansion of natural resources such as forests, mangroves, river systems, and marine habitats is recommended for many regions, recognizing the importance of these systems to people's livelihood and the other positive benefits of these ecosystem services. Prioritization of specific areas is recommended in some regional reports. Where an inventory of damage has not been fully completed, further assessment should be undertaken. Initial priority should be given to rebuilding areas important for fisheries, offering protection against further hazards, or upland areas where damage may pose a greater hazard to downstream communities.
- Development of forest, coastal and marine management plans is recommended to guide recovery of ecosystems and for long term management. Land management and zoning plans should also be reviewed or developed if not currently existing to ensure reconstruction in hazardous areas is minimized, and to guide long term planning and urban management. Planning should be institutionalized and regularly funded. Better implementation of the Environmental Code of the Philippines is strongly recommended⁶⁰.
- Institutionalization of environmental management into a local government environment office (MENRO) with regular funding if such an institution is not already in existence.
- Integrate disaster risk reduction, climate change adaptation and environmental measures into reconstruction works of all sectors⁶¹, considering the frequency of disasters affecting the Philippines and the potential long term impacts of climate change.
- In re-establishing livelihoods based on ecosystem services such as agriculture and fisheries, it is recommended that diversified strategies in these sectors be

⁵⁹ (Leyte main reference, though also touched on in Cebu (programme under agriculture), eastern Samar).

⁶⁰ Samar

⁶¹ (Leyte)

encouraged to build resilience in households and income generation and enhance food security⁶².

⁶² Leyte

**SUMMARY OF DAMAGES, LOSSES AND NEEDS OF THE CROSS-SECTORAL
DAMAGE**

CROSS SECTORAL DAMAGE	Government & DRRM	Macroeconomic Assessment	Social Impact Assessment	Environment Assessment	TOTAL
<i>Region IV-B</i>					
1. Northern Palawan	47,123,032.80	-	-	-	47,123,032.80
Sub-total	47,123,032.80	-	-	-	47,123,032.80
<i>Region VI</i>					
1. Aklan	-	-	-	13,823,835.00	13,823,835.00
2. Antique	-	-	-	20,013,285.00	20,013,285.00
3. Capiz	-	-	-	54,570,207.00	54,570,207.00
4. Iloilo	-	-	-	32,777,588.20	32,777,588.20
Sub-total	-	-	-	121,184,915.20	121,184,915.20
<i>Region VII</i>					
1. Northern Cebu	-	-	-	-	-
Sub-total	-	-	-	-	-
<i>Region VIII</i>					
1. Biliran	-	-	-	28,878,760.00	28,878,760.00
2. Leyte	2,127,796,393.46	-	-	93,559,973.25	2,221,356,366.71
2.1. Tacloban City	346,617,057.03	-	-	14,160,600.00	360,777,657.03
3. Southern Leyte	-	-	-	50,255,666.67	50,255,666.67
4. Eastern Samar	-	-	-	89,447,215.00	89,447,215.00
5. Samar	-	-	-	150,000,000.00	150,000,000.00
Sub-total	2,474,413,450.49	-	-	426,302,214.92	2,900,715,665.41
TOTAL	2,521,536,483.29	-	-	547,487,130.12	3,069,023,613.41

LOSSES

CROSS SECTORAL LOSSES	Government & DRRM	Macroeconomic Assessment	Social Impact Assessment	Environment Assessment	TOTAL
Region IV-B					
1. Northern Palawan	8,370,000.00	-	-	-	8,370,000.00
Sub-total	8,370,000.00	-	-	-	8,370,000.00
Region VI					
1. Aklan	-	-	-	-	-
2. Antique	-	-	-	-	-
3. Capiz	-	-	-	-	-
4. Iloilo	-	-	-	-	-
Sub-total	-	-	-	-	-
Region VII					
1. Northern Cebu	-	-	-	-	-
Sub-total	-	-	-	-	-
Region VIII					
1. Biliran	-	-	-	70,000.00	70,000.00
2. Leyte	1,226,066,872.77	-	-	2,221,282,590.00	3,447,349,462.77
2.1. Tacloban City	114,754,915.82	-	-	142,067,000.00	256,821,915.82
3. Southern Leyte	-	-	-	5,370,000.00	5,370,000.00
4. Eastern Samar	-	-	-	628,761,200.00	628,761,200.00
5. Samar	-	-	-	48,000,000.00	48,000,000.00
Sub-total	1,340,821,788.59	-	-	3,045,550,790.00	4,386,372,578.59
TOTAL	1,349,191,788.59	-	-	3,045,550,790.00	4,394,742,578.59

NEEDS

CROSS SECTORAL NEEDS	Government & DRRM	Macroeconomic Assessment	Social Impact Assessment	Environment Assessment	TOTAL
<i>Region IV-B</i>					
1. Northern Palawan	72,010,960.00	-	-	-	72,010,960.00
<i>Sub-total</i>	72,010,960.00	-	-	-	72,010,960.00
<i>Region VI</i>					
1. Aklan	-	-	-	6,894,577.00	6,894,577.00
2. Antique	-	-	-	6,362,040.00	6,362,040.00
3. Capiz	-	-	-	34,952,160.00	34,952,160.00
4. Iloilo	-	-	-	23,857,161.00	23,857,161.00
<i>Sub-total</i>	-	-	-	72,065,938.00	72,065,938.00
<i>Region VII</i>					
1. Northern Cebu	788,352,066.16	-	-	-	788,352,066.16
<i>Sub-total</i>	788,352,066.16	-	-	-	788,352,066.16
<i>Region VIII</i>					
1. Biliran	-	-	-	28,948,760.00	28,948,760.00
2. Leyte	3,830,698,160.69	-	-	100,198,970.00	3,930,897,130.69
2.1. Tacloban City	487,648,411.55	-	-	15,576,300.00	503,224,711.55
3. Southern Leyte	-	-	-	46,412,000.00	46,412,000.00
4. Eastern Samar	-	-	-	3,130,704,311.50	3,130,704,311.50
5. Samar	-	-	-	458,076,000.00	458,076,000.00
<i>Sub-total</i>	4,318,346,572.24	-	-	3,779,916,341.50	8,098,262,913.74
<i>TOTAL</i>	5,178,709,598.40	-	-	3,851,982,279.50	9,030,691,877.90