



IOM TYPHOON HAIYAN (YOLANDA) RESPONSE



Assessment of Usability of Designated Evacuation Centres in case of Typhoon

GUIUAN, EASTERN SAMAR, PHILIPPINES

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1. Introduction

Situated in the so-called "Pacific Ring of Fire", around 23 tropical cyclones (*typhoons*) pass through the Philippines' Area of Responsibility each year. As is common in most areas frequently affected by tropical cyclones, populations living in high risk areas evacuate to safe shelters (commonly public buildings such as schools and churches) in advance of the arrival of a storm. The Philippines is no exception. However, Yolanda wrought catastrophic damage to housing as well as public infrastructure and the evacuation centers (ECs) themselves.

Typhoon season begins in earnest in the summer months. Absent urgent intervention, many of those affected by Yolanda will not only find themselves without adequate housing but without alternative accommodation in case of typhoon in just six months. Further, with climate change, typhoons appear to be more intense and more frequent. This renders the situation all the more urgent.

This report aims to analyze the usability of ECs post-Yolanda in the municipality of Guiuan, Eastern Samar. Though this report is limited in geographic scope to Guiuan, similar results would be expected across the Yolanda-affected areas.

The Guiuan Municipal Social Welfare and Development Office (MSWD) counted forty buildings and facilities as evacuation centres (ECs) before Yolanda, of which thirty-two (32) were located on the mainland and eight (8) on offshore islands. This assessment is limited in scope to the 32 sites on the mainland.

Of these 32 sites, only three (3) buildings sustained only minor damage or no damage at all and are thus usable. Four ECs were completely destroyed or suffered catastrophic structural damage, necessitating complete reconstruction. The remaining twenty-five ECs suffered moderate-to-severe damage and are unusable absent significant rehabilitation works, and are currently unusable for their regular activities (schools, churches, etc.)

Status of Evacuation Centres, post-Yolanda (usability index)		
Code	Description	No. of Buildings
1	Destroyed – not usable	4
2	Damaged – not usable	25
3	Minor/no damage – usable	3
TOTAL		32

Further, numerous people were killed in several of these sites after the structures failed and crushed evacuees.

As a result, there is an urgent need to rebuild and rehabilitate ECs in Guiuan and around the Yolanda-affected areas in order that vulnerable populations will have safe places to shelter during the next Typhoon season. Further, these works must be more "storm resilient", capable of withstanding the

effects of stronger storms. Finally, the Government must continue its already-commendable efforts in preparing the population and ensuring that they have the tools and support needed to protect themselves in case of disaster.

2. Municipality of Guiuan

Guiuan is a second-class municipality in the province of Eastern Samar, Philippines, and is located at the southernmost tip of Samar Island. It is 109 kilometres (68 mi) south of Borongan and 154 kilometres (96 mi) east of Tacloban.

It has a total land area of 175.49 square kilometres and is composed of sixty (60) barangays. It is the municipality with the highest number of barangays in the Province and had an estimated population of 47,037 people as of the 2010 Census.

It is bounded on the north by the municipality of Mercedes, on the east by the Pacific Ocean, on the south by the Surigao Strait, and on the west by the Leyte Gulf.



3. Designated Evacuation Centres Prior to Yolanda in Guiuan

In 2010, the Philippine Government enacted the Republic Act (RA) 10121 - "An Act Strengthening The Philippine Disaster Risk Reduction And Management System, Providing For The National Disaster Risk Reduction And Management Framework And Institutionalizing The National Disaster Risk Reduction And Management Plan" in order to strengthen disaster risk reduction and disaster management systems in the country.

One part of the Act mandates Local Government Units (LGUs) to identify or build potential evacuation centres (ECs) in the event of any disaster including typhoons, earthquakes, volcanic eruptions, floods, etc. As such, LGUs have identified and established evacuation centres in their respective areas of operations.

Prior to Yolanda, the Municipality of Guiuan had a list of 32 ECs on the mainland (see table, below). Most of these evacuation centres were public buildings such as schools and churches, but there were also a number of private residences included in the list.

Pre-Typhoon Yolanda Evacuation Centres (mainland Guiuan)

Code	Name of Evacuation Centres	Location
GUI-001	Guiuan Gymnasium	Poblacion Ward 8
GUI-002	Eastern Samar State University (ESSU)	Salog
GUI-003	Bureau of Fisheries and Aquatic Resources (BFAR)	Bgy. Lupok
GUI-004	Guiuan East Central School	Poblacion Ward 8
GUI-005	TELECOM	Poblacion Ward 8
GUI-006	St. Mary's Academy Guiuan (SMAG)	Poblacion Ward 9
GUI-007	Immaculate Conception School	Brgy. 9A

GUI-008	Cantahay Elem. School	Bgy. Cantahay
GUI-009	Guiuan National High School (GNHS)	Bgy. Cogon
GUI-010	Guiuan Development Foundation, Inc (GDFI)	Bgy. 10
GUI-011	Bagua Day Care Center\Elem. School	Bgy. Bagua
GUI-012	Banahao Elem. School	Bgy. Banahao
GUI-013	Bgy. Barbo Church	Bgy. Barbo
GUI-014	Taytay Integrated School	Bgy. Taytay
GUI-015	Sulangan National High School	Bgy. Sulangan
GUI-016	Sulangan Elementary School	Bgy. Sulangan
GUI-017	Sulangan Church	Bgy. Sulangan
GUI-018	Sapao Elem. School	Bgy. Sapao
GUI-019	Galera Cockpit	Bgy. Sapao
GUI-020	San Roque Chapel	Bgy. Sapao
GUI-021	Sta. Cruz Parish Church	Bgy. Sapao
GUI-022	Lupok Elementary School	Bgy. Lupok
GUI-023	Bgy. Pagnamitan Church	Bgy Pagnamitan
GUI-024	Gonzales Residence	Bgy 10
GUI-025	Palconit Residence	Bgy Cantahay
GUI-026	Dorotea Awa-ao Residence	Bgy Hagna
GUI-027	Capt. Cadayong Residence	Bgy Hagna
GUI-028	Rosario Macasuhot Residence	Bgy Hagna
GUI-029	Judith Awa-ao Residence	Bgy Hagna
GUI-030	Margarita Macasuhot Residence	Bgy Hagna
GUI-031	Caranyagan Residence	Bgy Hagna
GUI-032	Gen. Ex (Store)	Bgy 4

4. Typhoon Yolanda and Guiuan ECs

Typhoon Yolanda (International Codename: Haiyan) made its first landfall on 8 November 2013 in the Philippines in Guiuan, with the eye of the storm passing directly over the municipality. Peak winds reached 380 km per hour (235 mph) and sustained wind speeds of 315 km per hour (195 mph). The city suffered heavy damage to property, along with 110 fatalities and over 3,625 injuries.

Thousands of people sought refuge in ECs in Guiuan during the passage of Yolanda, and numerous people lost their lives due to the structural failure and collapse of some ECs. In many cases, heavy winds ripped off roof structures and remaining trusses were twisted and bent. High wind loads also caused reinforced concrete beams, girders and columns to fail. Many of these structures were not designed to withstand the windloads brought by Yolanda.

As a result of Yolanda, only 3 of 32 ECs on mainland Guiuan are useable in case of new Typhoon. Twenty-nine need repair or complete reconstruction.

Status of Evacuation Centres, post-Yolanda (usability index)		
Code	Description	No. of Buildings
1	Destroyed – not usable	4
2	Damaged – not usable	25
3	Minor/no damage – usable	3
	TOTAL	32

Of the 25 ECs in Category 2, the most common repairs are as follow:

1. Supply and installation of new trusses/purlins/CGI roofing sheets;
2. Retrofitting of some beams, girders and columns;
3. Repair or installation of new windows and doors, and repair of walls and repainting; and
4. Installation of new electrical wiring systems, in coordination with the local power company to ensure adherence to the National Building and Electrical Safety Codes of the Philippines.

5. Recommendations

In order to protect vulnerable populations in advance of the 2014 Typhoon Season:

1. Construct or rehabilitate safer and stronger ECs, in conformity with international and national engineering Codes;
2. Strict implementation of Comprehensive Land Use Plans (CLUPs) by the national or local government units; and
3. Raise awareness on DRR, emergency preparedness, evacuation planning and related practices.

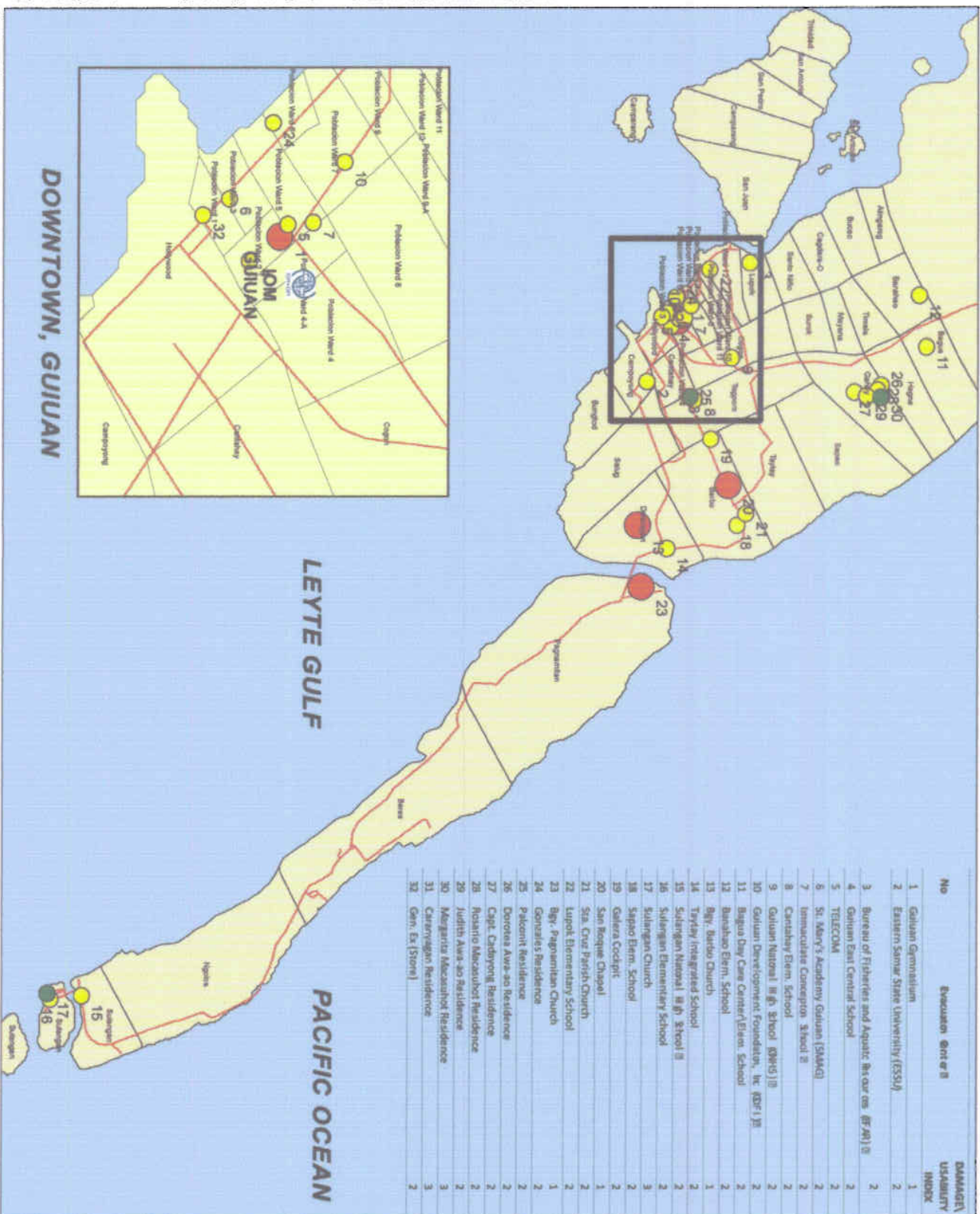
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1. Summary Table of Designated Evacuation Centres (Pre-Typhoon Yolanda) in Guiuan
2. Map of Designated Evacuation Centres (Pre-Typhoon Yolanda) in Guiuan
3. Detailed Report on the Assessment of Designated Evacuation Centres (Pre-Typhoon Yolanda) in Guiuan

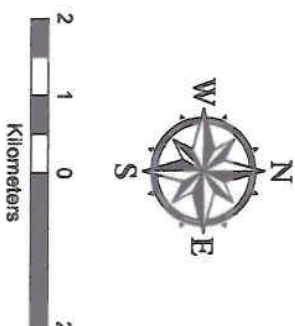
Annex 1. Designated Evacuation Centers in Guilan (Pre-Typhoon Haiyan\Yolanda)

No	Code	Province	Municipality	Subsector	Point	OTM Site Code	Evacuation Center	Longitude	Latitude	Contact Person	USABILITY INDEX
PUBLIC BUILDINGS (SCHOOLS/CHURCHES/ETC)											
1	GUJ-001	Eastern Samar	Guiluan	Population Ward B			Guiluan Gymnasium	11 033231°	125 721729°		1
2	GUJ-002	Eastern Samar	Guiluan	Sabag		003609_DS_009	Eastern Samar State University (ESSU)	11 020436°	125 725962°		2
3	GUJ-003	Eastern Samar	Guiluan	Rgy. Lupok	Santo Nino		Bureau of Fisheries and Aquatic Resources (BFAR)	11 044553°	125 716855°		2
4	GUJ-004	Eastern Samar	Guiluan	Population Ward B			Guiluan East Central School	11 032252°	125 726484°		2
5	GUJ-005	Eastern Samar	Guiluan	Population Ward B			TELECOM	11 033491°	125 723350°		2
6	GUJ-006	Eastern Samar	Guiluan	Population Ward 9			St. Mary's Academy Guilan (SMAAG)	11 03161°	125 72254°		2
7	GUJ-007	Eastern Samar	Guiluan	Rgy. SA		003609_DS_003	Immaculate Conception School	11 03430°	125 72329°	MRS. CANDIDO A. SISON (ADMINISTRATOR/PRINCIPAL)	2
8	GUJ-008	Eastern Samar	Guiluan	Rgy. Canabuy			Canabuy Elem. School	11 03582°	125 73575°	MRS. NORHIA CERUSA (TEACHER)	2
9	GUJ-009	Eastern Samar	Guiluan	Rgy. Cagton			Guiluan National High School (GNHS)	11 04168°	125 72934°	MR. ANGELITO ROSAL (PRINCIPAL)	2
10	GUJ-010	Eastern Samar	Guiluan	Rgy. 10			Guiluan Development Foundation, Inc (GDFI)	11 035310°	125 721390°	MARGARITA DELA CRUZ (EXEC. DIRECTOR)	2
11	GUJ-011	Eastern Samar	Guiluan	Rgy. Bigua			Bigua Day Care Center/Elem. School	11 07217°	125 72773°	MR. JAMAS (PRINCIPAL)	2
12	GUJ-012	Eastern Samar	Guiluan	Rgy. Banabao			Banabao Elem. School	11 07107°	125 71980°		2
13	GUJ-013	Eastern Samar	Guiluan	Rgy. Barbo			Rgy. Barbo Church	11 02703°	125 75468°	MR. JOSE GIGACOL (PRES. STA. IGLESIA)	1
14	GUJ-014	Eastern Samar	Guiluan	Rgy. Torbay			Torbay Integrated School	11 03162°	125 73557°	MR. MANOLO JAMODIA	2
15	GUJ-015	Eastern Samar	Guiluan	Rgy. Sulungon			Sulungon National High School	10 54000°	125 82705°	MR. JESUS LAPADA	2
16	GUJ-016	Eastern Samar	Guiluan	Rgy. Sulungon			Sulungon Elementary School	10 55527°	125 82736°	MRS. EPIFANIA G. GAYTOS	2
17	GUJ-017	Eastern Samar	Guiluan	Rgy. Sulungon			Sulungon Church	10 54179°	125 82668°		3
18	GUJ-018	Eastern Samar	Guiluan	Rgy. Sapeo			Sapeo Elem. School	11 04258°	125 73500°		2
19	GUJ-019	Eastern Samar	Guiluan	Rgy. Sapeo			Guilua Catechit	11 03843°	125 74175°		2
20	GUJ-020	Eastern Samar	Guiluan	Rgy. Sapeo			San Roque Chapel	11 04116°	125 74882°		1
21	GUJ-021	Eastern Samar	Guiluan	Rgy. Sapeo			Sta. Cruz Parish Church	11 043950°	125 752210°	FR. JOSEPH B. ORSALA	2
22	GUJ-022	Eastern Samar	Guiluan	Rgy. Lupok			Lupok Elementary School	11 03823°	125 71587°		2
23	GUJ-023	Eastern Samar	Guiluan	Rgy. Pagananban			Rgy. Pagananban Church	11 02739°	125 76445°	MR. MANOLO JAMODIA	1
PRIVATE RESIDENCES											
24	GUJ-024	Eastern Samar	Guiluan	Rgy. 20			Gonzales Residence	11 03301°	125 72015°		2
25	GUJ-025	Eastern Samar	Guiluan	Rgy. Canabuy			Pelconal Residence	11 03519°	125 73531°		2
26	GUJ-026	Eastern Samar	Guiluan	Rgy. Hagna			Doretha Ave-ao Residence	11 05510°	125 73357°		2
27	GUJ-027	Eastern Samar	Guiluan	Rgy. Hagna			Capt. Cadayong Residence	11 060910°	125 73460°		2
28	GUJ-028	Eastern Samar	Guiluan	Rgy. Hagna			Rosario Macanabot Residence	11 065610°	125 72431°		2
29	GUJ-029	Eastern Samar	Guiluan	Rgy. Hagna			Justith Ave-ao Residence	11 06278°	125 73519°		2
30	GUJ-030	Eastern Samar	Guiluan	Rgy. Hagna			Margarita Macanabot Residence	11 06506°	125 73541°		3
31	GUJ-031	Eastern Samar	Guiluan	Rgy. Hagna			Carayegon Residence	11 03519°	125 73531°		3
32	GUJ-032	Eastern Samar	Guiluan	Rgy. 4			Gen. Ex (Steven)	11 03076°	125 72305°		2

DESIGNATED EVACUATION CENTERS IN GUIUAN (Pre - Typhoon Yolanda)



MAP OF GUIUAN EASTERN SAMAR



SUMMARY OF DAMAGED/USABLE EVACUATION CENTERS

No.	Description	No. of Buildings
1	Destroyed - Not Usable	4
2	Damaged - Not Usable	25
3	No/Minor Damage - Usable	3
	TOTAL	32

Legend

- Damage/Usability Index**
- 1 - DESTROYED - NOT USABLE
 - 2 - DAMAGED - NOT USABLE
 - 3 - NOMINOR DAMAGE, USABLE

- roads
- Barangays, Guiuan



KEY MAP