RECONSTRUCTION ASSISTANCE ON YOLANDA

Build Back Better

RECONSTRUCTION ASSISTANCE ON YOLANDA

16 December 2013

Table of Contents

Introduction 1
I. Typhoon Yolanda 1
A. The Disaster 1
B. The Human Impact 2
C. Immediate Response 3
II. Conditions in Affected Areas Before the Typhoon 3
III. Preliminary Assessment of Damage, Loss, and Needs 4
A. Methodology 4
B. Overall Damage, Loss, and Needs Estimates 5
Damage and Loss 5
Recovery and Reconstruction Needs 5
C. Damage, Loss and Needs by Sector 6
Infrastructure Sector 6
Roads, Bridges, Flood Control, and Government Buildings 6
Transport 7
Electricity 7
Water Supply and Sanitation 8
Economic Sector 9
Agriculture, Livestock, Fisheries, and Food Security 9
Trade, Industry, and Services 10
Social Sector 11
Education 11
Health and Nutrition 12
Housing and Shelter 13
Cross-Sectoral Impacts and Needs 13
Local Government and Community Infrastructure 13
Social Dimensions 13
Gender 14
Environment 14
IV. Economic and Social Impact 16
A. Macroeconomic Impact 16
B. Fiscal Impact 16
C. Poverty Impact 16
D. Impact on Employment and Incomes 17
V. Planning for Recovery and Reconstruction 18
A. Core Principles 18
B. Phased, Cumulative, and Flexible Response 18
C. Partnering with the Private Sector 19
D. Outcome-driven Implementation 20
E. Strengthening Disaster Risk Reduction and Management 21
F. Institutional Arrangements for RAY Implementation 21

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
CPA	Cebu Ports Authority
DA	Department of Agriculture
DaLA	Damage and Loss Assessment
DAR	Department of Agrarian Reform
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DILG	Department of the Interior and Local Government
DOH	Department of Health
DOLE	Department of Labor and Employment
DOTC	Department of Transport and Communications
DPWH	Department of Public Works and Highways
DRRM	Disaster Risk Reduction and Management
DSWD	Department of Social Welfare and Development
DTI	Department of Trade and Industry
EC	Electric Cooperatives
EDC	Energy Development Corporation
EU	European Union
GDP	Gross Domestic Product
GRDP	Gross Regional Domestic Product
HEI	Higher Education Institution
LGU	Local Government Unit
LWUA	Local Water Utilities Administration
MSME	Micro, Small and Medium Enterprises
NDRRMC	National Disaster Risk Reduction and Management Council
NEDA	National Economic and Development Authority
NGCP	National Grid Corporation of the Philippines
NPC	National Power Corporation
OIC	Organization of Islamic Cooperation
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PSWS	Public Storm Warning Signal
RAY	Recovery Assistance on Yolanda
TVI	Technical Vocational Institutions
UN	United Nations
UN-ECLAC	United Nations Economic Commission for Latin America and the Caribbean
WB	World Bank
WD	Water District

Introduction

1. Over the course of less than 24 hours on November 8, 2013, Typhoon Yolanda cut a swath of destruction across the central part of the Philippines, severely affecting areas in eastern, central, and western Visayas, and beyond to the northern part of Palawan. The typhoon precipitated a storm surge in the seas around the coastal towns of Eastern and Western Samar and Leyte that led to grave loss of life and massive damage to private and public assets.

2. The Government, working in close cooperation with international development partners, rapidly mounted an unprecedented humanitarian response to deliver relief assistance to more than four (4) million people displaced by the typhoon. While the immediate humanitarian response is likely to continue for some time, the Government recognizes the critical importance of starting recovery and reconstruction as soon as possible.

3. The Reconstruction Assistance on Yolanda (RAY) is the Government's strategic plan to guide the recovery and reconstruction of the economy, lives, and livelihoods in the affected areas. The objective of the plan is to restore the economic and social conditions of these areas at the very least to their pre-typhoon levels and to a higher level of disaster resilience. Outputs will include housing; infrastructure, facilities, and utilities; employment opportunities; assistance with livelihoods especially vulnerable workers in the agriculture and service sectors; and support for cross-cutting social and environmental objectives.

4. RAY provides the first synthesis of the overall economic impact of Typhoon Yolanda based on the best available data and information. The plan presents an estimate of the total economic damage and loss caused by Yolanda; its impact on the macroeconomy, poverty, incomes and employment; an assessment of short- and medium-term recovery and reconstruction needs; and a framework for implementation, including sequencing of interventions, and key policy assumptions. The implementation strategy that underpins RAY is phased, cumulative, and flexible. It is designed to take rapid action to address critical immediate needs, and to develop and implement a full set of recovery and reconstruction interventions over the short to medium term.

5. Section I of this document provides an overview of the disaster, the human impact, and the immediate humanitarian response of the Government and the international community. Section II describes the socioeconomic condition of typhoon-affected areas prior to the disaster. Section III presents an estimate of the overall economic impact of the disaster by using the internationally-recognized methodology for estimating damage and loss[1], as well as an initial calculation of overall recovery and reconstruction needs. Section IV presents estimates of the economy-wide and regional-level impacts of the disaster on poverty, incomes, and employment. Section V provides an overview of the plan with an outline of the guiding principles, programming priorities, and policy implications for RAY implementation.

I. Typhoon Yolanda

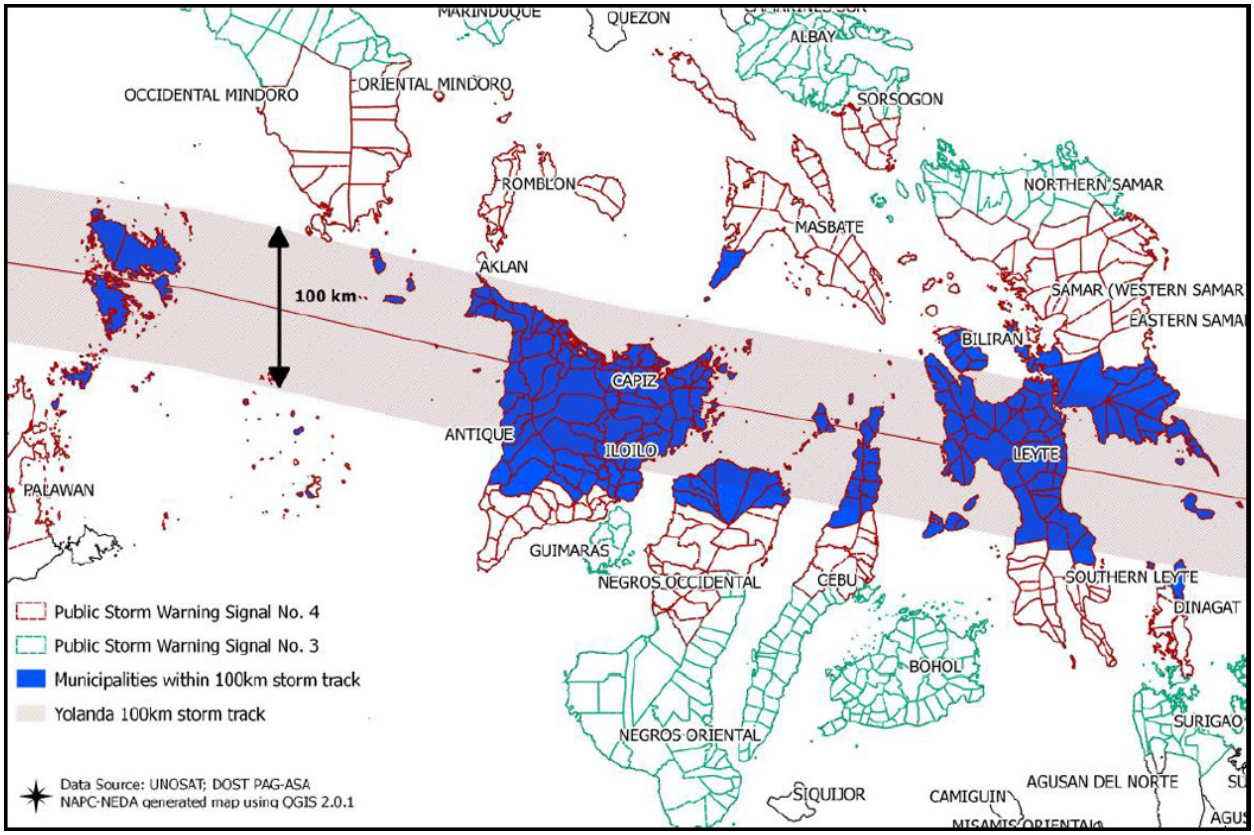
A. The Disaster

6. Typhoon Yolanda (internationally referred to as Haiyan) was one of the strongest storms ever recorded with wind speeds of more than 300 km/h and storm surges of over four (4) meters. The typhoon made its first of six (6) landfalls on Guiuan in Eastern Samar on November 8, 2013 and left the Philippine Area of Responsibility on November 9, 2013.

7. Nine (9) of the country's 17 administrative regions have been affected by the typhoon, covering 12,122 barangays in 44 provinces, 591

[1] *See UN-ECLAC. 2003. Handbook for Estimating the Socio-Economic and Environmental Effects of Disasters. United Nations Economic Commission for Latin America and the Caribbean*

Figure 1. Map of 100km Storm Track of Typhoon Yolanda



municipalities and 57 cities[2]. Along the southern coast of Eastern Samar and the coastal towns of the Leyte Gulf in Eastern and Western Samar and Leyte, there was devastating damage due to a storm surge that caused the destruction of many private houses, businesses and public buildings. The inland areas of Leyte, and Eastern and Western Samar, together with parts of the provinces of Cebu, Capiz, Iloilo, Aklan and Palawan, were severely affected by the destructive force of the wind. Though less severe, damage was recorded even beyond the 100-km storm track (Figure 1).

8. While recognizing that assistance is required across a wide area, the Government has identified 171 municipalities in 14 provinces and four (4) regions that are located within the 100-km storm track as priority areas for assistance, given the severity of the impact of the typhoon on these areas. RAY, therefore, presents information and analysis based on three related geographic areas: (a) all affected people and areas that reported damage in nine (9) affected administrative regions[3]; (b) background information on the six (6) administrative regions[4] where public storm warning signals (PSWS) number 3 or 4 were issued by PAGASA[5]; and, (c) 171 municipalities in 14 provinces and four (4) regions within 100 km of the storm track.

B. The Human Impact

9. An estimated 12.2 million people (2.6 million families) were reported to have been affected by the disaster (Table 1), with more than 90 percent

[2] *Essential data relating to Typhoon Yolanda reported in the RAY is based on NDRRMC Update: Situation Report (SitRep) No. 60, December 12, 2013, (available from www.ndrrmc.gov.ph).*

[3] *Regions IV-A (CALABARZON), IV-B (MIMAROPA), V (Bicol), VI (Western Visayas), VII (Central Visayas), VIII (Eastern Visayas), X (Northern Mindanao), XI (Davao Region) and XIII (CARAGA).*

[4] *The nine regions in footnote 3 less regions IV-A, X, and XI where the overall effects of Yolanda were small relative to the overall number of people affected.*

[5] *PAGASA raises PSWS number 3 when wind speeds are expected to be between 100-185 km/h, and PSWS number 4 when wind speeds are expected to exceed 185 km/h.*

Table 1. Geographic Areas and Total Number of Persons and Families Affected

Region	Number Affected						Percent of Total
	Provinces	Cities	Municipalities	Barangays	Families	Persons	
IV-A - CALABARZON	5	6	33	168	5,935	27,076	-
IV-B - MIMAROPA	5	2	62	793	101,006	466,120	4.00
V - Bicol	6	7	92	1,229	150,889	692,020	6.00
VI - Western Visayas	6	16	117	3,176	801,660	3,673,721	30.00
VII - Central Visayas	4	14	84	2,119	652,055	2,965,990	24.00
VIII - Eastern Visayas	6	7	137	4,387	850,080	4,271,726	35.00
X - Northern Mindanao	4	3	7	26	4,253	19,592	-
XI - Southern Mindanao	3	1	11	19	1,000	5,000	-
XIII - CARAGA	5	3	44	205	14,799	69,956	1.00
TOTAL	44	59	587	12,122	2,581,677	12,191,201	100.00

Source: NDRRMC Situation Report #60, as of December 12, 2013

of those affected in regions VI (Western Visayas), VII (Central Visayas), and VIII (Eastern Visayas). About 4.4 million people (930,000 families) were displaced, with 400,000 people housed in more than 1,500 evacuation centers[6]. As of December 12, the number of displaced had declined to just over four (4) million persons (869,742 families), of which about 93,814 people (21,669 families) were reported to be located in 384 evacuation centers.

10. As of December 12, 2013, there were 5,982 reported fatalities; more than 80 percent were from the three Leyte towns of Tacloban, Palo, and Tanauan. A further 27,022 people were reported injured, with 1,779 persons still missing.

11. A total of 1,192,091 houses are reported damaged, of which 593,785 are reported to have incurred more than 50 percent damage[7].

C. Immediate Response

12. Based on the recommendation of the National Disaster Risk Reduction and Management Council (NDRRMC), a Proclamation[8] declaring a National State of Calamity was issued on November 11 by President Benigno S. Aquino III. The proclamation covered areas affected by Yolanda, including the Samar provinces, Leyte, Cebu, Iloilo, Capiz, Aklan and Palawan. The State of National Calamity shall remain in force and effect until lifted by the President.

13. The Government has provided about PhP2.6 billion worth of relief assistance to families in the nine affected regions. A total of 35,417 personnel, 1,351 vehicles, 118 sea craft, 163 aircraft and 28,361 other assets from national, local, and foreign agencies, responders, and volunteer organizations have been deployed to various areas to support relief and medical operations[9].

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14. Governments from around the world have responded with generous support for the humanitarian relief efforts and early recovery initiatives. More than 60 countries, together with multilateral organizations (including the Asian Development Bank, European Union, Organization of Islamic Cooperation, United Nations, and the World Bank) have provided and continue to provide vital financial, material, and logistical support. As of December 12, foreign aid totaling more than PhP23 billion has been pledged, of which approximately PhP0.6 billion has so far been received[10].

15. A large number of local and international organizations and citizens from the Philippines and many other countries have been actively involved in the immediate response to Typhoon Yolanda, providing a wide range of assistance in cash and in kind. Offers of long-term assistance in the recovery and rehabilitation process continue to be received.

II. Conditions in Affected Areas Before the Typhoon

16. The economic output from the six (6) affected regions accounts for 17.4 percent of the country's GDP in 2012. The affected regions account for 26.8

[6] *NDRRMC SitRep No. 31, November 20, 2013.*

[7] *See footnote 2.*

[8] *Proclamation #682, s. 2013, Official Gazette of the Republic of the Philippines (www.gov.ph/)*

[9] *The numbers indicated are preliminary and are expected to change after validation.*

[10] *Details on pledges of foreign aid assistance are provided in the Foreign Aid Transparency Hub (www.gov.ph/faith).*

Table 2. Selected Economic Indicators for Yolanda-affected Regions, 2012

Region	GRDP/GDP (PhP Billion) at 2012 Current Prices	Share to GDP (percent)	Sector Share to National Output		
			Agriculture	Industry	Services
IV-B – MIMAROPA	180.20	1.70	3.60	2.00	1.20
V – Bicol	216.90	2.10	4.20	1.50	1.90
VI – Western Visayas	421.70	4.00	8.70	2.30	3.90
VII – Central Visayas	666.20	6.30	4.00	7.20	6.30
VIII – Eastern Visayas	228.20	2.20	4.00	2.70	1.50
XIII – CARAGA	122.50	1.20	2.30	1.20	1.00
Total of 6 regions	1,835.70	17.40	26.80	16.70	15.80
Philippines	*10,564.90*	*100.00*	*100.00*	*100.00*	*100.00*

Source: NSCB, Regional Accounts of the Philippines

percent of total agricultural output, 16.7 percent of industry, and 15.8 percent of services in the same year. Eastern Visayas contributed 4.0 percent, 2.7 percent and 1.5 percent of the national sectoral output in agriculture, industry, and services, respectively (Table 2). The main sources of livelihood in the six regions are agriculture, fisheries, and tourism.

17. The six (6) regions have a combined population of 29.5 million in 2012, representing 30.8 percent of the total Philippine population.

18. The typhoon's impact is concentrated on some of the poorest provinces in the country. Data in 2012 show that the average household income in the severely affected provinces was only 75 percent of the national average. Over 50 percent of the household incomes in the affected provinces is largely dependent on agricultural incomes and remittances.

19. Pre-disaster data also show that the affected regions have high rates of malnutrition. Eastern Visayas, for example, had the second highest rate of child mortality in the Philippines. It ranks below the national average in immunization coverage, skilled birth attendance and access to skilled antenatal care, while exhibiting some of the worst health outcomes, including higher than average incidence of diarrhea and fever among children. Many households in the Visayas lack access to safe water and sanitary toilet facilities.

20. Elementary enrolment in the affected regions is generally high, with most near or above the national enrolment rate of 91.2 percent. However, the regions, particularly Eastern Visayas, lag behind in cohort survival and completion rates. School leaver rate, that combines public and private elementary schools, is likewise among the highest at 8.0 percent, while the national average is around 2.9 percent.

III. Preliminary Assessment of Damage, Loss and Needs

A. Methodology

21. RAY is informed by the conduct of sector-level damage and loss assessments based on an internationally recognized post-disaster assessment methodology[11]. The damage and loss assessments were used to determine overall recovery and reconstruction needs based on the application of ratios of public to private ownership, and short- and medium-term recovery and reconstruction needs, by sector. The ratios were derived from and benchmarked against those used in comparable post-disaster assessments in the Philippines and other countries. The assessments have been drawn from the best available quantitative and qualitative data, recognizing that more detailed field-level assessments are still being conducted. When completed, the results of these assessments can be used to further refine the estimates contained in RAY and to inform detailed planning for program implementation.

22. The sectoral breakdown of damage, loss, and needs follows the System of National Accounts,. It has been simplified to reflect and highlight the major sectors affected by typhoon Yolanda.

[11] *See footnote 1.*

Table 3. Selected Demographic and Social Indicators for Yolanda-affected Regions, 2012

Region	Population ('000)	Share of Population to Philippines (percent)	Poverty incidence (percent)	Infant mortality rate (per 1,000 live births)	Elementary school enrolment rate
IV-B – MIMAROPA	2,841	3.00	31.00	39	91.10
V – Bicol	5,579	5.80	41.10	25	95.50
VI – Western Visayas	7,296	7.60	29.10	23	89.40
VII – Central Visayas	7,037	7.30	30.20	23	96.00
VIII – Eastern Visayas	4,208	4.40	45.20	40	96.00
XIII – CARAGA	2,502	2.60	40.30	33	96.60
Total/Ave for 6 regions	29,463	30.80	32.20	-	-
Philippines	*95,771*	*100.00*	*25.20*	*22*	*91.20*

Source: NSCB, Regional Accounts of the Philippines, FIES 2012, DOH, DepEd

The sectors are grouped into four: infrastructure, economic, social, and cross-sectoral.

B. Overall Damage, Loss, and Needs Estimates

Damage and Loss

23. The total damage and loss from typhoon Yolanda has been initially estimated at PhP571.1 billion (equivalent to US$12.9 billion[12]). About PhP424.3 billion of the total damage and loss represents the value of destroyed physical assets, while the remaining PhP146.5 billion represents reductions in production, sales, and income to date and in the near term. This also covers the value of increased operating costs resulting from the disaster, and other unexpected expenditures incurred (Table 4).The impact of typhoon Yolanda was most heavily felt by the economic and social sectors, which together sustained nearly 93 percent of the total damage and loss.

24. The private sector has borne the brunt of the impact of the disaster. About 90 percent of the total damage and loss has fallen on the private sector, with the remaining 10 percent on the public sector. The allocation of damage and loss by ownership has important implications on the estimation of needs and the design and implementation of RAY interventions.

Recovery and Reconstruction Needs

25. The overall resource needs for recovery and reconstruction have been initially estimated at PhP360.8 billion (equivalent to $8.2 billion) (Table 5). The needs for recovery and reconstruction have been estimated based on a preliminary analysis of the nature of the damage and loss. The needs for recovery are defined as the level of resources required to bring the economy back to its normal level of performance. These recovery needs typically require amounts that are equivalent to part of the estimated total losses in each sector, recognizing that a significant proportion of losses can no longer be recovered. Reconstruction needs represent the level of resources required to repair, build, and retrofit the physical assets destroyed by the disaster. As appropriate, the value of estimated damage is adjusted upwards to incorporate quality improvements, adoption of affordable disaster-resilient standards and relocation of facilities to safe areas.

26. The estimated total needs include both the public and private sector requirements. In the case of the public sector, both central and local government needs have been identified. Public sector actions are needed not only to address its own needs but also those of the private sector. The public sector has an important role to play in facilitating and supporting private recovery and reconstruction.

27. The private sector will be a major source of finance for these needs, even as the commitment of public resources induces households and enterprises to quicken asset restoration. There are still no estimates of the scale and pace of private financing. In certain important respects, the extent of the complementary private response to the public financing of recovery and reconstruction will depend on how the public sector decides to intervene in each sector.

[12] *BankoSentral exchange rate of US1=PhP44.135, as of December 12, 2013.*

Table 4. Damage and Loss by Sector and Type of Ownership

Sector	Damage and Loss (PhP Million)				
	Damage		Loss		Total
	Public	Private	Public	Private	
Infrastructure Sectors	16,024.30	4,285.00	7,108.40	6,565.40	33,983.00
Electricity	5,329.30	1,500.00	4,575.20	4,126.40	15,530.90
Roads, bridges, flood control and public	4,255.20	-	322.90	-	4,578.10
Transport	6,010.80	216.00	24.30	-	6,251.10
Water and sanitation	429.00	2,569.00	2,186.00	2,439.00	7,623.00
Economic Sectors	3,743.50	67,560.00	87.00	106,716.60	178,107.10
Agriculture	3,743.50	27,560.00	87.00	30,716.60	62,107.10
Industry, Services	-	40,000.00	-	76,000.00	116,000.00
Social Sectors	23,175.30	305,472.10	3,442.30	22,628.80	354,718.50
Education	17,953.50	3,726.20	1,303.90	916.30	23,899.90
Health	1,170.80	1,959.90	1,932.40	510.50	5,573.60
Housing	4,051.00	299,786.00	206.00	21,202.00	325,245.00
Cross-sectoral	4,000.00	-	300.00	-	4,300.00
Local Government	4,000.00	-	300.00	-	4,300.00
Total (PhP Million)	**46,943.00**	**377,317.10**	**10,937.10**	**135,910.80**	**571,108.50**
Total (US$ Million)	1,063.60	8,549.20	247.80	3,079.40	12,940.00

Note: Data from some sectors are incomplete due to ongoing field assessments. These are indicated in the sectoral sub-sections..

C. Damage, Loss, and Needs by Sector

Infrastructure Sector[13]

Roads, Bridges, Flood Control, and Government Buildings

28. The national primary arterial roads include 6,728 km in the affected area equivalent to 42 percent of the national total of 16,056 km. The national secondary roads (NSR) in the affected area comprise 5,583 km or 36 percent of the national total NSR of 15,541 km. The affected area includes 3,357 bridges, 42 percent of the national total. The local roads in the affected area total about 65,000 km, representing 38 percent of the national total. The local road network consists of barangay or village/farm-to-market roads, provincial roads, city roads, and municipal roads.

29. Damage to national and local roads, bridges, flood control and public buildings totals PhP4,255.2 million (Table 6), with PhP952.7 million on national roads and bridges and PhP1,154.5 million on local roads. Impact, in general, is limited to debris and downed utility poles and lines which blocked the roadway and delayed relief operations for a few days. Some storm surge- or rain-triggered earth movement/washouts were also reported. An estimated 15 percent of road sections and eight (8) bridges, were affected. In addition, the DPWH has conducted technical assessments of the flood control structures in the six (6) most affected Regions and has identified a total of PhP307.5 million in public flood structure facility damage. Of this figure, Region VIII incurred the most damage amounting to PhP145.00 million. The DPWH assessment of central government facilities in the affected areas that were not covered by the LGU assessments total PhP1,840.51 million.

30. Total recovery and reconstruction needs are estimated at PhP5,170.8 million, which includes a provision for enhanced disaster resilience as part of reconstruction costs.

31. The cost of restoring and reconstructing roads and bridges, based on the damage assessments to date, represents between 3 and 6 percent of the annual budget in the three worst hit regions. With reallocation, plus any special funding, it is anticipated that the repairs would be completed within one year. Priority will be given to national primary arterial roads and bridges, and to sections of the other national roads that provide critical access to activities in the affected areas. The costs of restoring the local roads and bridges, however,

[13] *It was not possible to compile estimates for damage and loss to the telecommunications sector, which is mostly privately owned, as data were not available at the time of publication.*

Table 5. Estimated Recovery and Reconstruction Needs*

Sector	Needs (PhP Million)		
	Recovery	Reconstruction	Total
Infrastructure Sectors	3,654.90	24,670.90	28,325.80
Electricity	1,740.30	8,195.20	9,935.50
Roads, bridges, flood control and public buildings	64.60	5,106.20	5,170.80
Transport	-	7,472.10	7,472.10
Water and sanitation	1,850.00	3,897.40	5,747.40
Economic Sectors	38,201.80	51,278.40	89,480.20
Agriculture	15,401.80	3,278.40	18,680.20
Industry, Services	22,800.00	48,000.00	70,800.00
Social Sectors	-	220,388.90	220,388.90
Education	-	30,351.60	30,351.60
Health	-	6,887.40	6,887.40
Housing	-	183,149.90	183,149.90
Cross-sectoral	18,700.00	4,000.00	22,700.00
Local Government	300.00	4,000.00	4,300.00
Social Protection	18,400.00	-	18,400.00
Total (PhP Million)	**60,556.70**	**300,338.20**	**360,894.90**
Total (US$ Million)	1,372.10	6,805.00	8,177.10

** Estimates of needs are based on submissions from national government agency-led sector teams. In some cases, adjustments were made to fully reflect the costs of addressing estimated damage and loss, e.g., integrating disaster resilient standards into the reconstruction needs for some sectors; providing for a higher allocation to address the estimated income losses in the agriculture enterprise sectors; and additional needs for social protection.*

are likely to represent a higher percentage of annual road-related budgets in the affected Local Government Units (LGUs).

Transport

32. 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).

33. Damage to ports is estimated at PhP515.6 million (Table 7). While the PPA ports were reported to be partially damaged and operational, the lighter structures of the municipal ports were severely damaged by Typhoon Yolanda and not operational. Port loss was estimated at PhP24.3 million.

34. Airports. Of the forty (40) airports in the affected area, one (1) is classified as an international airport, eight (8) are trunk-line, sixteen (16) are secondary and fifteen (15) are feeder airports.

35. Damage to airports is estimated at PhP5,697.8 million with considerable damage to Tacloban airport, which was inundated by the storm surge, and other airports within the storm's path including Ormoc, Kalibo International, Busuanga, Guiuan and Roxas (Table 7).

36. Total reconstruction needs for affected ports and airports are estimated at PhP7,472.1 million.

Electricity

37. Total damage to the electricity sector was estimated at PhP6,830 million, of which the distribution sector comprises PhP5,200 million and the balance of PhP1,630 million is divided

Table 6. Damage, Loss and Needs of the Roads and Bridges Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	4,255.20	322.90	4,578.10	64.60	5,106.20	5,170.80
US$ Million	96.40	7.30	103.70	1.50	115.70	117.20

between generation and transmission (Table 8). The distribution facilities operated by the electricity cooperatives (EC) were the hardest hit amounting to almost 76 percent of the total damage to the energy sector. Most of the damage was in the supply of electricity to the residential consumers and public buildings. Of the 33 ECs that were affected by Yolanda, 12 are totally damaged and 21 are partially damaged. Four ECs located in Leyte suffered the most damage and accounted for 52 percent of the total damages.

38. The National Grid Corporation of the Philippines (NGCP) has reported a damage assessment of PhP1,500 million which comprises 248 transmission towers, 376 poles, and seven substations.

39. The Unified Leyte geothermal power plant complex which supplies one-third of the electricity demand in the Visayas suffered substantial damage. The Energy Development Corporation (EDC) estimates that the downtime before the plants return to full capacity could last for as long as 12 months. While the National Power Corporation's (NPC) off-grid facilities suffered a minor overall damage of PhP7.26 million, the damage caused by their Power Barge 103, which was ripped from its mooring site along the Estancia coastline and forcefully rammed onto the shore, amounted to PhP117.2 million.

40. The losses in the private sector are estimated to be about five times those of the public sector. Preliminary assessments show overall losses to be approximately PhP8,700 million, with 88 percent attributed to the distribution subsector. These significantly higher losses are primarily due to loss of income for the 33 ECs and their approximately 760,000 residential customers who lost their connections. The balance of PhP1,000 million is due to the revenue loss of Unified Leyte.

41. The short-term needs of the energy sector are: (a) access to electricity for those who are residing in temporary or transitional shelters; (b) repair and rehabilitation of damaged distribution and transmission networks, and public and private service connections; restoration of interconnection links to full capacity operating levels in all islands.

42. The medium-term needs of the energy sector are: (a) preparation of disaster-resilient designs for power infrastructure which will be reconstructed; (b) review of the longer-term demand forecast for the affected regions, and (c) preparation of reconstruction investment plans which include climate-proofing and building back better.

Water Supply and Sanitation

43. Typhoon Yolanda affected over 170 cities and municipalities in six (6) regions. According to the Local Water Utilities Administration (LWUA), 70 water districts (WDs) serve 91 of these LGUs in the affected areas and provide majority of the piped water supply. WD service connections total 200,000. Aside from Metro Roxas (serving Roxas City and 3 other towns, 34,685 connections), Leyte Metro WD (serving Tacloban and 8 other towns, 29,345) and Kalibo WD (21,128), most of the other WDs are small with less than 3,000 connections. LGUs, which are not serviced by WDs, operate their own water utilities. Sanitation is left to individual households, usually provided by latrines or toilets with septic tanks, as off-site sanitation by sewerage is not available.

44. LWUA fielded response teams to assess damage in the 70 WDs and noted that three (3) are not

Table 7. Damage, Loss and Needs of the Transport sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	6,226.80	24.30	6,251.10	-	7,472.10	7,472.10
US$ Million	141.10	0.60	141.60	-	169.30	169.30

Table 8. Damage, Loss and Needs of the Electricity Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	6,829.30	8,701.60	15,530.90	1,740.30	8,195.20	9,935.50
US$ Million	154.70	197.20	351.90	39.40	185.70	225.10

affected, 23 WDs are operational (including the three largest WDs), 31 are partially operational, and 13 are not operational (3 of these are operated by LGUs). The damage suffered was relatively minor, mainly in the above-ground structures and equipment, and some water sources, reservoirs and transmission pipelines. The major below-ground infrastructure (i.e., water distribution networks) was generally undamaged. Based on feedback from most of the LGUs, only 19 reported damage to their water supply systems, with a relatively low damage estimate. Additional public sector damage was also calculated for shallow wells and pumps administered by barangays or community/water user groups. This was based on an estimated cost of PhP100,000 for each public Level I or II water supply system, and on the assumption that there are five facilities per barangay and that 25 percent will need to be replaced.

45. Total damage was estimated at PhP2,998.0 million, with PhP2,569.0 million due to damage to private connections based on the number of houses that were totally or partially destroyed, and equipment loss.

46. Losses for the sector have been estimated, taking into consideration the operating losses for most water utilities and small-scale operators during the recovery and reconstruction period, and accounting for the increased cost of water for the private sector (i.e., households) until pre-disaster supply levels are restored.

47. The recovery and reconstruction needs of the sector are estimated at PhP5,747.4 million, with PhP1,850 million needed for recovery and PhP3,897.4 million needed for reconstruction (Table 9). Much of the recovery and reconstruction started immediately after the typhoon. In the short term, priorities will be to reestablish basic services by repairing damaged facilities and reconnecting and providing people with potable water supply. In the medium term, reconstruction will focus on structural and non-structural measures for climate proofing, building-back-better, enhancing resilience of water supply, and upgrading sanitation.

Economic Sector

Agriculture, Livestock, Fisheries, and Food Security

48. A total area of about 600,000 hectares of agricultural lands have been affected and an estimated 1.1 million MT of crops have been lost, of which 80 percent has been reported to be in Region VIII. Principal crops in the most badly affected areas of Regions VI, VII, VIII were: palay (16% of crop area); corn (4% of crop area); and, coconut (73% of crop area). The most significant damage was for coconut, where damage was recorded over a wide area on 441,517 hectares, of which 161,400 hectares is considered totally damaged (Table 10). In addition, losses were reported for livestock, agricultural equipment, post-production facilities and fishing vessels and equipment losses, as well as damage to irrigation systems, and rural infrastructure.

49. Total damage to the agriculture sector, based on partial reports, is estimated at PhP31,130 million, including damage (production losses) to crops, fisheries and livestock of PhP27,070 million and damage to infrastructure of PhP4,058 million, including irrigation systems and other facilities.

50. The timing of the typhoon, occurring in early November, will likely result in significant foregone production of the early 2014 palay crop season. This is likely to have knock-on effects on the late 2014 season crop due to damage to paddy land and irrigation systems; low viability/availability of rice seed; loss of draught animals, tools and farm equipment; farmers' inability to afford fertilizer purchases; and, reduced availability of labor due to home rebuilding requirements and displacement of casual labor. For coconut and mango, given the time required to re-establish plantation production (typically 6-9 years for new coconut), the losses in terms of foregone production are likely to be significant. Similarly, fisheries have been heavily damaged resulting in lower fish catches due to the impact of the storm on boats, wharves and equipment, and to reefs and coastal mangrove

Table 9. Damage, Loss and Needs of the Water Supply and Sanitation Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	2,998.00	4,625.00	7,623.00	1,850.00	3,897.40	5,747.40
US$ Million	67.90	104.80	172.70	41.90	88.30	130.20

forests. Based on estimates of the future loss in agricultural production, total loss is placed at PhP30,803.6 million.

51. The overall recovery and reconstruction needs for the agriculture sector are estimated at PhP18,680.2 million (Table 11). The immediate need for recovery is to provide assistance to farmers to establish field/annual and plantation crops. Clearing of fields and coconut plantations will be undertaken through cash for work. Seeds and fertilizers will be procured and tractors will be provided for the dry-season crop (palay and corn), as well as fertilizer for partially-damaged coconut. For damaged coconut, assistance will be provided to reestablish plantations, with intercropping in the short- to medium-term, to provide alternative livelihoods for farmers. For fisheries, assistance will be provided for the worst affected areas through food packs, shelter, materials to repair/rebuild boats, motor boats, fishing gear, and lines and cages, and tools for seaweed culture. Reconstruction will focus on repairing damaged infrastructure (irrigation systems, fish ports, offices), replacing equipment, and distributing poultry and draft animals.

52. Financing of operating capital for farms and enterprises will also be an important concern in the near term, considering that households that operate micro-enterprises and farms have lost regular sources of incomes and both informal and formal lenders are expected to have suffered significant default on loans.

Trade, Industry, and Services

53. The service and industry sector in the Visayas is comprised of retailing, trading, tourism, agriculture processing, manufacturing and a wide range of cottage and craft industries. The combined share of service sector to GDP in these areas was 11.7 percent in 2012, while the industrial sector contributed 12.2 percent. Western and Central Visayas (Region VI and VII) led the growth in the past three years for the Visayas at 10 percent and 11 percent, respectively with a vibrant trade and retail hub in Tacloban City. The sector is key to tapping the region's productive economic base, facilitating economic transactions, and forms components of the value and supply chain including input supply, production, marketing, and services and is the major source of employment.

54. Preliminary estimates put the value of damaged private business' fixed capital assets at PhP40,000.0 million (Table 12). The assessment of the damage on the private sector is ongoing. Banks are assessing the impact on their portfolios and insurance companies are assessing the losses. The reconstruction of public utilities and restoration of public services such as transport, power and water will play a significant role in the recovery of the industry. The typhoon caused physical damage to transport, communication and power infrastructure, and brought destruction to manufacturers, processers, service providers, cottage industries, and informal businesses. These resulted in losses in employment and income as well as disruption of

Table 10. Damage and production losses in affected areas

Crop	Area Harvested (ha)	Lost Production ('000 MT)	Value of Lost Production (PhP Million)	Livestock/ Fishery	Lost Production (PhP Million)
Palay	106,414	199.20	3,235	Livestock	2,246
Corn	23,949	24.10	344		
Coconut	441,517	726.40	17,825		
Casava	6,238	13.30	93		
Banana	14,755	102.20	1,495	Fisheries	1,493

Data apply to Regions IV-A, IV-B, V, VI, VII and VIII, X, XI and CARAGA
Source: DA-MID (as of 4 December 2013)

Table 11. Damage, Loss and Needs of the Agriculture Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	31,303.50	30,803.60	62,107.10	15,401.80	3,278.40	18,680.20
US$ Million	709.30	697.90	1,407.20	349.00	74.30	423.30

markets and supply and value chains. Large scale fertilizer and copper processors in Eastern Visayas were affected by interruption in electricity supply and port access for raw materials and for export of finished products. Affected SMEs include corn and sugar milling, coconut oil extraction, alcohol distilling, beverage manufacture and forest products. By far, the largest proportion of businesses affected were micro and home based. Regional DTI offices reported that 58 percent of businesses in Western Visayas were affected, 20 percent in Palawan and Occidental Mindoro, 30 percent in Central Visayas, and 80 percent in Eastern Visayas.

55. Micro- and cottage industries as well as traders affected by typhoon Yolanda need asset replacement, working capital for materials and stocks. The two key challenges for businesses to revive economic activity relate to asset replacement to repair damage to their pre-typhoon state and working capital to reverse and recover losses. A small portion of businesses had formal access to finance prior to the crisis, with small, micro and informal businesses who are unable to access finance due to lack of collateral and temporary loss of income generating ability. Needs for support include loan restructuring and refinancing, guarantees, financing for MSMEs through cooperatives and microfinance institutions and targeted MSME support.

Social Sector

Education

56. There is a large number of elementary and secondary schools, higher education institutions (HEIs) and technical vocational institutions (TVIs) in the typhoon-affected areas. There are about 4,357 elementary schools, 888 secondary schools, 350 HEIs and 631 TVIs. Enrolment in the four (4) regions, as of June 2013, was 1,167,466 at the elementary level, 498,220 at the secondary level, 141,033 in HEIs, and 25,745 in 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.

57. The total damage in the education sector is estimated at PhP21,679.7 million (Table 13), with damage to public basic education school infrastructure at PhP11,400 million. About 5,898 classrooms were fully damaged and 14,508 partially damaged in 2,905 public elementary and 470 public secondary schools in the most affected areas. The cost of damage also include the contents (e.g., public school furniture, computers, learning materials, science and math equipment, technical-vocational tools and equipment) and basic facilities (e.g., water and sanitation), which is roughly estimated at PhP2,680 million. Total damage estimates in basic education amounted to PhP16,290 million, of which the public component of the total damage is PhP14,080 million while the private component is PhP2,210 million. Eastern Visayas sustained the most significant damage in terms of educational facilities and other assets.

58. The total damage to HEIs and TVIs is estimated at PhP5,390 million, with damage to HEIs estimated at PhP4,840 million and TVIs at PhP551.8 million. The public HEIs account for 72 percent of the damage for HEIs and 15 percent of the damage for the TVIs; while the private sector accounts for the remaining 18 percent of damage for HEIs and 85 percent of the damage for TVIs.

Table 12. Damage, Loss and Needs of the Trade, Industry and Services Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	40,000.00	76,000.00	116,000.00	22,800.00	48,000.00	70,800.00
US$ Million	906.30	1,722.00	2,628.30	516.60	1,087.60	1,604.20

Table 13. Damage, Loss and Needs of the Education Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	21,679.70	2,220.20	23,899.90	-	30,351.60	30,351.60
US$ Million	491.20	50.30	541.50	-	687.70	687.70

59. The estimated losses in the education sector cover: (a) forgone revenues, especially for the private schools/institutions; (b) the cost of urgent repairs of schools; (c) provision of alternative learning spaces for the affected/displaced children; (d) additional expenses to restore delivery of services to compensate for the delays due to the disaster; (e) cleanup costs; and (f) higher operational cost for the use of generator sets and temporary water supply facilities. The estimated losses in basic education amount to PhP617.0 million, PhP1,385 million in higher education, and PhP219 million in technical-vocational education. The total losses in the education sector amounted to PhP2,220 million. The public sector accounts for nearly 60 percent of these losses.

60. Total recovery and reconstruction needs amount to PhP30,352 million across the three levels. Disaster and climate resilience factors have been incorporated into the costs of both repair and reconstruction.

Health and Nutrition

61. The health and nutrition condition in the Yolanda affected areas is uneven, e.g., full child immunization rates range from 54 percent to 87 percent (national average 85 percent); percentage of deliveries attended by skilled health professionals ranges from 39 percent to 100 percent (national average 72.2 percent); and the TB cure rate in the affected areas ranges from 64 percent to 96 percent (national average 83 percent). Communicable diseases also continue to pose a threat in areas affected by Typhoon Yolanda, with schistosomiasis prevalent in 62 municipalities and malaria endemic in Palawan.

62. The damage to infrastructure and equipment in public and private health facilities has been assessed in the regions identified to be the most affected. Partial report on damage covers 296 barangay health stations, 97 rural health units, 38 hospitals, and one (1) Center for Health Development in Region VIII. This totals to PhP1,170.8 million broken down to PhP863.7 million for infrastructure and PhP307.0 million for equipment (Table 14). The estimated damage to private health facilities amounts to PhP1,959.9 million (PhP858.6 million for infrastructure and PhP1,101.3 million for medicines and equipment). This includes facilities, such as hospital, drugstores and the inventory of medicines, and wholesale facilities.

63. The total loss is estimated at PhP2,442.9 million for the health and nutrition sector. The public sector accounts for 79 percent of the losses and the private sector for the remaining 11 percent. Losses include demolition and rubble removal, deployment of medical teams, treatment of injuries, mental health and psychosocial support, temporary consultation services for the displaced population, outbreak surveillance, health promotion, prevention and control of diseases, augmentation of health workforce, and revenue loss.

64. The total needs for reconstruction of the health sector is currently estimated at PhP6,887 million, including additional costs for disaster resilience. These cover the repair and reconstruction of public facilities to their pre-disaster state, risk reduction and community resilience, support for health services, mental health and psychosocial support, and governance strengthening.

Table 14. Damage, Loss and Needs of the Health and Nutrition Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	3,130.70	2,442.90	5,573.60	-	6,887.40	6,887.40
US$ Million	70.90	55.40	126.30	-	156.10	156.10

Table 15. Damage, Loss and Needs of the Housing Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	303,837.00	21,408.00	325,245.00	-	183,149.90	183,149.90
US$ Million	6,884.30	485.10	7,369.30	-	4,149.80	4,149.80

Housing and Shelter

65. Nearly 30 percent (4.4 million) of the total population of 16 million in the 14 most affected provinces were displaced. A total of 1,012,790 houses were damaged; of which 493,912 were partially damaged and 518,878 were totally damaged. The cost for damaged houses is estimated at PhP303,837.0 million (Table 15). Of this amount, PhP299,785.8 million is privately owned, while PhP4,051.2 million is publicly owned.

66. Total losses are estimated at PhP21,408.4 million with PhP206.0 million representing public losses and PhP21,202.4 million representing private losses. The public loss assessment covers immediate home material assistance provided to the affected households and cost of temporary bunkhouses. The private loss assessment covers temporary shelters provided by international relief organizations, residents' losses due to demolition and debris removal and landlords' losses due to temporary loss of rental income.

67. The full range of needs for the recovery and reconstruction of the housing sector is estimated to be PhP183,149.9 million. This amount is underpinned by an assumption that improved design and standards that meet a higher level of resilience would be adopted, making use as much as possible of a self-recovery approach and the creative energy of communities. It takes into account that households can avail themselves of support across the phases of recovery at the household level – from emergency, transition, to full recovery and reconstruction. It also takes into full account all of the associated costs, such as the provision of basic utilities, and the overhead cost for implementation.

Cross-Sectoral Impact and Needs

Local Government and Community Infrastructure

68. LGUs across the affected area suffered destruction and damage of physical assets, and widespread disruption of services. The total damage to the local government sector is estimated as PhP4,000.0 million (Table 16). A range of LGU infrastructure was damaged, including municipal and barangay halls, gymnasia and multi-purpose buildings, public markets, transport terminals, and fire stations. Coastal towns and cities affected by the storm surge experienced massive destruction which will make recovery and reconstruction particularly challenging.

69. Estimated loss of PhP300.0 million includes reductions in tax revenues and other local income as well as additional operating costs and restoration costs: (a) reduced own-source revenue collections resulting from the disasters; (b) costs of restoring the functions of offices whose operations were disrupted due to the disasters; and (c) higher operational costs for operating offices in the period following the storms.

70. Many LGUs have had public records damaged or destroyed during the typhoon, such as land titles, birth and other citizenship-related documents, and local licenses. Resources will be required to reconstruct and/or re-issue such records.

Social Dimensions

71. It is too early to have a full understanding of the social impact of Yolanda. Early qualitative assessment, for example, the United Nations Multi-

Table 16. Damage, Loss and Needs of the Local Government Sector

Currency	Damage and Loss			Needs		
	Damage	Loss	Total	Recovery	Reconstruction	Total
PhP Million	4,000.00	300.00	4,300.00	300.00	4,000.00	4,300.00
US$ Million	90.60	6.80	97.40	6.80	90.60	97.40

Cluster Initial Rapid Assessment, has highlighted some of the important social dimensions of the disaster. Groups that face particularly difficult challenges in recovering from the typhoon include informal settlers living in makeshift houses along the coastal easements, rural poor living in remote areas, farmers (especially coconut farmers from areas where coconut trees have been totally damaged), fisherfolk, and rural workers whose livelihoods have been depleted. Apart from loss of homes and assets, the loss of legal and personal documents, lack of means to communicate between family members, and temporary lack of adequate physical protection in particular areas may compound disaster victims' vulnerability.

72. Fisherfolk who dwell along the coasts naturally prefer to also remain within the vicinity of the sea. They are usually the most numerous class of people in any town in the Visayas who are exposed to the kinds of destructive forces that Yolanda brought. Their boats are moored on the coasts and that is also where they repair their nets. It would be ideal if safer settlement sites can be found or constructed in the immediate vicinity of the coasts. New kinds of social problems would, however, emerge if fisherfolk lose access to their livelihoods. Affected families are also likely to experience other non-income effects of rising poverty and vulnerability that include food insecurity and worsening nutrition; disruption to education and loss of human capital; out migration; increased child labor and other exploitative labor practices; and increased levels of indebtedness.

73. As has been the case in previous disasters, it is likely that domestic and international remittances through family and community networks will play an important role in helping many families get back on their feet. The poor typically have less access to such support networks. In disaster situations, poor families instead often rely on selling assets, but with the widespread damage caused by Yolanda it is likely this option is not available for many poor households.

74. Emergency and short-term income support while recovery and reconstruction proceeds will help address immediate household needs for food, shelter, and other necessities. The cash-for-work programs of DSWD, DOLE, and DA will all play an important role in helping families through the immediate aftermath of the disaster and until income flows to households from agriculture and enterprises recover to levels that are sufficient to secure resources for basic needs. Complementary programs for the medium term can help households progressively rebuild their assets through better access to credit; provide training programs to equip households with new marketable skills; and support the transition to established social protection programs, such the *Pantawid Pamilya* program.

75. Additional programs will also aim to secure nutrition and the provision of essential health services. Information to be provided through community groups on post-trauma stress, coupled with additional services to assist households and communities to recover from psychosocial impacts of the typhoon, are essential to the process of healing and getting the survivors back on their feet again.

Gender

76. The typhoon's impact also has important gender implications. Women and men, girls and boys, experienced the impact of Typhoon Yolanda differently based on pre-existing social norms and cultural values and limited self-rescue or rehabilitation abilities due to differences in learned capabilities, which may restrict the choices, behavior and opportunities of women and girls. Specific damage and loss for women include property; assets used for home-based business; backyard economy assets and base; the additional time spent in hauling water and collecting firewood as usual sources are damaged; and caring for children where schools are closed. While the economic cost of lost or damaged assets is included in the sector assessments, the traditional DaLA approach tends to undervalue women's economic contribution. Gender needs will be addressed by ensuring that gender considerations, based on adequate gender analysis, are mainstreamed into the design and implementation of all post-disaster interventions.

Environment

77. Storm surge and flooding caused land damage. Parts of the low-lying islands were completely inundated; roads were blocked due to debris. Wood is being recovered as building materials for temporary shelter, and residual debris has been temporarily stockpiled at roadsides in the absence of landfill/solid waste disposal sites. The estimated

cost of solid waste clearing for Tacloban City is PhP53 million.

78. An oil spill occurred in Estancia, Iloilo, after a National Power Corporation (NPC) barge hit the shoreline due to the force of Typhoon Yolanda, and oil has leaked from the barge. The estimated cost of clean-up is PhP87 million. There is also potential hazardous waste from damaged power transmission and distribution facilities, but there are no reports of oil leakages from transformers. There is presently no information available on the status of other hazardous wastes.

79. Major fishing zones include the Philippine Sea, Leyte Gulf, and the bays of Matarinao, Quinapondan, Oras, and San Policarpio. These fisheries rely on the integrity of the coral reefs, which have been severely damaged (estimated at 1,555 sq/km, valued at PhP570 million). Tuna producing municipalities in Eastern Samar are severely affected, as are freshwater fish ponds in Guiuan. In Iloilo and Capiz, oyster ponds were damaged by the storm surge. Aside from damage to fish habitats (estimated environmental damage PhP103 million), coastal land was modified during the storm surge. There has been considerable loss of fishing infrastructure such as jetties and boats. River and creek estuaries have been clogged with debris, mud, and silt. Possible changes in river flow patterns might increase vulnerability to flooding of low-lying coastal areas. Surface and groundwater are the major sources of domestic water in the affected areas. Scattered debris, dead bodies, and damaged storage facilities of oil and chemicals may have leaked contaminants into the ground water. However, there is no information available regarding groundwater quality.

80. Initial assessment shows that damage to natural parks and protected areas occurred mostly in the areas of the Tikling Island Marine Sanctuary, Guiuan Protected Seascape, and the Manicane Genetic Reserve. Damaged mangroves, important nursery and feeding grounds for coastal and riverine fisheries, are located in many coastal areas, and DENR plans to restore mangrove and beach forests in about 380 km of coastline in Eastern Visayas and Leyte and other affected areas. DENR estimates PhP347 million for restoration of mangrove and natural beach forests in coastal areas.

81. The DENR and Provincial Environment Office in Palo, Leyte was severely damaged by the storm surge. This office also hosts many government agencies. Most government records, computers, and equipment have been damaged/destroyed which has severely hampered DENR's regulatory functions. The replacement cost is valued at PhP60 million.

82. The impact of the environmental damage caused by Typhoon Yolanda needs to be incorporated into planning. Issues such as land use planning,

Table 17. Total Cost of Damage and Impact on GDP and GRDP in 2013

Regions	Total Cost of Damage and Loss in 2013 (PhP Billion)	Percent to 2013 GDP/GRDP
Philippines	**101.79**	**0.90**
Region IV-A - CALABARZON	0.14	0.00
Region IV-B - MIMAROPA	5.08	2.50
Region V - Bicol	2.02	0.80
Region VI - Western Visayas	33.31	7.30
Region VII - Central Visayas	11.62	1.70
Region VIII - Eastern Visayas	48.79	17.40
Region XIII - CARAGA	0.83	0.70

Notes:

i. Details do not add up to total cost due to rounding.

ii. Total cost of damage includes direct damage to properties and infrastructures, direct and indirect production losses based on latest NDRRMC Situational Report.

iii. Estimated production losses assumed three (3) to (5) workdays lost in affected Regions IV-B, V, VI, VII, and XIII. Regions VI and VII suffered the greatest damage, with Region VIII assuming no workdays until the end of the month of November and 0 to 50 percent resumption of work for December.

geo-hazard mapping and assessment, ecosystem recovery, and disaster resilience of communities should be taken into consideration in reconstruction planning.

IV. Economic and Social Impact

A. Macroeconomic Impact

83. The damage from typhoon Yolanda and the resulting loss in 2013 is estimated to be Php101.79 billion, representing 0.9 percent of Gross Domestic Product (GDP). This may reduce the country's economic growth rate by -0.3 percentage point in 2013 and by another -0.3 percentage point in 2014, depending on how quickly the damaged assets are reconstructed and economic activity is resumed.

84. Among the regions, VIII, VI, and VII were the hardest hit (Table 17). Eastern Visayas bore the highest amount of damage and losses, estimated at around PhP 48.79 billion. This represents 17.4 percent of the GRDP expected for 2013. Western Visayas and Central Visayas also sustained huge damage and losses, estimated at Php 33.31billion and PhP11.62 billion, respectively.

B. Fiscal Impact

85. Economic and social costs create pressure on fiscal policy in two ways. First, the national government has to provide additional funding and reallocate manpower to support emergency relief efforts. Second, the recovery and reconstruction is expected to impact on the fiscal deficit in the next two or three years.

86. Beginning November 2013, national government infused additional public spending to finance emergency relief efforts. The relief efforts are expected to continue until March 2014. The national government has also allocated spending for rehabilitation of infrastructure, basic services, schools and institutions, and reconstruction of infrastructure and housing to start in December 2013 or early 2014. Some national government personnel had to be transferred to the affected areas to assist local governments. Additional funding will also be needed to scale up social assistance programs to assist displaced persons and the newly unemployed.

87. Overall, the additional public spending for 2013 and 2014 is estimated at PhP125.1 billion, of which PhP34.2 billion has been added to the 2013 budget and PhP90.6 billion will be added to the 2014 budget.The expected decline in GRDP in the affected regions will result in forgone tax revenue, which ADB estimates could be as much as PhP2.3 to PhP8.0 billion in 2013 and PhP5.7 billion in 2014. Timely and strategic investment of public resources to address priority needs represents the best option to ensure an appropriate balance between spurring economic and social recovery and prudent fiscal management.

C. Poverty Impact

88. Poverty incidence in the provinces severely affected by Yolanda was 30.5 percent in 2012. Across provinces, the poverty incidence ranges from 22.7 in Cebu to 63.7 in Eastern Samar (Table 18).

89. 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.

90. Applying the ADB result, but transposing it using 2012 data, poverty incidence in 2013 may increase to 26.4 percent, even after netting out the probable effect of GDP growth on poverty reduction this year. Put differently, in the absence of income growth this year, over one (1) million persons could have joined the ranks of the poor owing to the typhoon.

91. The incidence of poverty in the Visayas is expected to surge in the immediate aftermath of the typhoon as the regional economies initially contract, unemployment rises, and food prices spike during the early emergency relief phase. The most severely affected areas will have the largest increases in poverty. Eastern Visayas 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. Many families will adopt strategies to escape poverty or mitigate the risk

of falling into poverty, such as migrating to safer locations and relying on remittances. Thus, actual poverty rates will be lower than those projected. Nevertheless, the incidence of poverty in the most severely affected provinces will remain elevated for some time, as many families have lost income-generating assets. The poverty gap, which measures how far people are below the poverty line, has also increased in the severely affected areas. The implication of the larger poverty gap is that not only are there more people impoverished as a result of the damage caused by Typhoon Yolanda, but it may also take some of them a long time to escape poverty.

92. A disaster of this magnitude will stretch government resources and could raise the deficit above the 2 percent to GDP target in the next two years. Without outside support, responding to this event would undercut much needed infrastructure investments elsewhere in the country.

D. Impact on Employment and Incomes

93. A total of 7.4 million workers are employed in agricultural production, industry, services, and a multitude of home-based enterprises in Regions VI, VII, and VIII according to the latest Labor Force Survey (October 2012). Wage workers in the private sector number 2.8 million across all industries. An estimated 2.6 million workers are either self-employed or are unpaid family workers. With inadequate incomes and no or limited access to social security prior to the disaster, the latter group is most vulnerable to any disruption in employment and income flows.

Table 18. Poverty Incidence in the Yolanda-affected Province, 2012

Region/ Province	Number of Municipalities Affected	Provincial Poverty Incidence in 2012 (in percent)
REGION IV-B		
Palawan	6	26.40
REGION V		
Masbate	1	51.30
REGION VI		
Aklan	17	25.00
Antique	12	30.90
Capiz	17	27.80
Iloilo	31	26.20
Negros Occidental	7	32.30
REGION VII		
Cebu	16	22.70
REGION VIII		
Eastern Samar	12	63.70
Biliran	6	27.50
Leyte	38	39.20
Samar	6	50.00
Southern Leyte	1	43.30
REGION XIII		
Dinagat Islands	1	41.80*

Source: NSCB, FIES 2012
**figure is for Surigao del Norte*

94. For the 12.2 million people affected by typhoon Yolanda, the immediate impact has been an abrupt cessation of productive activities and a wholesale loss of employment and incomes. Almost six million workers are estimated to have been directly affected in 9 regions, of which 2.3 million (40 percent) are female workers and 1.2 million (20 percent) are youth workers aged 15 to 24. Of the 2.6 million considered vulnerable, about 1.45 million (57 percent) work in the agriculture sector, 1.11 million (37 percent) in the service sector and the rest in industry. Among this vulnerable group, women account for 42 percent. Monthly income loss among the vulnerably employed is estimated at PhP9.6 billion. For the 2.8 million wage workers employed in private establishments in both the agriculture and non-agriculture sectors, the monthly income loss is estimated at PhP16.6 billion. Wage workers are expected to recover faster as businesses move towards being operational. On the other hand, workers in the public sector (government employees) who account for 500,000 of the affected workers have incomes that are guaranteed by the Civil Service Commission.

V. Planning for Recovery and Reconstruction

A. Core Principles

95. RAY will be implemented according to a set of core principles based on lessons from previous disasters in the Philippines and other countries. The magnitude of the disaster and the large scope of recovery and reconstruction call for institutional arrangements that combine strong central coordination and oversight with flexible implementation at the local level. Coordination between government agencies and engagement with international donors, civil society organizations, and the private sector will be based on common recovery and reconstruction goals with standards set by government, which will also be responsible for managing implementation risks and addressing bottlenecks. At the same time, implementation shall be the responsibility of the local government, supported with capacity development, to ensure that the response is tailored to local conditions and promotes community participation, ownership and sustainability.

96. To address long-standing poverty issues prevalent in affected areas prior to the typhoon, there will be a focus on ensuring that recovery and reconstruction proactively addresses inclusiveness and sustainable livelihoods. Government systems will be used for implementation, and will identify ways to: fast-track operations, while managing governance risks and ensuring transparency and accountability; develop a robust monitoring and evaluation system to track and assess performance; use enhanced audit; and establish a grievance and redress system. To ensure fast and efficient implementation and effectiveness, outsourcing and use of channels with the strongest incentives for fund utilization should be explored.

97. RAY recognizes that the starting point for women's and men's recovery are not the same, and that specific strategies to enable women's meaningful participation in activities and benefits need to be incorporated. Consistent with the government's existing policies on gender, recovery and reconstruction activities will incorporate gender into the design and implementation of post-disaster interventions. Post-disaster recovery and rehabilitation is also an opportunity to address pre-existing gender inequality and promote women's empowerment

B. Phased, Cumulative, and Flexible Response

98. The wide geographical extent of Typhoon Yolanda's impact across the Visayas region and its impact on multiple sectors requires a response that is: (a) phased to meet critical immediate needs while planning for a sustained recovery and reconstruction program; (b) cumulative so that successive phases of support build on earlier recovery and reconstruction efforts; and, (c) flexible to ensure that recovery and reconstruction interventions are able respond to the changing needs of affected areas.

99. Critical immediate needs during the first six months will be focused on priority repairs to housing and the provision of temporary shelter; reactivating social services; rehabilitating water supply and sanitation systems, transport and power infrastructure; restoring livelihoods (including agriculture and fisheries) and temporary employment; and resuming national and local government services.

100. More detailed planning for some short-term activities that will start in 2014 has already begun, especially for the reconstruction of public

infrastructure, facilities, and utilities that integrate affordable disaster resilient design features. Other activities that involve making policy and budgetary choices will need to be expeditiously made in the first phase of RAY implementation. These include addressing the challenges of ensuring adequate, disaster resilient and affordable resettlement of permanently displaced families or families previously residing in areas with a high risk of hazards, as well as helping start the construction of permanent new housing and upgrading of housing to higher standards of disaster resilience; creating and strengthening an enabling environment to help reestablish and improve the viability of rural and urban livelihoods; continuing to provide short-term employment opportunities where needed; restoring the functioning of private sector-led rural market value chains; and helping to re-capitalize micro and small- to medium-size enterprises.

101. To guide the sequencing of RAY interventions total needs have been estimated for the short and medium term, covering 2013-2014 and 2015 and beyond. Initial indicative budgetary allocations have already been approved. An estimated medium-term needs gap of PhP235.8 billion (equivalent to US$ 5.34 billion) for financing remains (Table 19).

102. Much of the recovery and reconstruction of disaster-affected areas is targeted to be advanced or completed within one to two years. However, experience from other large post-disaster situations indicates that the reconstruction process may last for up to four years, especially for programs that involve addressing long-standing development challenges.New and innovative programs need to be planned and introduced, and a phased approach is needed to manage resource and implementation capacity constraints, e.g., housing, disaster risk management.

103. A flexible, iterative approach will be adopted to enable the development and refinement of program interventions to address shortfalls and to plan and design improvements based on lessons learned, beneficiary feedback, and rigorous performance assessments.

C. Partnering with the Private Sector

104. Government recognizes the role the private sector has already played in opening up supply chains, committing production, and fasttracking logistical arrangements to help those affected by the typhoon. Beyond this critical role in the immediate relief phase, Government seeks to enable new modalities to encourage and facilitate the active involvement of the private sector in implementing RAY. Options for greater private sector involvement include: expansion of public-private partnership arrangements for major investment programs; streamlining processes to accelerate the issuance of licenses to operate new businesses, especially those that help re-establish critical supply chains; facilitating bulk purchase arrangements from the private sector for goods that help meet the basic needs of affected communities; and fostering business-community links through adopt-a-town partnerships.

Table 19. Investment Requirements for Recovery and Reconstruction (PhP Billion)

Result Area	Critical Immediate Actions	Short-Term Interventions (2014)	Estimated Gap for Medium-Term Needs (2015-2017)	TOTAL
Shelter and resettlement	15.60	57.50	110.20	183.30
Public infrastructure	8.20	2.30	17.90	28.40
Education and health services	1.50	20.80	15.10	37.40
Agriculture (crops, livestock, fisheries)	4.30	3.40	11.00	18.70
Industry, services (livelihoods, enterprises, services)	1.20	2.70	66.70	70.60
Local government	2.00	2.00	-	4.00
Social protection	1.90	1.50	15.00	18.40
TOTAL IN PHP BILLION	**34.50**	**90.60**	**235.80**	**360.90**
TOTAL IN US$ BILLION	0.78	2.05	5.34	8.17

D. Outcome-driven Implementation

105. *Housing and Resettlement.* The wide geographical scale and large number of affected households warrants implementation approaches that emphasize self-recovery and community participation underpinned by a menu of approaches, housing financing, and capacity building interventions that correspond to varied needs and choices of affected populations. Clear and transparent rules will be laid out to: (i) guide implementation: eligibility of beneficiaries, levels of support to meet target levels of resilience, and participatory monitoring and adjustment in program implementation; (ii) ensure that pre-disaster property rights are protected; and (iii) streamline operational enforcement of "no build zones." Multiple channels of implementation— government, existing finance institutions, private sector, and donors — will be tapped to achieve scale and speed.

106. *Infrastructure, Facilities, and Utilities.*The rebuilding of the facilities and utilities infrastructure needs to take account of the technical aspects that will enhance survivability. The capacity for applying enhanced designs and standards will be shared across levels of society, from the communities that reconstruct their homes to large infrastructure of the national government.

107. *Restoring Education, Health, and Other Social Services.* Education and health are basic public services that need to be restored in the soonest time possible. The gap in provision caused by Typhoon Yolanda is being addressed through employment of alternative delivery mechanisms to prevent additional social costs that could arise from their delay. Basic education and health sectors target completion of recovery and reconstruction in 2014.

108. *Re-starting Agriculture (Crops, Fisheries, and Livestock).* Majority of those who lost their incomes and sources of livelihood are the marginalized rural workers – farmers, fisherfolk, and coconut farmers. Starting under early recovery activities over the next twelve months and continuing until sustainable sources of livelihoodare restored, community-based grant or micro-credit schemes would be provided to enable vulnerable households begin the recovery process.

109. *Local Government Operations.* While LGUs can continue to depend on central transfers through the internal revenue allotment there are unlikely to be sufficient to fully restore services to pre-disaster levels, especially in smaller LGUs. Larger towns and cities that were able to generate local tax revenues before the disaster are likely to experience a sharp fall in income that risks undermining the recovery and reconstruction process. Provision of additional resources to LGUs in the form of concessional loans and grants to support priority recovery and reconstruction investments will be important to help LGUs recover at least to pre-disaster levels of service delivery. In the case of towns and cities devastated by the storm surge the process of recovery and reconstruction is likely to take years and imply significant investments.

110. *Short-term Employment Opportunities.* As part of the rehabilitation phase, emergency employment of cash-for-work and public works programs will be expanded to provide emergency income support to mitigate the immediate impoverishing impact of the disaster. This will be complemented with skills training and livelihood development to prepare for self-employment, together with provision of livelihood and entrepreneurial programs and provisions for replacing livelihood productive assets. Cash for work, one time emergency income support and livelihood restoration programs will be implemented in synergy to ensure that affected short-term household needs are met, yet do not generate dependency and/or reduced incentive for market-driven livelihood recovery. The success of employment, income and livelihood support and restoration programs will be enhanced by efforts to restore and stabilize the supply and market functions for basic goods, materials and outputs.

111. *Re-energizing Enterprise.* Restoring and expanding the operations of private business is key to inclusive and sustainable employment and incomes in the region. Initially, typhoon-damaged businesses will need to replace, and potentially upgrade, assets and will need access to working capital to restore business activity. Identified trade and industry needs include loan restructuring and refinancing, guarantees, financing through cooperatives and microfinance institutions. Refinancing mechanisms for banks will need to be quickly assessed, especially in rural areas. The Philippines financial system has generally high liquidity levels and a role for guarantee instruments may be considered based on lessons from other guarantee schemes.

E. Strengthening Disaster Risk Reduction and Management

112. Significant gains have been achieved following the enactment of the National Disaster Risk Reduction and Management (NDRRM) 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 forecasting, and initiatives in new realms of disaster risk reduction, such as risk financing and catastrophe risk modeling have been undertaken over the last three years.

113. Typhoon Yolanda, as any disaster event, offers lessons that need to be factored into the country's DRRM policies, systems, and capacities if the country is to build resilience to such extreme events, which are becoming more frequent. Demarcating safe locations and hazard zones is pivotal in the recovery and reconstruction to ensure that communities, along with the economic assets and infrastructure, are rebuilt out of harm's way. Determining safe locations is complemented by upgrading of engineering standards and designs, particularly for critical infrastructure, such as hospitals and schools which are often used as emergency shelter.

F. Institutional Arrangements for RAY Implementation

114. The implementation of RAY will be managed and coordinated by the Office of the Presidential Assistant for Rehabilitation and Recovery pursuant to Memorandum Order No. 62 of December 6, 2013.

115. The required results of the plan will be reflected as a core set of priority programs and projects that will be implemented by the national government, government-owned and controlled corporations, government financial institutions and other offices and instrumentalities in the context of results-based planning and budgeting, and be the subject of monitoring and evaluation (M&E).

116. Building on government systems, a monitoring and evaluation dedicated for the implementation of RAY will be set up that will include reporting on the following information:

- Physical targets and actual accomplishments
- Budget allocation, project expenditures and loan and loan and grant disbursements
- Statement of expenses submitted to funding agencies per quarter
- Implementation delays experienced and actions taken
- Recommended actions or action plan to resolve implementation problems
- Other information which may be relevant in assessing the progress of implementation of the program or project

117. As an oversight body, NEDA, in coordination with the Office of the Presidential Assistant for Rehabilitation and Recovery, shall undertake periodic outcome monitoring and evaluation, and report to the President and development partners on the status of RAY implementation.

Reconstruction Assistance on Yolanda

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