



**Tropical storm Ondoy (international name Ketsana, TC-2009-000205-PHL)
and typhoon Pepeng (international name Parma, TC-2009-000214-PHL)
Philippines**

Post Disaster Needs Assessment - Housing Sector



Housing Stock Breakdown



Ph. 1 - Vernacular architecture in the Philippines proved to be resilient to wind and storm



Ph. 2 - Simple dwellings made of light material house the majority of the population in urban areas



Ph. 3 - Dwellings featuring mixed structure are typical of small towns and urban areas and house the middle class



Ph. 4 - Houses built of strong materials are found mainly in urban areas and are used by the upper middle class



Ph. 5 - High end dwellings are only in major urban areas and house the rich minority of the population





Damages to the Housing Stock

Through site visits to the most affected local government units, it became clear that the **main cause of destruction was the location** of the dwellings, rather than the building material.

Housing type	Average size		Average construction cost		Average household items value	
	sqm	sqf	PHP	USD	PHP	USD
Vernacular houses	20	215	20,000	420	15,000	320
Makeshift dwellings	20	215	20,000	420	15,000	320
Mixed-material houses	30	320	110,000	2,300	100,000	2,110
Strong-material houses	50	540	600,000	12,700	500,000	10,600
High end houses	200	2150	5,000,000	105,600	3,000,000	63,400



Damages to the Housing Stock

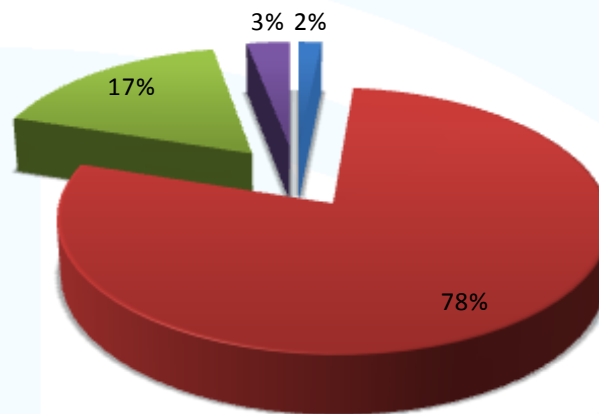


Chart 1 - Housing stock totally damaged, by type

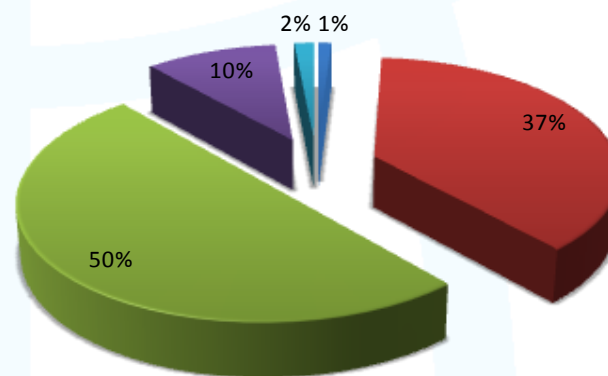


Chart 2 - Housing stock partially damaged, by type

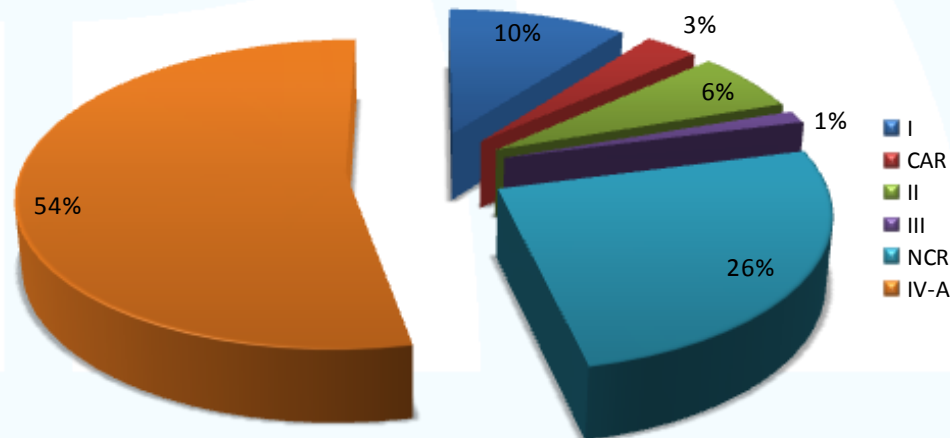
- Vernacular houses
- Makeshift dwellings
- Mixed material houses
- Strong material houses
- High end houses





Damages, Losses, External Sector, and Fiscal Budget in the Housing Sector

Region	Damages		Losses		External sector	Fiscal budget
	Public	Private	Public	Private		
I	0	2,624,940,485	229,125,177	685,796,936	580,525,932	433,447,994
CAR	0	781,602,505	68,224,332	204,202,955	172,857,452	129,063,512
II	0	1,597,371,612	139,430,991	417,332,341	353,271,112	263,768,846
III	0	327,734,016	28,607,168	85,624,411	72,480,918	54,117,666
NCR	0	6,529,635,862	569,957,292	1,705,945,064	1,444,079,578	1,078,217,805
IV-A	0	13,574,673,270	1,184,902,830	3,546,544,915	3,002,144,202	2,241,542,213
V	0	5,390,362	470,513	1,408,296	1,192,120	890,093
XII	0	12,356,369	1,078,560	3,228,248	2,732,707	2,040,367
Total	0	25,453,704,480	2,221,796,862	6,650,083,166	5,629,284,020	4,203,088,496



Data in PHP



Needs

- ❖ Relocating people from danger areas to safer ones, but close to the their current neighborhoods (within 5 km);
- ❖ Addressing the needs of the informal sector and the poor;
- ❖ Avoiding urban sprawl, avoiding greenfield consumption, re-blocking existing built areas (e.g., slums, brownfields);
- ❖ Promoting in-city compact housing programs, through PPP;
- ❖ Leveraging natural disasters to promote urban rehabilitation and slum upgrading; and
- ❖ Setting up suitable financial mechanisms to make the process sustainable.



Needs: Replicating Good Practices (Taguig)

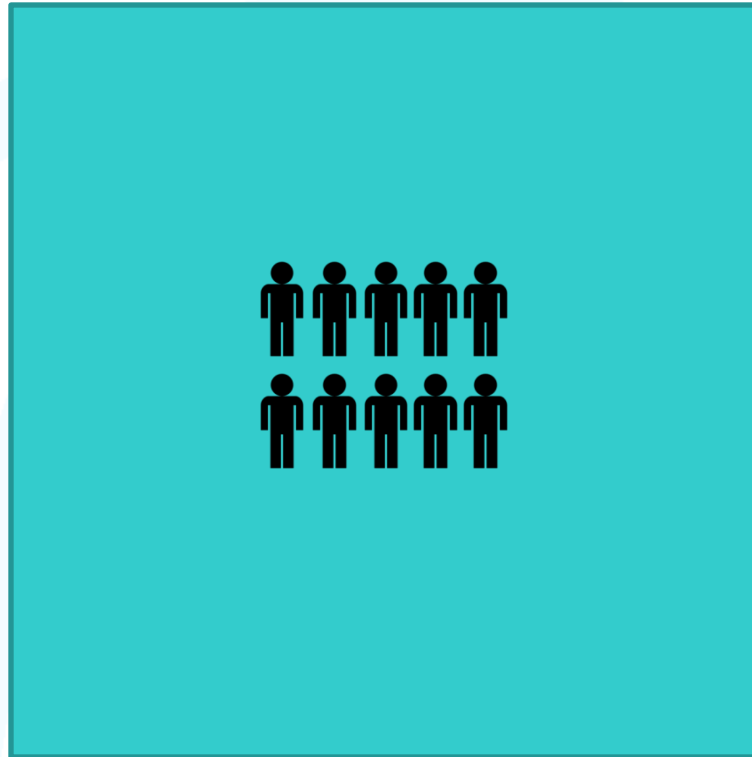


Needs: Compact Housing Supports Strong Families

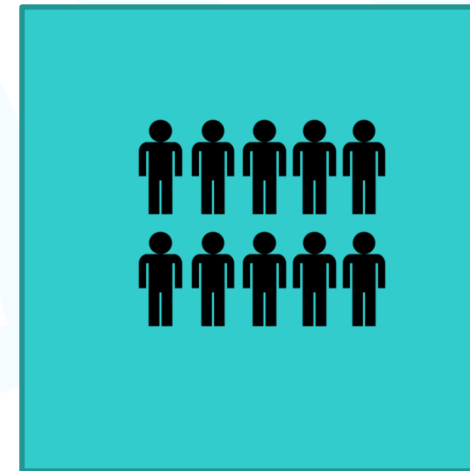




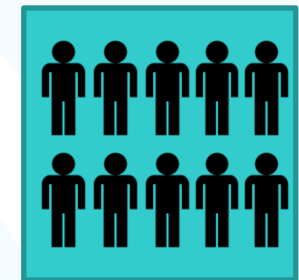
Needs: Informal Settlements vs Compact Housing



Low density settlements:
1000 people/hectar



Informal settlements (slums):
2000 people/hectar



Compact housing
(mid-rise):
4000 people/hectar





Needs in the Housing Sector

Land Type	Housing Type	Unit Cost PHP	NCR and IV A	Other Regions
Brownfield	Type 1 - Finished Mid Rise	600,000	10%	10%
Brownfield	Type 2 - Core Mid Rise	330,000	60%	30%
Greenfield	Type 3 - Core Low Density	220,000	20%	40%
Greenfield	Type 4 - Serviced Lot	100,000	10%	20%

	Type 1	Type 2	Type 3	Type 4	Retrofitting	Simple repair
Total	10,468	52,979	19,049	9,524	113,952	37,984
I	1,079	12	3,247	1,623	11,751	3,917
CAR	321	964	967	483	3,499	1,166
II	657	1,971	1,976	988	7,151	2,384
III	135	404	405	203	1,467	489
NCR	2,685	16,111	4,038	2,019	29,232	9,744
IV-A	5,582	33,495	8,395	4,197	60,772	20,257
V	2	7	7	3	24	8
XII	5	15	15	8	55	18





Needs in the Housing Sector

Region	Recovery		Reconstruction		Total	
	Short term	Medium term	Short term	Medium term	Short term	Medium term
Total	6,300,887,190	9,801,380,073	14,702,070,109	39,205,520,292	21,002,957,299	49,006,900,364
I	458,823,765	713,725,856	1,070,588,785	2,854,903,426	1,529,412,549	3,568,629,282
CAR	164,636,795	256,101,681	384,152,522	1,024,406,725	548,789,317	1,280,508,406
II	336,604,658	523,607,245	785,410,868	2,094,428,981	1,122,015,525	2,618,036,226
III	69,018,591	107,362,252	161,043,379	429,449,010	230,061,970	536,811,262
NCR	1,486,021,952	2,311,589,703	3,467,384,554	9,246,358,811	4,953,406,506	11,557,948,514
IV-A	3,128,739,202	4,866,927,647	7,300,391,470	19,467,710,588	10,429,130,672	24,334,638,235
V	1,134,995	1,765,548	2,648,322	7,062,193	3,783,317	8,827,741
XII	2,601,767	4,047,193	6,070,790	16,188,773	8,672,557	20,235,967



Thank you!

