



# **IOM TYPHOON HAIYAN (YOLANDA) RESPONSE**



## **Assessment of Usability of Designated Evacuation Centres in case of Typhoon**

**MERCEDES, EASTERN SAMAR, PHILIPPINES**

**Jan 2014**

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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 Mercedes, Eastern Samar. Though this report is limited in geographic scope to Mercedes, similar results would be expected across the Yolanda-affected areas.

The Mercedes Municipal Social Welfare and Development Office (MSWD) counted forty-one (41) buildings and facilities as evacuation centres (ECs) before Yolanda.

Of these 41 sites, no buildings sustained only minor damage or no damage at all and are thus usable. Five ECs were completely destroyed or suffered catastrophic structural damage, necessitating complete reconstruction. The remaining thirty-six 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	5
2	Damaged – not usable	36
3	Minor/no damage – usable	0
TOTAL		41

As a result, there is an urgent need to rebuild and rehabilitate ECs in Mercedes 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 Mercedes

**Mercedes** is a fourth class municipality in the province of Eastern Samar, Philippines. According to the 2010 census, it has a population of 5,369 people.

Act No. 960 of the Philippine Commission incorporated the town of Mercedes comprising the barrios of Busay, Anuron, Sung-an, Bobon, Banuyo and Buyayawon into Guiuan. In 1948, Republic Act No. 262 recreated the town.

It has a total land area of 23.32 square kilometres (9.00 sq mi) and is composed of sixteen(16) barangays.

It is bounded on the north by the municipality of Salcedo, on the east by the Philippine Sea, on the south by the town of Guiuan, and on the west by the Leyte Gulf.



## 3. Designated Evacuation Centres Prior to Yolanda in Mercedes

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 Mercedes had a list of 41 ECs. (see table, below). Most of these evacuation centres were public buildings such as barangay halls, schools and churches.

**Pre-Typhoon Yolanda Evacuation Centres in Mercedes**

Code	Name of Evacuation Centres	Location
MER-001	Mercedes Municipal Hall\Multi-Purpose Hall	Bgy. 2
MER-002	Bgy. 1 Hall	Bgy. 1
MER-003	Bgy. 2 Hall	Bgy. 2
MER-004	Bgy. 3 Hall	Bgy. 3
MER-005	Bgy. 4 Hall	Bgy. 4
MER-006	Bgy. Anuron & Multi-Purpose Halls	Bgy. Anuron
MER-007	Bgy. Banuyo Hall	Bgy. Banuyo
MER-008	Bgy. Bubon Hall	Bgy. Bubon
MER-009	Bgy. Buyayawon Hall	Bgy. Buyayawon
MER-010	Bgy. Busay Hall	Bgy. Busay
MER-011	Bgy. Cabunga-An Hall	Bgy. Cabunga-An

MER-012	Bgy. Cambante Hall	Bgy. Cambante
MER-013	Bgy. Palamrag Hall	Bgy. Palamrag
MER-014	Bgy. San Jose Hall	Bgy. San Jose
MER-015	Bgy. San Roque Hall	Bgy. San Roque
MER-016	Bgy. Sung-An Hall	Bgy. Sung-An
MER-017	Bgy. Cabunga-An Health Center	Bgy. Cabunga-An
MER-018	Central School	Bgy. 3
MER-019	Mercedes National High School	Bgy. 3
MER-020	Bgy. Banuyo Elementary School	Bgy. Banuyo
MER-021	Bgy. San Jose Elementary School	Bgy. San Jose
MER-022	Bgy. Sung-An Elementary School	Bgy. Sung-An
MER-023	Bgy. Cambante Elementary School	Bgy. Cambante
MER-024	Bgy. Cabunga-An Elementary School	Bgy. Cabunga-An
MER-025	Bgy. Bubon National High School	Bgy. Bubon
MER-026	Bgy. Bubon Elementary School	Bgy. Bubon
MER-027	Bgy. Buyayawon Elementary School	Bgy. Buyayawon
MER-028	Bgy. Busay Elementary School	Bgy. Busay
MER-029	Bgy. San Roque Elementary School	Bgy. San Roque
MER-030	Mercedes Catholic Church	Bgy. 3
MER-031	Bgy. Palamrag Church	Bgy. Palamrag
MER-032	Bgy. Anuron Church	Bgy. Anuron
MER-033	Bgy. Banuyo Church	Bgy. Banuyo
MER-034	Bgy. San Jose Church	Bgy. San Jose
MER-035	Bgy. Sung-An Church	Bgy. Sung-An
MER-036	Bgy. Cambante Church	Bgy. Cambante
MER-037	Bgy. Cabunga-An Church	Bgy. Cabunga-An
MER-038	Bgy. Bubon Church	Bgy. Bubon
MER-039	Bgy. Buyayawon Church	Bgy. Buyayawon
MER-040	Bgy. Busay Church	Bgy. Busay
MER-041	Bgy. San Roque Church	Bgy. San Roque

#### 4. Typhoon Yolanda and Mercedes ECs

Typhoon Yolanda (International Codename: Haiyan) made its first landfall on 8 November 2013 in the Philippines in Guiuan a town roughly 10 kilometres away from Mercedes, 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 town suffered heavy damage to property. There are 1325 houses damaged or destroyed (of which 183 were heavily damaged or destroyed, and 1142 partially damaged).

Thousands of people sought refuge in ECs in Mercedes 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, none of the 41 ECs on Mercedes are useable in case of new Typhoon. Thirty-six need repair or complete reconstruction.**

Status of Evacuation Centres, post-Yolanda (usability index)		
Code	Description	No. of Buildings
1	Destroyed – not usable	5
2	Damaged – not usable	36
3	Minor/no damage – usable	0
<b>TOTAL</b>		<b>41</b>

Of the 36 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.

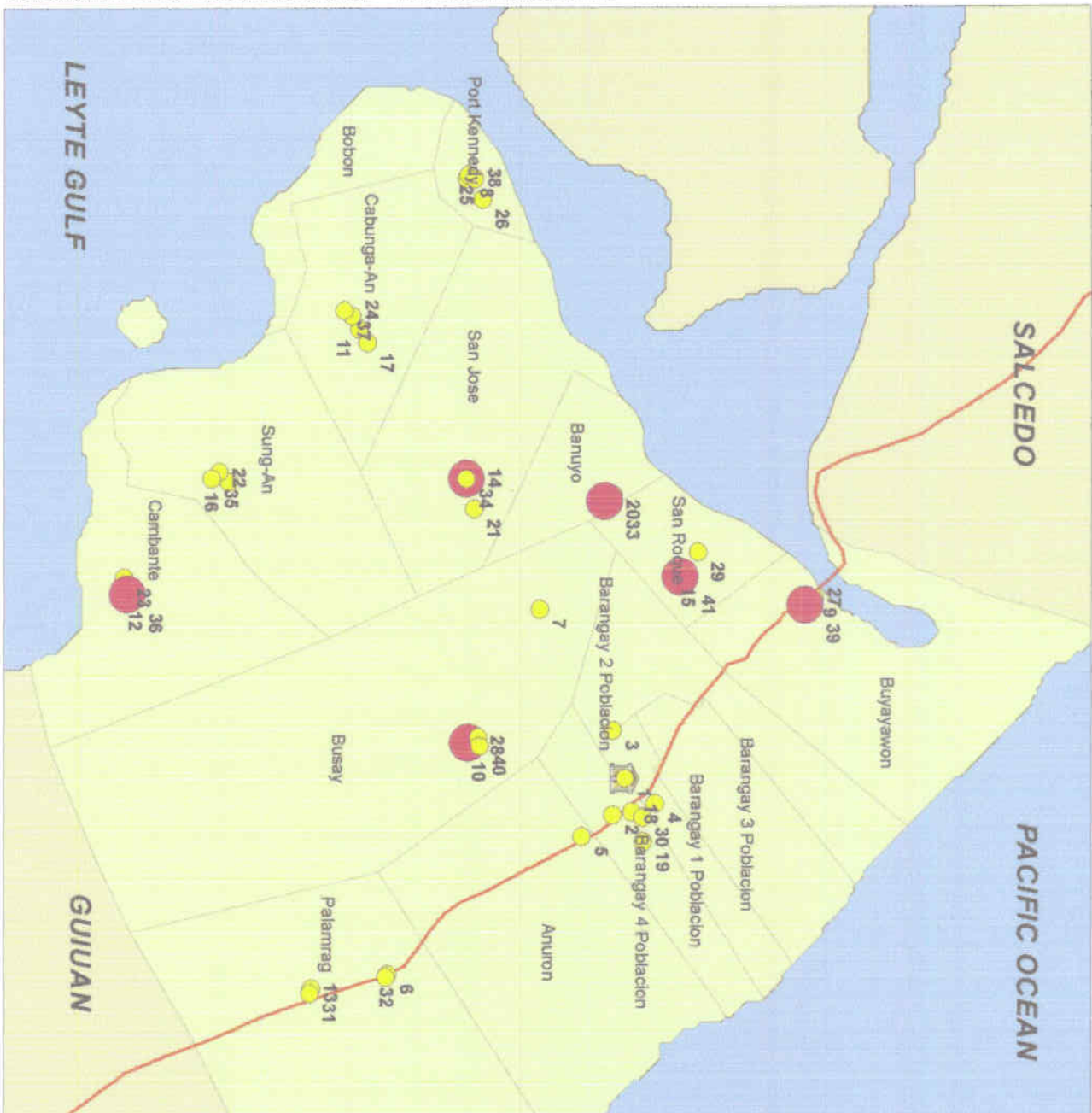
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Annex 1. Designated Evacuation Centers in Mercedes (Pre-Typhoon Haiyan\Yolanda)

No.	Code	Province	Municipality	Barangay	Evacuation Center	Northings	Eastings	Contact Persons	USABILITY INDEX
<b>BARANGAY AND MULTI-PURPOSE HALLS</b>									
1	MER-001	Eastern Samar	Mercedes	Bgy. 2	Mercedes Municipal Hall (Multi-Purpose Hall)	11.09780	125.70921	THEA CARAGUM (MSWD)	2
2	MER-002	Eastern Samar	Mercedes	Bgy. 1	Bgy. 1 Hall	11.09713	125.71117	MRS. VIRGINIA CARON (BGY. CAPT)	2
3	MER-003	Eastern Samar	Mercedes	Bgy. 2	Bgy. 2 Hall	11.09714	125.70665	PAZ GABERANA (BGY. KAGAWAD)	2
4	MER-004	Eastern Samar	Mercedes	Bgy. 3	Bgy. 3 Hall	11.09544	125.71056	MRS. LEAH ABRONOS (BGY. KAGAWAD)	2
5	MER-005	Eastern Samar	Mercedes	Bgy. 4	Bgy. 4 Hall	11.09545	125.71243	LEONARDO ARIAS (BGY. CAPT)	2
6	MER-006	Eastern Samar	Mercedes	Bgy. Anuron	Bgy. Anuron & Multi-Purpose Halls	11.08483	125.71960	MR. SUSPIDO C. BANSARA	2
7	MER-007	Eastern Samar	Mercedes	Bgy. Banuyo	Bgy. Banuyo Hall	11.09315	125.70016	EURICA MACAPUGAS (BGY. SECR)	2
8	MER-008	Eastern Samar	Mercedes	Bgy. Bubon	Bgy. Bubon Hall	11.08917	125.67712	JOSE EPA (BGY. KAGAWAD)	2
9	MER-009	Eastern Samar	Mercedes	Bgy. Buyayawon	Bgy. Buyayawon Hall	11.10793	125.69929	MRS. FLORA MACASUOT (BGY. KAGAWAD)	2
10	MER-010	Eastern Samar	Mercedes	Bgy. Busay	Bgy. Busay Hall	11.08922	125.70728	FEDERICO ABLETES (BGY. CAPT)	1
11	MER-011	Eastern Samar	Mercedes	Bgy. Cabunga-An	Bgy. Cabunga-An Hall	11.08527	125.68519	ELIAS C. WANWAN (BGY. CAPT)	2
12	MER-012	Eastern Samar	Mercedes	Bgy. Cambarte	Bgy. Cambarte Hall	11.07023	125.69965	EDUARDO CABELLO (BGY. KAGAWAD)	2
13	MER-013	Eastern Samar	Mercedes	Bgy. Palamrag	Bgy. Palamrag Hall	11.08067	125.72041	MR. VIRGUO REYBANO (BGY. CAPT)	2
14	MER-014	Eastern Samar	Mercedes	Bgy. San Jose	Bgy. San Jose Hall	11.08913	125.69319	MRS. VERONICA TALAGTAG	1
15	MER-015	Eastern Samar	Mercedes	Bgy. San Roque	Bgy. San Roque Hall	11.10076	125.69847	ANTHONY NALDO (BGY. CAPT)	2
16	MER-016	Eastern Samar	Mercedes	Bgy. Sung An	Bgy. Sung An Hall	11.07613	125.69513	VIRGINIA CANAYONG (BGY. SECRETARY)	2
<b>HEALTH CENTRES</b>									
17	MER-017	Eastern Samar	Mercedes	Bgy. Cabunga-An	Bgy. Cabunga-An Health Center	11.08373	125.68593	ELIAS C. WANWAN (BGY. CAPT)	2
<b>PUBLIC SCHOOLS</b>									
18	MER-018	Eastern Samar	Mercedes	Bgy. 3	Central School	11.09816	125.71101	MA. CORAZON M. GARADO (PRINCIPAL)	2
19	MER-019	Eastern Samar	Mercedes	Bgy. 3	Mercedes National High School	11.09879	125.71262	RUEANO SIELE (PRINCIPAL)	2
20	MER-020	Eastern Samar	Mercedes	Bgy. Banuyo	Bgy. Banuyo Elementary School	11.09735	125.69402	LITA B. VILLARDO (HEAD TEACHER)	2
21	MER-021	Eastern Samar	Mercedes	Bgy. San Jose	Bgy. San Jose Elementary School	11.08957	125.69479	ANNIE D. ESTOR (TEACHER)	2
22	MER-022	Eastern Samar	Mercedes	Bgy. Sung An	Bgy. Sung An Elementary School	11.07562	125.69282	MRS. LORNA RAGANZO (TEACHER)	2
23	MER-023	Eastern Samar	Mercedes	Bgy. Cambarte	Bgy. Cambarte Elementary School	11.07041	125.69843	EVELYN CABELLO (DAY CARE WORKER)	2
24	MER-024	Eastern Samar	Mercedes	Bgy. Cabunga-An	Bgy. Cabunga-An Elementary School	11.08249	125.68448	ELIAS C. WANWAN (BGY. CAPT)	2
25	MER-025	Eastern Samar	Mercedes	Bgy. Bubon	Bgy. Bubon National High School	11.08924	125.67695	DRA. OBEDILIA M. GUINIALES (SCHOOL HEAD)	2
26	MER-026	Eastern Samar	Mercedes	Bgy. Bubon	Bgy. Bubon Elementary School	11.09001	125.67822	JOSE A. ABRANAO (PRINCIPAL)	2
27	MER-027	Eastern Samar	Mercedes	Bgy. Buyayawon	Bgy. Buyayawon Elementary School	11.10816	125.69961	MRS. CHARITO LACABA (BGY. SECRETARY)	2
28	MER-028	Eastern Samar	Mercedes	Bgy. Busay	Bgy. Busay Elementary School	11.08978	125.70701	FEDERICO ABLETES (BGY. CAPT)	2
29	MER-029	Eastern Samar	Mercedes	Bgy. San Roque	Bgy. San Roque Elementary School	11.10179	125.69712	ANTHONY NALDO (BGY. CAPT)	2
<b>CHURCHES</b>									
30	MER-030	Eastern Samar	Mercedes	Bgy. 3	Mercedes Catholic Church	11.09876	125.71130	FR. MOISE MEL A. CAMPO, JR	2
31	MER-031	Eastern Samar	Mercedes	Bgy. Palamrag	Bgy. Palamrag Church	11.08058	125.72067	MRS. TEOFILO REAYNO (VP)	2
32	MER-032	Eastern Samar	Mercedes	Bgy. Anuron	Bgy. Anuron Church	11.08475	125.71982	MRS. CARMELOTA ARIAS (TREASURER)	2
33	MER-033	Eastern Samar	Mercedes	Bgy. Banuyo	Bgy. Banuyo Church	11.09666	125.69438	GORGONIA RANOCO (MEMBER, PARISH)	1
34	MER-034	Eastern Samar	Mercedes	Bgy. San Jose	Bgy. San Jose Church	11.08913	125.69320	VERONICA TALAGTAG	2
35	MER-035	Eastern Samar	Mercedes	Bgy. Sung An	Bgy. Sung An Church	11.07320	125.68815	MRS. NELIA DURAN (BGY. KAGAWAD)	2
36	MER-036	Eastern Samar	Mercedes	Bgy. Cambarte	Bgy. Cambarte Church	11.07027	125.69981	EDUARDO CABELLO (BGY. KAGAWAD)	1
37	MER-037	Eastern Samar	Mercedes	Bgy. Cabunga-An	Bgy. Cabunga-An Church	11.08246	125.68420	ELIAS C. WANWAN (BGY. CAPT)	2
38	MER-038	Eastern Samar	Mercedes	Bgy. Bubon	Bgy. Bubon Church	11.08959	125.67712	ROMEO RANADA (BGY. KAGAWAD)	2
39	MER-039	Eastern Samar	Mercedes	Bgy. Buyayawon	Bgy. Buyayawon Church	11.10762	125.69965	MRS. EMILDA RAYASTA (PRESIDENT PARISH)	1
40	MER-040	Eastern Samar	Mercedes	Bgy. Busay	Bgy. Busay Church	11.08986	125.70747	FEDERICO ABLETES (BGY. CAPT)	2
41	MER-041	Eastern Samar	Mercedes	Bgy. San Roque	Bgy. San Roque Church	11.10089	125.69842	ANTHONY NALDO (BGY. CAPT)	1

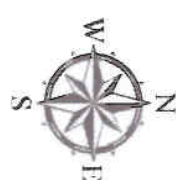
# DESIGNATED EVACUATION CENTERS IN MERCEDES (Pre - Typhoon Yolanda)



No.	Barangay	Evacuation Center
1	Buy 2	Marceles Poblacion Hall/Venue for event
2	Buy 1	Buy 1 Hall
3	Buy 2	Buy 2 Hall
4	Buy 3	Buy 3 Hall
5	Buy 4	Buy 4 Hall
6	Buy Anuron	Buy Anuron & Main Service Station
7	Buy Banuyo	Buy Banuyo Hall
8	Buy Bobon	Buy Bobon Hall
9	Buy Buyayawon	Buy Buyayawon Hall
10	Buy Buyayawon	Buy Buyayawon Hall
11	Buy Cabunga-An	Buy Cabunga-An Hall
12	Buy Cambarte	Buy Cambarte Hall
13	Buy Cambarte	Buy Cambarte Hall
14	Buy San Jose	Buy San Jose Hall
15	Buy San Roque	Buy San Roque Hall
16	Buy San Roque	Buy San Roque Hall
17	Buy Cabunga-An	Buy Cabunga-An Health Center
18	Buy 3	General School
19	Buy 3	Mercedes National High School
20	Buy Banuyo	Buy Banuyo Elementary School
21	Buy San Jose	Buy San Jose Elementary School
22	Buy San Jose	Buy San Jose Elementary School
23	Buy Cambarte	Buy Cambarte Elementary School
24	Buy Cambarte	Buy Cambarte Elementary School
25	Buy Banuyo	Buy Banuyo National High School
26	Buy Banuyo	Buy Banuyo Elementary School
27	Buy Buyayawon	Buy Buyayawon Elementary School
28	Buy Banuyo	Buy Banuyo Elementary School
29	Buy San Roque	Buy San Roque Elementary School
30	Buy 3	Mercedes Catholic Church
31	Buy Anuron	Buy Anuron Church
32	Buy Anuron	Buy Anuron Church
33	Buy Banuyo	Buy Banuyo Church
34	Buy San Jose	Buy San Jose Church
35	Buy San Jose	Buy San Jose Church
36	Buy Cambarte	Buy Cambarte Church
37	Buy Cabunga-An	Buy Cabunga-An Church
38	Buy Bobon	Buy Bobon Church
39	Buy Buyayawon	Buy Buyayawon Church
40	Buy Buyayawon	Buy Buyayawon Church
41	Buy San Roque	Buy San Roque Church

No.	Description	No. of Buildings
1	Destroyed - Not Usable	0
2	Damaged - Not Usable	55
3	Not Damaged - Usable	9
TOTAL		64

## MAP OF MERCEDES EASTERN SAMAR



### Legend

- 1 - DESTROYED - NOT USABLE
- 2 - DAMAGED - NOT USABLE
- 3 - NOMINOR DAMAGE, USABLE

- Barangays, Guilan
- Mercedes Town Hall
- Roads



## KEY MAP