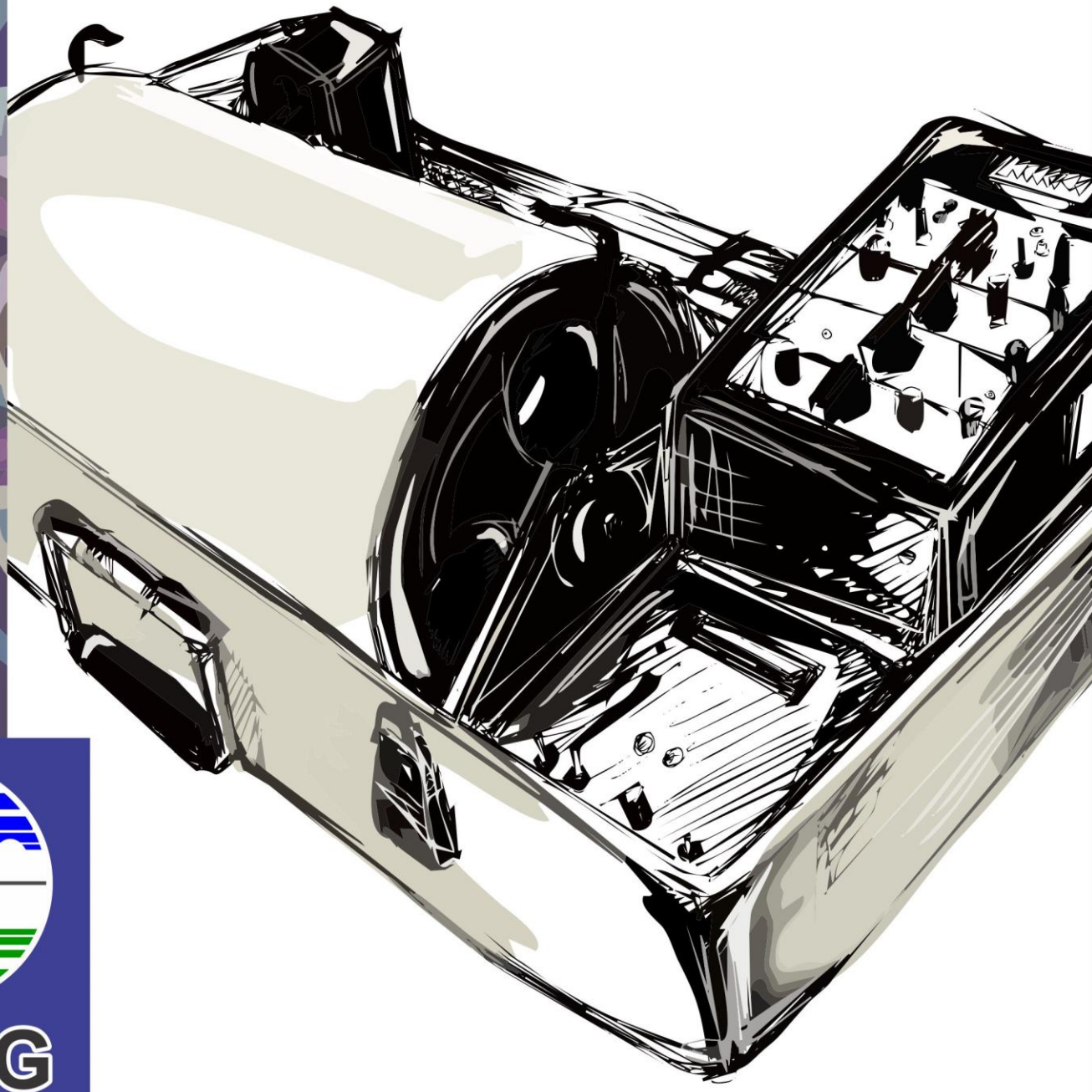
BULETIN TAHUNAN GEMPABUMI TAHUN 2016



BMKG

BADAN METEOROLOGI, KLIMATOLOGI, DAN GEOFISIKA

STASIUN GEOFISIKA KELAS I WINANGUN MANADO

Jl. Harapan No.42, Winangun, Manado, PO BOX 1042

Telp.(0431) 823342, 836060 Fax.(0431) 825667

Email: stageof.winangun@bmkg.go.id

Manado, 2017

BULETIN TAHUNAN GEMPA BUMI TAHUN 2016

BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA

STASIUN GEOFISIKA KLAS I WINANGUN MANADO

Jl. Harapan no. 42 Winangun, Manado
Telp: 0431-823342, 0431-836060, 0431-825667
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Website: *geofisika.manado.bmkg.go.id*

KATA PENGANTAR

Puji dan syukur kehadirat Tuhan Yang Maha Esa, Badan Meteorologi, Klimatologi, dan Geofisika (BMKG), Stasiun Geofisika Klas 1 Geofisika Manado, pada awal tahun 2017 dapat menerbitkan buletin gempa bumi sebagai salah satu produk informasi yang dipublikasikan Stasiun Geofisika Klas 1 Manado.

Buletin Gempa Bumi Stasiun Geofisika Klas 1 Manado tahun 2016 ini dibuat berdasarkan hasil analisa gempa bumi menggunakan software Analisa Sesicomp3. Besar harapan kami, agar buletin ini dapat memenuhi kebutuhan masyarakat dalam pelayanan data gempa bumi beserta seluruh parameternya.

Ucapan terimakasih ditujukan kepada seluruh pihak yang telah mendukung terbitnya buletin ini.

Manado, Pebruari 2017
KEPALA STASIUN GEOFISIKA KLAS 1
WINANGUN MANADO

IRWAN SLAMET, S.T., M.S.i
NIP. 197509101998031001

DAFTAR ISI

DAFTAR TABEL, HISTOGRAM, PRESENTASE DAN GRAFIK

DAFTAR GAMBAR

DATA STASIUN
STASIUN GEOFISIKA KLAS 1 WINANGUN MANADO

1. Kode Stasiun : MNI
2. Alamat Stasiun : Jl. Harapan No.42, Winangun Manado, Kotak Pos 1042
3. Koordinat Stasiun : 01°26’35” LU dan 124°50’21” BT
4. Batuan : Basalt Peroksin
5. Ketinggian : 128 Meter DPL
6. Instrument : Seiscomp3
7. Digitizer : LS-7000
8. Sensor : CMG-3T (BB), K-Seis100 (Acc)
9. Tahun Kalibrasi : -

PETUNJUK KHUSUS

Petunjuk Khusus yang digunakan Analisa Gelombang Seismik adalah sebagai berikut:

a. *Date*
   Menunjukkan tanggal terjadinya gempa bumi.
b. *Time*
   Menunjukkan waktu terjadinya gempa bumi yang terdiri atas HH:MM:SS
   HH : Jam terdinya gempa bumi
   MM : Menit terjadinya gempa bumi
   SS : Detik terjadinya gempa bumi
c. *Latitude*
   Menunjukkan lokasi lintang sumber gempa (episenter).
d. *Longitude*
   Menunjukkan lokasi bujur sumber gempa bumi (episenter)
e. *Depth*
   Menunjukkan kedalaman sumber gempa bumi, dinyatakan dalam km.
f. *Mag*
   Menunjukkan Magnitude atau kekuatan gempa bumi, dinyatakan dalam *Skala Richter (SR).*
g. *TypeMag*
   Menunjukkan type magnitude yang digunakan dalam perhitungan kekuatan gempa bumi.
h. *Region*
   Menunjukkan
i. MMI
   Modified Mercally Intencity menunjukkan skala intensitas goncangan gempa bumi.
j. PGN
   Pusat Gempa Nasional.

SKALA MODIFIED MERCALLI INTENSITY (MMI)

I. Getaran tidak dirasakan kecuali dalam keadaan hening oleh beberapa orang.

II. Getaran dirasakan oleh beberapa orang yang tinggal diam, lebih-lebih di rumah tingkat atas. Benda-benda ringan yang digantung bergoyang.

III. Getaran dirasakan nyata dalam rumah tingkat atas. Terasa getaran seakan ada truk lewat, lamanya getaran dapat ditentukan.

IV. Pada siang hari dirasakan oleh orang banyak dalam rumah, di luar oleh beberapa orang. Pada malam hari orang terbangun, piring dan gelas dapat pecah, jendela dan pintu berbunyi, dinding berderik karena pecah-pecah. Kacau seakan-akan truk besar melanggar rumah, kendaraan yang sedang berhenti bergerak dengan jelas.

V. Getaran dirasakan oleh hampir semua penduduk, orang banyak terbangun. Jendela kaca dan plester dinding pecah, barang-barang terpelanting, pohon-pohon tinggi dan barang-barang besar tampak bergoyang. Bandul lonceng dapat berhenti.

VI. Getaran dirasakan oleh semua penduduk, kebanyakan terkejut dan lari keluar, kadang-kadang meja kursi bergerak, plester dinding dan cerobong asap pabrik rusak. Kerusakan ringan.

VII. Semua orang keluar rumah, kerusakan ringan pada rumah-rumah dengan bangunan dan konstruksi yang baik. Cerobong asap pecah atau retak-retak. Goncangan terasa oleh orang yang naik kendaraan.

VIII. Kerusakan ringan pada bangunan-bangunan dengan konstruksi yang kuat. Retak-retak pada bangunan yang kuat. Banyak kerusakan pada bangunan yang tidak kuat. Dinding dapat lepas dari kerangka rumah, cerobong asap pabrik-pabrik dan monumen-monumen roboh. Meja kursi terlempar, air menjadi keruh, orang naik sepeda motor terasa terganggu.

IX. Kerusakan pada bangunan yang kuat, rangka-rangka rumah menjadi tidak lurus, banyak lubang-lubang karena retak-retak pada bangunan yang kuat. Rumah tampak bergeser dari pondasinya, pipa-pipa dalam tanah putus.

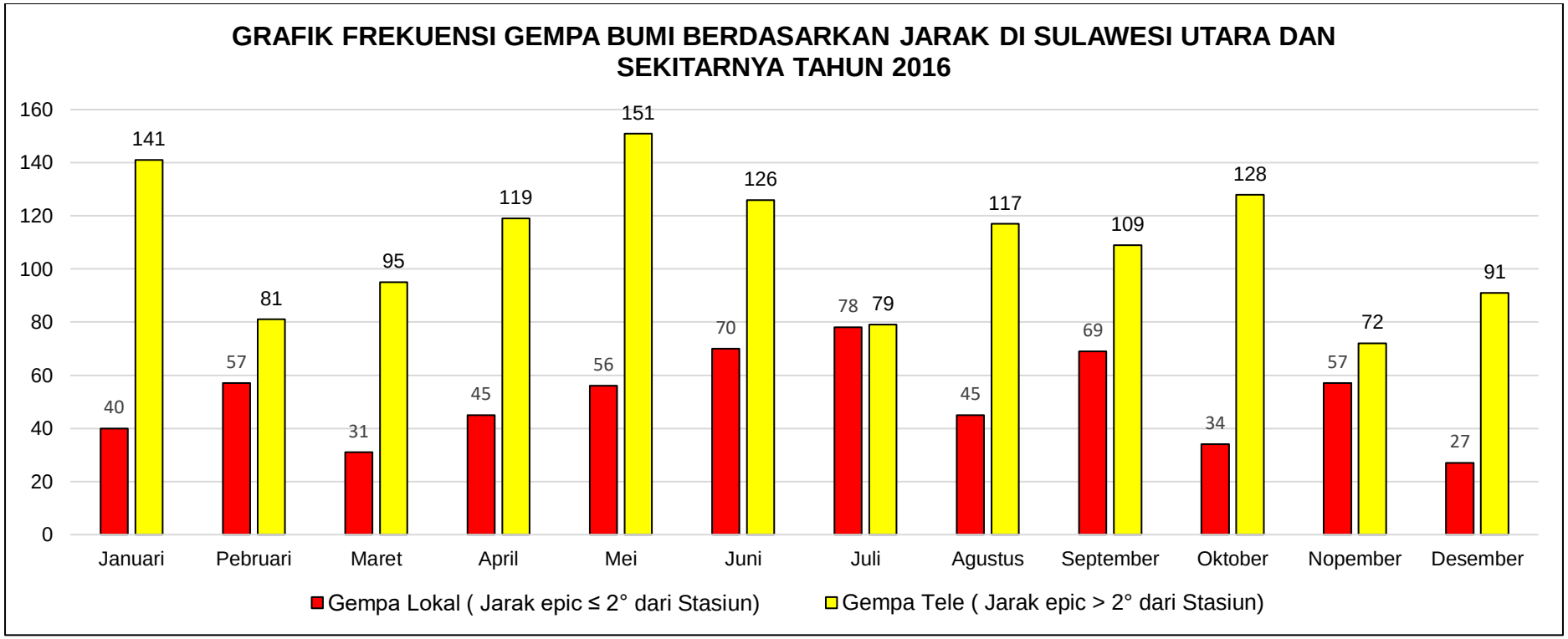
X. Bangunan dari kayu yang kuat rusak, rangka-rangka rumah lepas dari pondasinya, tanah terbelah, rel melengkung. Tanah longsor di sekitar sungai dan tempat-tempat yang curam serta terjadi air bah.

XI. Bangunan-bangunan kayu sedikit yang tetap berdiri, jembatan rusak, terjadi lembah. Pipa dalam tanah tidak dapat dipakai sama sekali, tanah terbelah, rel melengkung sekali.

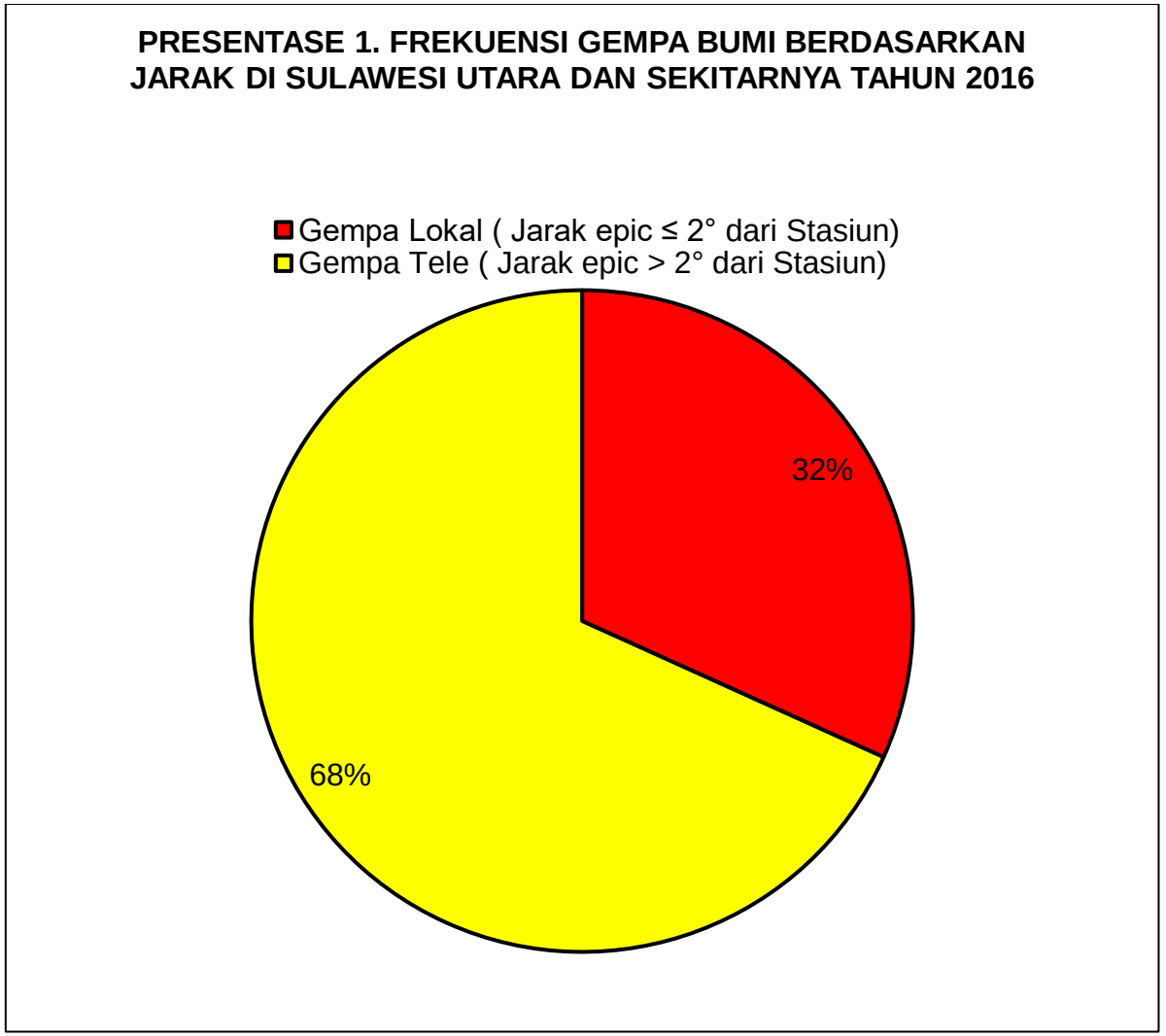
XII. Hancur sama sekali. Gelombang tampak pada permukaan tanah, pemandangan menjadi gelap, benda-benda terlempar ke udara.

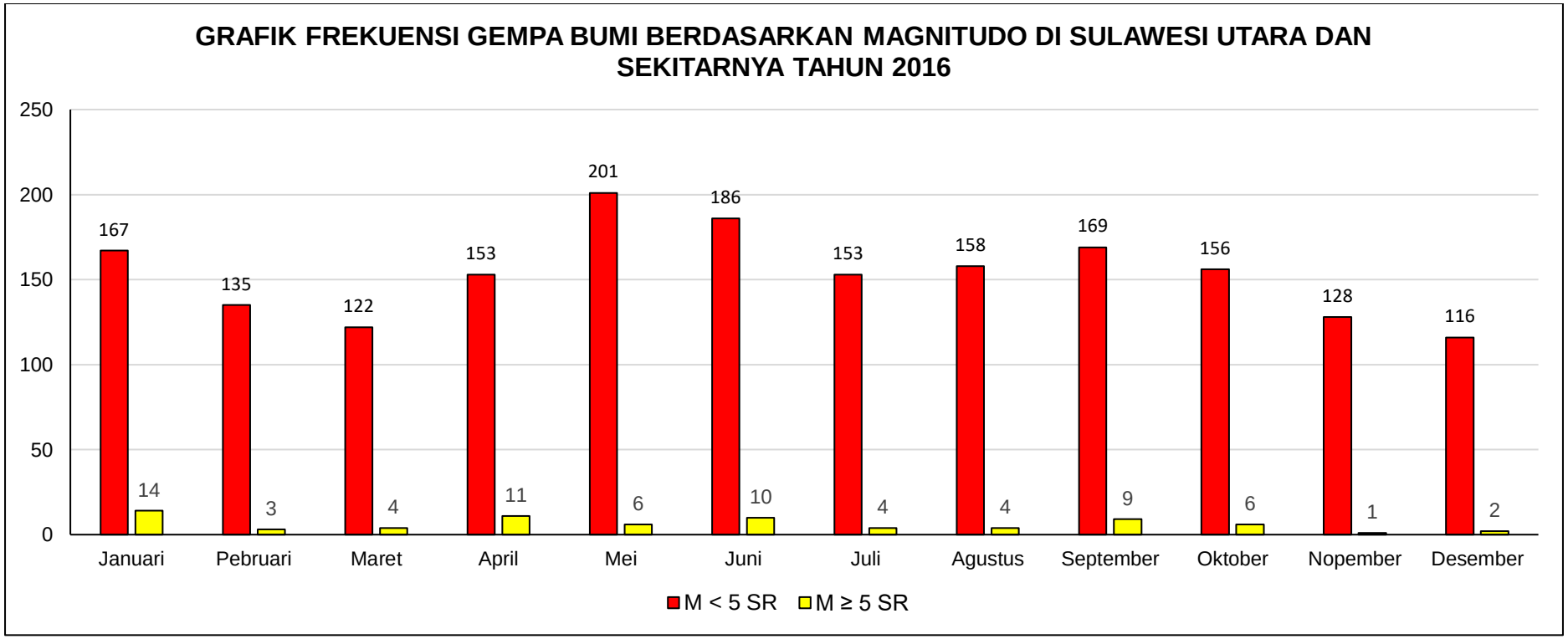
TABEL 1. FREKUENSI GEMPA BUMI DI WILAYAH PUSAT REGIONAL X
STASIUN GEOFISIKA KLAS 1 WINANGUN MANADO PERIODE TAHUN 2016

Bulan	Jumlah Gempa	Frekuensi			
		Gempa Lokal (Jarak epic ≤ 2° dari Stasiun)	Gempa Tele (Jarak epic > 2° dari Stasiun)	M < 5 SR	M ≥ 5 SR
Januari	181	40	141	167	14
Pebruari	138	57	81	135	3
Maret	126	31	95	122	4
April	164	45	119	153	11
Mei	207	56	151	201	6
Juni	196	70	126	186	10
Juli	157	78	79	153	4
Agustus	162	45	117	158	4
September	178	69	109	169	9
Oktober	162	34	128	156	6
Nopember	129	57	72	128	1
Desember	118	27	91	116	2
Total	**1918**	**609**	**1309**	**1844**	**74**


GRAFIK FREKUENSI GEMPA BUMI BERDASARKAN JARAK DI SULAWESI UTARA DAN SEKITARNYA TAHUN 2016
160
140
120
100
80
60
40
20
0
40
141
57
81
31
95
45
119
56
151
70
126
78
79
45
117
69
109
34
128
57
72
27
91
Januari
Pebruari
Maret
April
Mei
Juni
Juli
Agustus
September
Oktober
Nopember
Desember
Gempa Lokal (Jarak epic ≤ 2° dari Stasiun)
Gempa Tele (Jarak epic > 2° dari Stasiun)

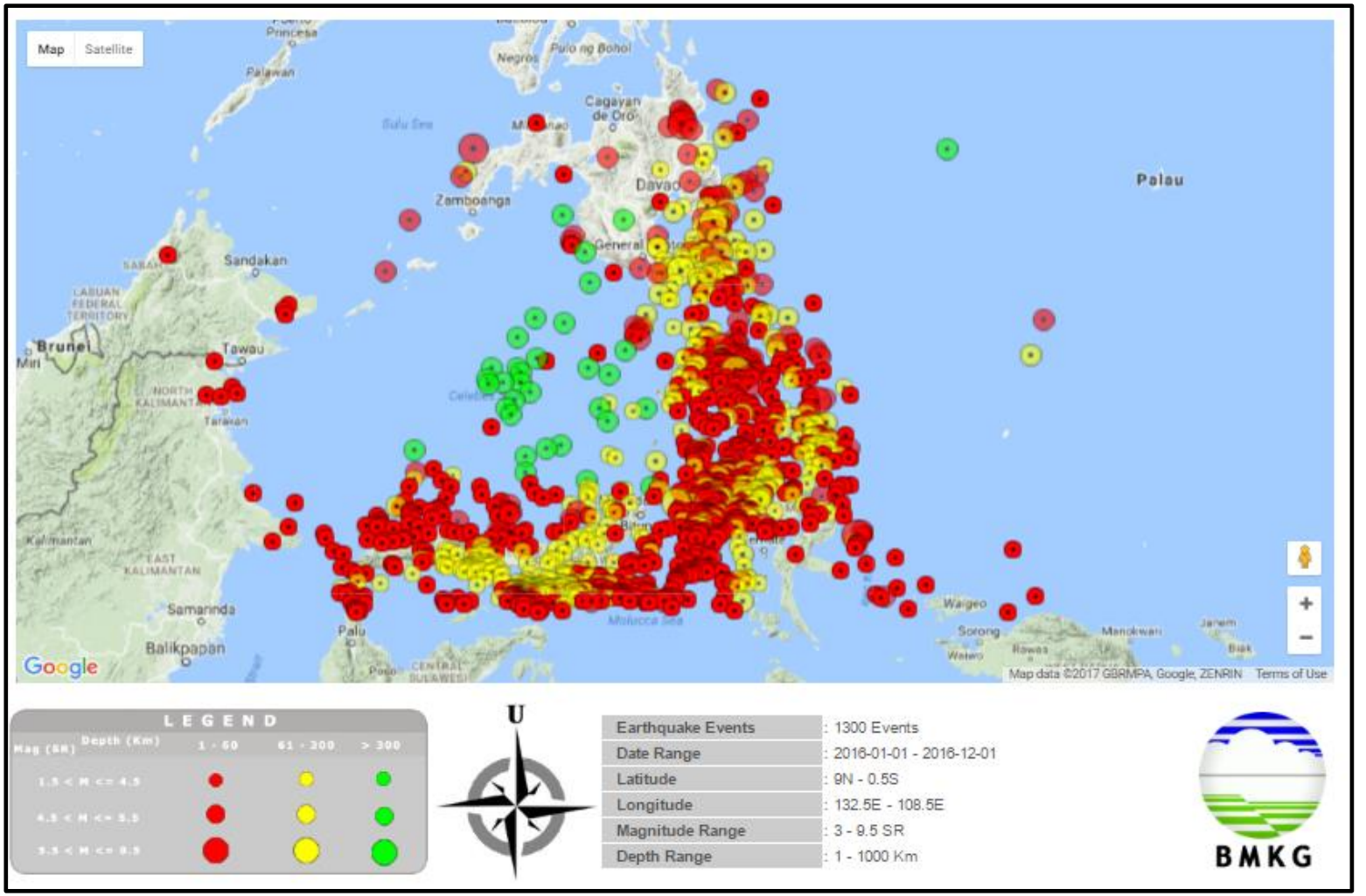
PRESENTASE 1. FREKUENSI GEMPA BUMI BERDASARKAN JARAK DI SULAWESI UTARA DAN SEKITARNYA TAHUN 2016




GRAFIK FREKUENSI GEMPA BUMI BERDASARKAN MAGNITUDO DI SULAWESI UTARA DAN SEKITARNYA TAHUN 2016
250
200
150
100
50
0
167
14
135
3
122
4
153
11
201
6
186
10
153
4
158
4
169
9
156
6
128
1
116
2
Januari
Pebruari
Maret
April
Mei
Juni
Juli
Agustus
September
Oktober
Nopember
Desember
M < 5 SR
M ≥ 5 SR

PRESENTASE 2. FREKUENSI GEMPA BUMI BERDASARKAN MAGNITUDO DI SULAWESI UTARA DAN SEKITARNYA TAHUN 2016

PETA 1. SEBARAN EPISENTER GEMPA BUMI TAHUN 2016



GEMPA BUMI DIRASAKAN DI SULAWESI UTARA DAN SEKITARNYA

TAHUN 2016

No	Tanggal	Waktu (WIB)	Lintang	Bujur	Mag (SR)	Kedalaman (km)	Wilayah	Keterangan
1	11/1/2016	23:38:08	3.8 LU	126.97 BT	6.4	10	58 km Tenggara Kepulauan Talaud, Sulut	Melonguane (4 MMI)
2	20/1/2016	6:38:22	1.93 LU	127.45 BT	4.4	10	27 km Timur Laut Ternate, Malut	Jailolo (3 MMI)
3	9/2/2016	8:14:10	4.04 LU	126.59 BT	4.1	21	14 km Barat Daya Talaud, Sulut	Melonguane danTalaud (3 MMI)
4	19/2/2016	10:12:14	2.36 LU	128.91 BT	4.2	10	53 km Timur Laut Pulau Morotai, Malut	Morotai (3 MMI)
5	24/2/2016	3:47:36	1.03 LU	127.38 BT	5.1	10	40 km Barat Laut Tidore-Kep.Maluku Utara, Malut	Jailolo (4 MMI)
6	24/2/2016	13:36:34	1.04 LU	127.22 BT	3.9	10	34 km Barat Laut Ternate, Malut	Ternate (2 MMI)
7	3/3/2016	23:23:10	3.88 LU	126.15 BT	5	93	65 km Barat Daya Kep. Talaud , Sulut	Sangihe dan Tatoareng (2 MMI)
8	4/3/2016	13:27:48	1.32 LU	127.13 BT	4.4	50	51 km Barat Daya Halmahera Barat, Malut	Ternate (2 MMI)
9	4/4/2016	18:13:59	1.3 LU	123.98 BT	4.9	10	58 km Barat Laut Minahasa Selatan, Sulut	Minahasa Selatan (4 MMI)
10	5/4/2016	15:29:19	4.24 LU	126.66 BT	5.6	30	28 km Barat Laut Kep. Talaud, Sulut	Melonguane (5 MMI)
11	5/4/2016	15:52:35	0.42 LS	126.89 BT	5.1	29	135 km Barat Daya Tidore, Malut	Ternate (2 MMI)
12	7/4/2016	5:19:24	3.95 LU	126.71 BT	5	11	10 km Barat Daya Kep Talaud, Sulut	Talaud (3 MMI)
13	7/4/2016	11:09:22	1.24 LU	122.73 BT	5.1	10	43 km Timur Laut Gorontalo Utara, Gorontalo	Gorontalo (3 MMI)
14	15/4/2016	11:50:12	2.04 LU	126.98 BT	5.6	79	102 km Barat Laut Halmahera Barat, Malut	Galela dan Ternate (3 MMI)
15	15/4/2016	18:05:27	4.2 LU	126.72 BT	5.1	11	17 km Timur Laut Kep. Talaud, Sulut	Melonguane (3 MMI)
16	30/4/2016	23:33:28	0.13 LS	123.48 BT	4.5	138	71 km Barat Daya Bolaang Mongondow Selatan, Sulut	Gorontalo (2 MMI)
17	9/5/2016	10:02:43	0.98 LU	120.98 BT	4.2	10	27 km Timur Laut Tolitoli, Sulteng	Toli-Toli (4 MMI)
18	12/5/2016	4:39:10	1.45 LU	125.93 BT	5	11	89 km Timur Laut Bitung, Sulut	Bitung (3 MMI)
20	14/5/2016	9:35:24	1.74 LU	127.94 BT	4.1	5	10 km Barat Laut Tobelo, Malut	Galela (3 MMI)
21	14/5/2016	9:58:25	1.73 LU	127.81 BT	4.1	10	26 km Barat Laut Halmahera Utara, Malut	Galela (3 MMI)
19	14/5/2016	10:44:47	1.62 LU	127.8 BT	4.2	10	16 km Barat Laut Halmahera Utara, Malut	Galela (3 MMI)
22	27/5/2016	20:39:49	2.62 LU	128.19 BT	5.1	110	36 km Barat Laut Pulau Morotai, Malut	Tobelo (2 MMI)
23	4/6/2016	17:44:10	0.46 LU	126.43 BT	5.3	10	111 km Barat Daya Ternate, Malut	Ternate (3 MMI)
24	8/6/2016	2:15:17	1.37 LU	126.37 BT	6.4	58	124 km Barat Laut Ternate, Malut	Ternate (4 MMI)
25	19/6/2016	12:00:14	1.04 LU	126.16 BT	5.1	64	121 km Tenggara Bitung , Sulut	Jailolo (3 MMI)
26	20/6/2016	9:34:17	1.01 LU	127.53 BT	3.3	6	9 km Tenggara Jailolo, Malut	Jailolo (3 MMI)
27	30/6/2016	17:46:17	1.09 LU	121.76 BT	5	10	42 km Timur Laut Pohuwato, Gorontalo	Gorontalo Utara (3 MMI)
28	30/6/2016	18:43:13	0.5 LU	123.62 BT	5	228	26 km Barat Laut Bolaang Mongondow Selatan, Sulut	Bone Bolango,Kota Gorontalo (2 MMI)
29	4/7/2016	19:16:42	2.07 LU	127.77 BT	4.5	7	64 km Barat Laut Halmahera Utara, Malut	Galela (3 MMI)

30	20/7/2016	10:58:32	0.06 LS	122.9 BT	5.2	154	69 km Barat Daya Gorontalo, Gorontalo	Gorontalo (3 MMI)
31	24/7/2016	4:30:06	1.16 LU	126.84 BT	4.6	18	86 km Barat Daya Halmahera Barat, Malut	Ternate (2 MMI)
32	29/7/2016	15:29:27	0.04 LS	123.48 BT	5.4	127	63 km Barat Daya Bolaang Mongondow Selatan, Sulut	Gorontalo, Puhowato, Limboto (2 MMI)
33	9/8/2016	17:19:41	0.57 LU	122.34 BT	4.8	66	16 km Tenggara Boalemo, Gorontalo	Gorontalo (3 MMI)
34	11/8/2016	8:06:22	1.36 LU	120.78 BT	4.6	10	53 km Timur Laut Toli-Toli, Sulteng	Toli-Toli (4 MMI)
35	3/8/2016	15:19:40	0.23 LS	123.3 BT	4.6	80	88 km Barat Daya Bonebolango,Gorontalo	Gorontalo (3 MMI)
36	14/8/2016	21:29:01	1.62 LU	126.93 BT	5.2	81	71 km Barat Laut Halmahera, Malut	Jailolo (3 MMI)
37	1/9/2016	15:27:30	2.93 LU	126.6 BT	4.7	10	123 km Barat Daya Kep-Talaud, Sulut	Siau (2 MMI)
38	4/9/2016	23:27:01	1.22 LU	122.7 BT	4.8	13	40 km Timur Laut Gorontalo Utara, Gorontalo	Gorontalo (2 MMI)
39	18/9/2016	12:54:15	2.60 LU	128.54 BT	4.8	72	67 km Timur Laut Daruba, Malut	Pulau Morotai, Daruba (2-3 MMI)
40	24/9/2016	5:53:16	6.12 LU	126.47 BT	6.6	78	269 km Barat Laut Kep. Talaud , Sulut	Pos Awu Tahuna (3 MMI)
41	7/10/2016	23:17:31	1.52 LU	127.12 BT	5	100	55 km Barat Laut Halmahera Barat, Malut	Ternate Utara (2 MMI)
42	9/10/2016	21:46:27	1.79 LU	127.41 BT	6.2	117	52 km Barat Laut Halmahera Barat, Malut	Tondano (4 MMI)
43	27/10/2016	15:17:49	1.32 LU	125.79 BT	6.1	10	75 km Tenggara Bitung, Sulut	Manado, Bitung, Kotamobagu, Bolaang Mongondow Timur, Tagulandang, Tahuna (4 MMI)
44	26/11/2016	19:42:27	1.47 LU	120.87 BT	4.3	10	67 km Timur Laut Toli-Toli, Sulteng	Toli - Toli (3 MMI)
45	7/12/2016	15:36:19	1.16 LU	126.46 BT	4.7	10	80 km Barat Laut Ternate, Malut	Ternate Utara (3 MMI)

DATA GEMPABUMI BULAN JANUARI 2016

Tanggal	Waktu (UTC)	Episenter		Kedalaman (km)	Mag. (SR)	PGA (gals)			Keterangan
		Lintang	Bujur			X	Y	Z	
01/01/2016	04:21:21	1.67	128.36	79	3.6				Halmahera, Indonesia
01/01/2016	09:53:55	-0.74	122.69	71	3.4				Minahassa Peninsula, Sulawesi
01/01/2016	12:00:15	-1.41	120.10	10	3.7				Sulawesi, Indonesia
01/01/2016	15:53:33	-2.55	120.57	10	3.7				Sulawesi, Indonesia
01/01/2016	16:17:54	-1.51	120.22	10	2.8				Sulawesi, Indonesia
01/01/2016	18:24:37	0.93	119.59	10	3.5				Minahassa Peninsula, Sulawesi
01/01/2016	20:05:10	-0.34	124.94	10	3.6				Southern Molucca Sea
02/01/2016	19:45:17	-1.04	120.93	10	3.0				Sulawesi, Indonesia
02/01/2016	21:21:32	1.67	126.32	63	3.3				Northern Molucca Sea
02/01/2016	22:34:31	0.58	125.73	10	3.4				Northern Molucca Sea
03/01/2016	07:52:12	5.31	126.15	135	4.5				Mindanao, Philippines
03/01/2016	10:48:56	-1.25	121.12	6	3.5				Sulawesi, Indonesia
03/01/2016	14:03:48	-0.08	123.21	135	4.3				Minahassa Peninsula, Sulawesi
03/01/2016	14:33:09	4.72	126.81	38	4.3				Talaud Islands, Indonesia
03/01/2016	15:39:00	0.10	122.60	253	3.9				Minahassa Peninsula, Sulawesi
04/01/2016	10:04:20	2.90	118.34	10	4.9				Celebes Sea
04/01/2016	12:53:30	0.18	120.21	20	4.0				Minahassa Peninsula, Sulawesi
04/01/2016	19:31:41	-0.44	127.27	44	4.0				Halmahera, Indonesia
05/01/2016	09:08:28	0.27	122.00	30	3.4				Minahassa Peninsula, Sulawesi
05/01/2016	12:50:42	-1.38	122.63	10	3.9				Sulawesi, Indonesia
05/01/2016	17:51:24	-0.46	126.84	12	3.5				Southern Molucca Sea
05/01/2016	18:40:29	3.46	127.48	10	3.9				Talaud Islands, Indonesia
05/01/2016	23:19:22	0.03	123.32	151	3.1				Minahassa Peninsula, Sulawesi
06/01/2016	10:11:37	0.60	122.41	33	4.2				Minahassa Peninsula, Sulawesi
06/01/2016	10:58:45	2.81	125.75	10	4.0				Talaud Islands, Indonesia
06/01/2016	11:01:50	1.24	126.50	10	3.4				Northern Molucca Sea
06/01/2016	11:17:32	0.38	120.60	42	4.4				Minahassa Peninsula, Sulawesi
06/01/2016	14:09:14	0.65	127.99	378	4.7				Halmahera, Indonesia
07/01/2016	03:07:43	3.01	128.12	104	4.7				North of Halmahera, Indonesia
07/01/2016	15:39:27	0.92	122.54	17	4.7				Minahassa Peninsula, Sulawesi
07/01/2016	17:27:13	3.47	117.68	16	4.0				Borneo
07/01/2016	17:43:16	-0.22	126.69	10	4.3				Southern Molucca Sea
07/01/2016	21:37:03	4.72	125.12	10	4.7				Talaud Islands, Indonesia
07/01/2016	23:26:34	-0.33	122.31	10	3.6				Minahassa Peninsula, Sulawesi
08/01/2016	00:41:51	-0.03	120.80	53	4.4				Minahassa Peninsula, Sulawesi
08/01/2016	02:35:32	2.51	128.45	211	4.6				Halmahera, Indonesia
08/01/2016	07:40:08	4.17	127.55	750	4.6				Talaud Islands, Indonesia
08/01/2016	14:17:23	0.40	127.12	135	4.1				Halmahera, Indonesia
08/01/2016	18:56:00	3.55	121.77	10	4.2				Celebes Sea
08/01/2016	19:02:50	0.78	123.72	458	3.9				Minahassa Peninsula, Sulawesi
08/01/2016	19:03:29	0.27	122.01	149	3.2				Minahassa Peninsula, Sulawesi
08/01/2016	21:57:20	-0.21	122.88	73	3.9				Minahassa Peninsula, Sulawesi
08/01/2016	23:51:59	1.21	121.39	12	4.1				Minahassa Peninsula, Sulawesi
09/01/2016	13:56:00	5.46	126.20	141	4.5				Mindanao, Philippines
09/01/2016	16:42:10	1.24	128.80	10	4.1				Halmahera, Indonesia
09/01/2016	23:09:06	0.43	126.08	9	3.6				Northern Molucca Sea
10/01/2016	01:30:47	2.39	128.44	10	3.9				Halmahera, Indonesia
10/01/2016	05:12:27	0.09	121.82	10	2.8				Minahassa Peninsula, Sulawesi

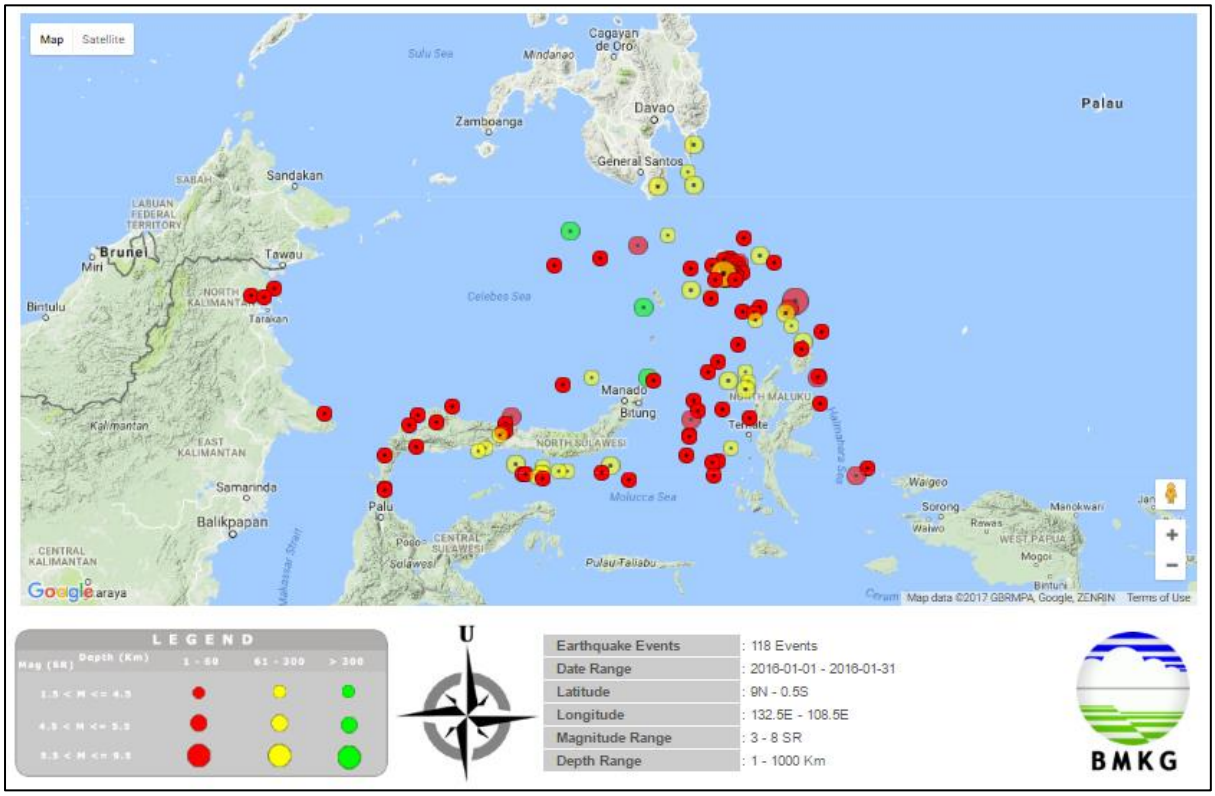
10/01/2016	06:43:01	2.44	128.85	379	4.1				Halmahera, Indonesia
10/01/2016	12:45:13	4.27	127.66	98	5.2				Talaud Islands, Indonesia PGN = Info Gempa Mag:5.2 SR, 10-Jan-16 19:45:13 WIB, Lok:4.29 LU,127.66 BT (94 km Tenggara KEP-TALAUD-SULUT), Kedlmn:95 Km ::BMKG
10/01/2016	14:26:36	-0.32	123.08	24	3.3				Minahassa Peninsula, Sulawesi
10/01/2016	17:15:41	11.82	121.90	207	4.4				Panay, Philippines
11/01/2016	02:41:43	-0.10	124.53	50	4.9				Southern Molucca Sea
11/01/2016	11:54:00	-0.23	116.93	10	4.4				Borneo
11/01/2016	12:45:28	3.58	117.66	10	3.6				Borneo
11/01/2016	12:51:02	2.78	128.94	0	4.3				Halmahera, Indonesia
11/01/2016	16:38:07	3.85	126.99	10	6.5				Talaud Islands, Indonesia PGN = Info Gempa Mag:6.4 SR, 11-Jan-16 23:38:08 WIB, Lok:3.80 LU,126.97 BT (58 km Tenggara KEP-TALAUD-SULUT), Kedlmn:10 Km ::BMKG
11/01/2016	16:54:26	4.29	127.30	7	4.9				Talaud Islands, Indonesia
11/01/2016	17:01:24	4.01	127.03	10	5.0				Talaud Islands, Indonesia
11/01/2016	17:42:31	4.45	127.26	10	4.3				Talaud Islands, Indonesia
11/01/2016	17:49:47	4.13	127.15	37	3.8				Talaud Islands, Indonesia
11/01/2016	17:58:32	3.83	126.97	10	3.7				Talaud Islands, Indonesia
11/01/2016	18:04:26	4.38	127.31	10	4.1				Talaud Islands, Indonesia
11/01/2016	19:14:44	3.90	127.07	10	4.0				Talaud Islands, Indonesia
11/01/2016	20:02:54	1.68	119.11	147	5.0				Celebes Sea
11/01/2016	20:04:37	3.87	127.00	10	4.0				Talaud Islands, Indonesia
11/01/2016	20:22:30	0.94	113.97	352	3.9				Borneo
11/01/2016	21:20:38	3.82	127.05	10	4.3				Talaud Islands, Indonesia
11/01/2016	21:51:28	4.02	127.09	10	4.0				Talaud Islands, Indonesia
11/01/2016	23:45:20	5.92	128.56	10	4.8				East of Philippine Islands
12/01/2016	03:05:32	-1.95	125.86	10	3.6				Southern Molucca Sea
12/01/2016	12:27:23	3.77	127.12	10	4.9				Talaud Islands, Indonesia
12/01/2016	13:42:07	0.69	126.56	10	3.6				Northern Molucca Sea
12/01/2016	19:35:49	3.79	127.11	10	3.8				Talaud Islands, Indonesia
12/01/2016	20:00:06	0.98	122.55	10	3.0				Minahassa Peninsula, Sulawesi
12/01/2016	20:20:05	3.86	127.08	11	4.4				Talaud Islands, Indonesia
12/01/2016	21:08:25	3.93	126.91	94	4.4				Talaud Islands, Indonesia
13/01/2016	03:05:34	3.89	127.22	10	4.4				Talaud Islands, Indonesia
13/01/2016	05:06:53	5.62	127.63	0	4.7				Philippine Islands Region
13/01/2016	06:23:19	-0.52	119.97	10	4.1				Minahassa Peninsula, Sulawesi
13/01/2016	07:48:42	5.63	125.63	174	4.8				Mindanao, Philippines
13/01/2016	09:46:39	3.95	127.06	10	4.2				Talaud Islands, Indonesia
13/01/2016	20:17:43	4.05	127.13	12	4.3				Talaud Islands, Indonesia
13/01/2016	20:23:57	2.77	118.90	436	4.3				Celebes Sea
13/01/2016	20:24:14	1.26	117.75	279	4.1				Borneo
13/01/2016	22:54:36	4.00	126.62	10	4.1				Talaud Islands, Indonesia
14/01/2016	00:10:20	3.84	127.00	10	4.4				Talaud Islands, Indonesia
14/01/2016	02:35:47	4.57	127.95	10	4.5				Talaud Islands, Indonesia
14/01/2016	05:41:04	3.77	126.97	10	4.3				Talaud Islands, Indonesia
14/01/2016	05:55:35	5.61	126.17	10	4.7				Mindanao, Philippines
14/01/2016	10:33:10	-3.20	123.45	117	4.2				Sulawesi, Indonesia
14/01/2016	16:08:42	-0.04	123.24	0	3.5				Minahassa Peninsula, Sulawesi
15/01/2016	00:08:20	2.21	126.82	10	4.0				Northern Molucca Sea
15/01/2016	05:24:28	7.73	125.41	429	5.1				Mindanao, Philippines

15/01/2016	09:53:02	2.60	128.41	228	4.4				Halmahera, Indonesia
15/01/2016	16:15:20	3.31	126.53	10	4.0				Talaud Islands, Indonesia
15/01/2016	17:30:52	1.03	126.74	10	3.5				Northern Molucca Sea
15/01/2016	19:21:05	1.94	126.51	10	3.4				Northern Molucca Sea
15/01/2016	19:52:54	3.93	127.09	10	3.8				Talaud Islands, Indonesia
15/01/2016	21:46:33	-1.40	124.21	160	3.8				Southern Molucca Sea
16/01/2016	01:10:35	1.10	126.34	10	4.1				Northern Molucca Sea
16/01/2016	14:18:02	-0.37	125.68	10	3.9				Southern Molucca Sea
17/01/2016	03:05:28	-0.58	120.38	83	4.5				Minahassa Peninsula, Sulawesi
17/01/2016	09:51:05	-0.21	123.03	10	4.1				Minahassa Peninsula, Sulawesi
17/01/2016	09:56:08	5.71	126.97	169	4.2				Mindanao, Philippines
17/01/2016	16:53:47	3.22	128.30	10	4.7				North of Halmahera, Indonesia
17/01/2016	21:13:05	3.89	122.18	5	4.5				Celebes Sea
17/01/2016	23:49:19	0.26	126.19	10	3.6				Northern Molucca Sea
18/01/2016	04:07:20	-1.78	129.11	10	3.9				Halmahera, Indonesia
18/01/2016	09:08:11	6.69	127.69	159	4.7				Philippine Islands Region
18/01/2016	10:25:59	1.56	128.04	254	4.9				Halmahera, Indonesia
18/01/2016	11:20:20	-1.63	128.49	10	3.8				Halmahera, Indonesia
18/01/2016	11:45:13	0.78	128.43	110	3.4				Halmahera, Indonesia
18/01/2016	12:24:42	0.26	121.17	10	3.7				Minahassa Peninsula, Sulawesi
18/01/2016	13:01:16	-0.99	122.73	10	4.0				Minahassa Peninsula, Sulawesi
18/01/2016	13:47:04	2.44	132.90	150	4.8				Irian Jaya Region, Indonesia
18/01/2016	15:22:32	0.75	124.73	200	3.9				Minahassa Peninsula, Sulawesi
18/01/2016	16:27:05	6.38	127.20	10	4.9				Philippine Islands Region
18/01/2016	17:38:44	-0.47	119.01	10	4.0				Minahassa Peninsula, Sulawesi
18/01/2016	19:21:53	-0.22	129.56	39	5.2				Halmahera, Indonesia PGN = Info Gempa Mag:5.1 SR, 19-Jan-16 02:21:51 WIB, Lok:0.19 LS,129.53 BT (174 km TimurLaut HALMAHERASELATAN-MALUT), Kedlmn:10 Km ::BMKG
18/01/2016	22:08:54	1.82	124.15	328	3.7				Minahassa Peninsula, Sulawesi
18/01/2016	22:14:14	0.50	124.97	282	4.4				Minahassa Peninsula, Sulawesi
18/01/2016	22:33:23	0.48	128.43	10	4.8				Halmahera, Indonesia
19/01/2016	03:10:37	0.35	121.29	10	4.6				Minahassa Peninsula, Sulawesi
19/01/2016	04:14:31	1.85	132.67	77	4.4				Irian Jaya Region, Indonesia
19/01/2016	15:10:59	-0.48	124.01	209	4.9				Southern Molucca Sea
19/01/2016	16:59:58	7.00	123.57	5	4.6				Mindanao, Philippines
19/01/2016	20:51:29	1.85	124.21	287	4.6				Minahassa Peninsula, Sulawesi
19/01/2016	22:04:06	1.51	127.30	140	5.1				Halmahera, Indonesia PGN = Info Gempa Mag:5.1 SR, 20-Jan-16 05:04:07 WIB, Lok:1.49 LU,127.27 BT (34 km BaratLaut HALMAHERABARAT-MALUT), Kedlmn:134 Km ::BMKG
19/01/2016	23:38:23	0.92	127.44	16	4.3				Halmahera, Indonesia
20/01/2016	10:32:12	1.73	126.42	416	4.1				Northern Molucca Sea
20/01/2016	19:11:34	0.02	125.24	10	3.6				Northern Molucca Sea
20/01/2016	21:08:36	3.60	119.81	10	4.6				Celebes Sea
21/01/2016	01:31:47	3.55	120.06	10	5.4				Celebes Sea
21/01/2016	01:43:29	-1.45	125.50	10	4.3				Southern Molucca Sea
21/01/2016	08:16:51	1.70	126.89	93	4.9				Northern Molucca Sea
21/01/2016	20:10:45	3.52	126.89	10	4.6				Talaud Islands, Indonesia
21/01/2016	20:23:30	4.13	127.07	10	4.6				Talaud Islands, Indonesia

22/01/2016	03:16:45	2.56	127.38	10	3.7				Northern Molucca Sea
22/01/2016	13:00:11	-0.47	125.02	350	4.2				Southern Molucca Sea
22/01/2016	15:19:08	3.95	127.07	10	4.3				Talaud Islands, Indonesia
22/01/2016	22:42:33	0.82	120.68	23	3.2				Minahassa Peninsula, Sulawesi
23/01/2016	02:08:04	3.57	126.23	91	4.8				Talaud Islands, Indonesia
23/01/2016	04:39:41	2.52	125.93	254	4.0				Talaud Islands, Indonesia
23/01/2016	08:32:25	-0.96	121.00	191	4.1				Minahassa Peninsula, Sulawesi
23/01/2016	12:29:03	3.90	126.93	10	4.4				Talaud Islands, Indonesia
23/01/2016	22:08:07	5.75	128.25	10	4.6				East of Philippine Islands
23/01/2016	22:09:09	-0.37	127.49	219	3.5				Halmahera, Indonesia
24/01/2016	01:12:45	-1.04	125.41	10	4.4				Southern Molucca Sea
24/01/2016	07:49:48	1.54	125.39	10	3.9				Northern Molucca Sea
24/01/2016	10:20:14	-0.35	121.94	10	3.2				Minahassa Peninsula, Sulawesi
24/01/2016	10:41:11	-0.93	128.26	750	5.4				Halmahera, Indonesia
24/01/2016	16:30:44	5.11	126.55	120	3.9				Mindanao, Philippines
24/01/2016	19:54:45	0.58	119.99	395	3.1				Minahassa Peninsula, Sulawesi
24/01/2016	20:50:34	-0.01	126.66	15	4.1				Southern Molucca Sea
25/01/2016	02:06:42	2.95	131.19	108	4.4				Irian Jaya Region, Indonesia
25/01/2016	09:17:46	3.35	128.44	10	5.7				North of Halmahera, Indonesia PGN = Info Gempa Mag:5.6 SR, 25-Jan-16 16:17:46 WIB, Lok:3.32 LU,128.46 BT (108 km TimurLaut PULAUMOROTAI-MALUT), Kedlmn:10 Km ::BMKG
25/01/2016	23:05:11	5.51	121.52	380	4.6				Celebes Sea
26/01/2016	07:48:07	1.59	121.89	10	5.0				Minahassa Peninsula, Sulawesi
26/01/2016	13:42:59	4.16	126.16	112	4.0				Talaud Islands, Indonesia
26/01/2016	14:36:57	6.44	123.71	567	4.6				Mindanao, Philippines
27/01/2016	01:26:48	0.00	129.81	10	4.1				Halmahera, Indonesia
27/01/2016	17:11:11	1.21	126.72	10	3.3				Northern Molucca Sea
28/01/2016	01:27:10	4.67	123.77	502	4.5				Celebes Sea
28/01/2016	04:20:41	7.13	123.66	10	4.8				Mindanao, Philippines
28/01/2016	09:26:10	3.65	130.82	336	4.5				North of Halmahera, Indonesia
28/01/2016	21:21:47	-0.46	124.36	168	4.3				Southern Molucca Sea
28/01/2016	21:35:32	1.64	127.11	95	4.1				Halmahera, Indonesia
29/01/2016	07:07:52	1.74	128.78	10	4.7				Halmahera, Indonesia
29/01/2016	07:11:22	1.61	128.80	10	4.5				Halmahera, Indonesia
29/01/2016	07:32:56	-0.48	130.03	10	3.9				Irian Jaya Region, Indonesia
29/01/2016	17:32:34	0.82	126.13	10	4.9				Northern Molucca Sea
30/01/2016	01:59:50	1.67	128.62	516	4.4				Halmahera, Indonesia
30/01/2016	14:10:07	4.10	126.69	10	4.0				Talaud Islands, Indonesia
30/01/2016	17:29:55	3.15	127.26	14	4.4				Talaud Islands, Indonesia
30/01/2016	19:00:21	1.22	124.23	523	5.2				Minahassa Peninsula, Sulawesi
30/01/2016	20:32:59	3.27	127.49	12	4.3				Talaud Islands, Indonesia
31/01/2016	17:57:39	3.93	126.15	70	4.4				Talaud Islands, Indonesia

PETA 2. DISTRIBUSI EPISENTER GEMPABUMI DAERAH SULAWESI UTARA DAN SEKITARNYA

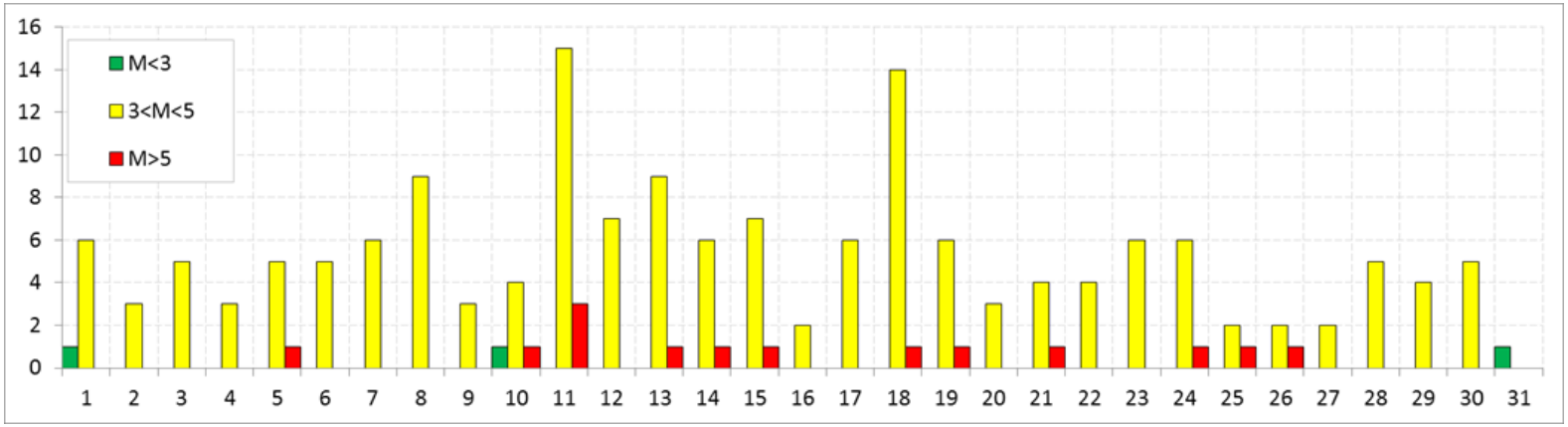
BULAN JANUARI 2016



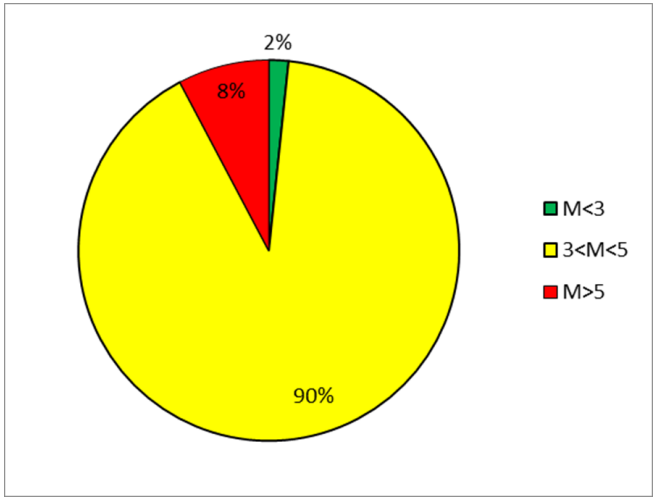
TABEL 2. REKAPITULASI GEMPABUMI DAN TSUNAMI BERDASARKAN MAGNITUDO BULAN JANUARI 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah gempa signifikan	
	M<3	3<M<5	M>5		Dirasakan	Merusak
1	1	6	0	7	0	0
2	0	3	0	3	0	0
3	0	5	0	5	0	0
4	0	3	0	3	0	0
5	0	5	1	6	0	0
6	0	5	0	5	0	0
7	0	6	0	6	0	0
8	0	9	0	9	0	0
9	0	3	0	3	0	0
10	1	4	1	6	0	0
11	0	15	3	18	1	0
12	0	7	0	7	0	0
13	0	9	1	10	1	0
14	0	6	1	7	0	0
15	0	7	1	8	0	0
16	0	2	0	2	0	0
17	0	6	0	6	0	0
18	0	14	1	15	0	0
19	0	6	1	7	1	0
20	0	3	0	3	1	0
21	0	4	1	5	0	0
22	0	4	0	4	0	0
23	0	6	0	6	0	0
24	0	6	1	7	0	0
25	0	2	1	3	0	0
26	0	2	1	3	0	0
27	0	2	0	2	0	0
28	0	5	0	5	0	0
29	0	4	0	4	1	0
30	0	5	0	5	0	0
31	1	0	0	1	0	0
Jumlah gempa	3	164	14	181	5	0

Histogram 1. Gempabumi Berdasarkan Magnitudo Bulan Januari 2016



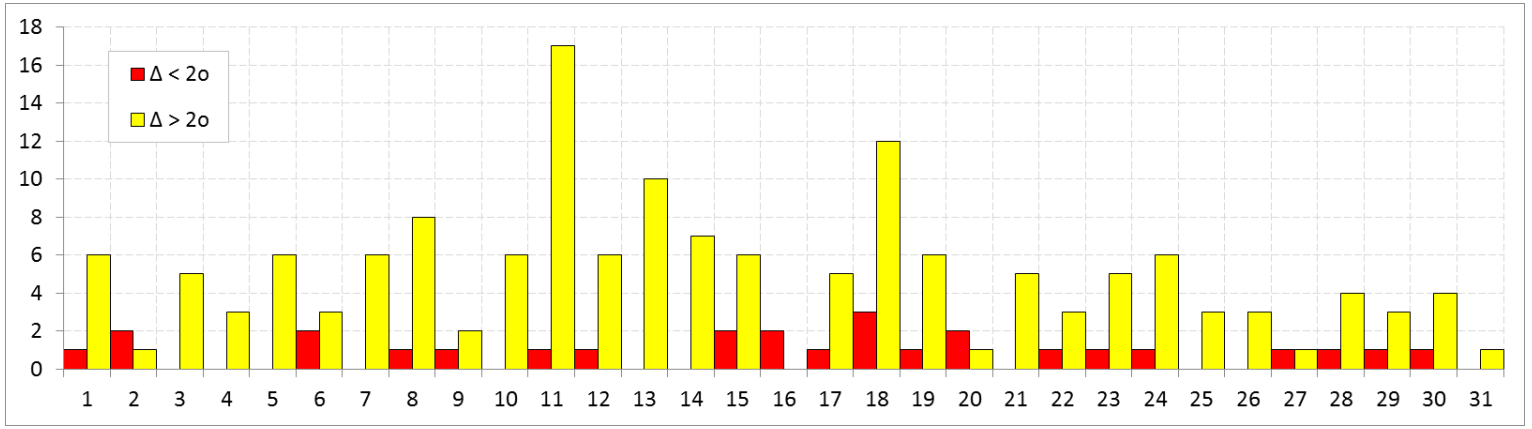
Persentase 3. Gempabumi Berdasarkan Magnitudo Bulan Januari 2016



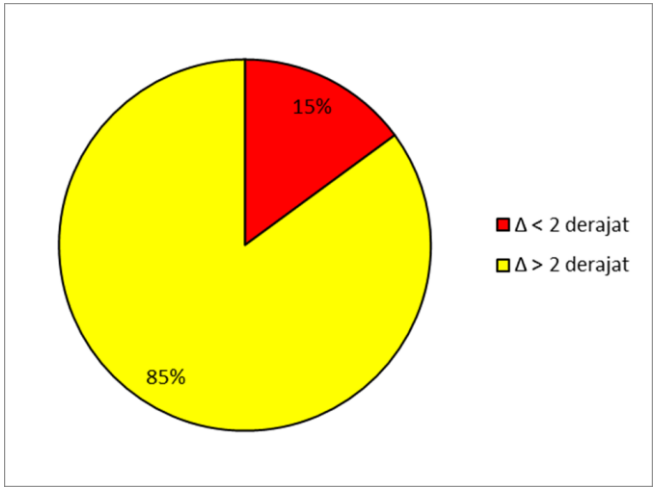
Tabel 3. Rekapitulasi Gempabumi dan Tsunami Berdasarkan Jarak Dari Stasiun

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/01/2016	1	6	7	
02/01/2016	2	1	3	
03/01/2016	0	5	5	
04/01/2016	0	3	3	
05/01/2016	0	6	6	
06/01/2016	2	3	5	
07/01/2016	0	6	6	
08/01/2016	1	8	9	
09/01/2016	1	2	3	
10/01/2016	0	6	6	
11/01/2016	1	17	18	
12/01/2016	1	6	7	
13/01/2016	0	10	10	
14/01/2016	0	7	7	
15/01/2016	2	6	8	
16/01/2016	2	0	2	
17/01/2016	1	5	6	
18/01/2016	3	12	15	
19/01/2016	1	6	7	
20/01/2016	2	1	3	
21/01/2016	0	5	5	
22/01/2016	1	3	4	
23/01/2016	1	5	6	
24/01/2016	1	6	7	
25/01/2016	0	3	3	
26/01/2016	0	3	3	
27/01/2016	1	1	2	
28/01/2016	1	4	5	
29/01/2016	1	3	4	
30/01/2016	1	4	5	
31/01/2016	0	1	1	
Jumlah gempa	27	154	181	
Jumlah gempa seluruhnya				

Histogram 2. Gempabumi Berdasarkan Jarak
Bulan Januari 2016



Persentase 4. Gempabumi Berdasarkan Jarak
Bulan Januari 2016



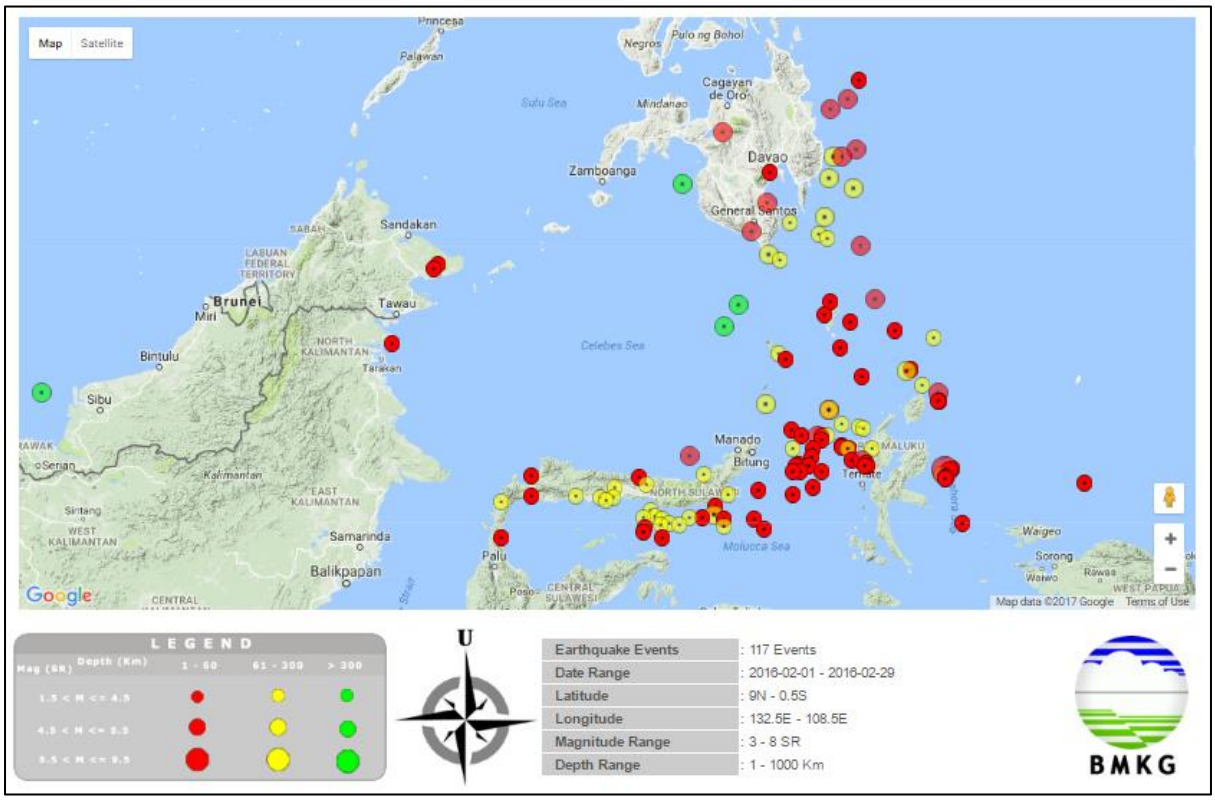
DATA GEMPABUMI BULAN PEBRUARI 2016

NO	TANGGAL	WAKTU (UTC)	EPISENTER		KEDALAMAN (KM)	MAG (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/02/2016	02:52:51	0.98	126.29	54	4				Northern Molucca Sea
2	01/02/2016	12:30:32	3.92	127.14	10	4.2				Talaud Islands, Indonesia
3	01/02/2016	16:10:50	1.35	126.38	40	4.1				Northern Molucca Sea
4	01/02/2016	18:54:31	3.6	128.84	61	4.3				North of Halmahera, Indonesia
5	02/02/2016	07:03:31	0.77	120.62	10	4.5				Minahassa Peninsula, Sulawesi
6	02/02/2016	08:44:26	0.76	122.82	43	4				Minahassa Peninsula, Sulawesi
7	02/02/2016	22:04:20	2.81	127.38	10	3.7				Northern Molucca Sea
8	03/02/2016	01:09:03	-0.35	122.93	10	3.1				Minahassa Peninsula, Sulawesi
9	03/02/2016	02:48:18	3.74	128.05	43	4.4				North of Halmahera, Indonesia
10	03/02/2016	16:05:12	6.31	125.45	41	4.9				Mindanao, Philippines
11	04/02/2016	03:39:27	0.72	120.6	10	2.4				Minahassa Peninsula, Sulawesi
12	04/02/2016	05:14:22	2.96	128.38	28	4.3				Halmahera, Indonesia
13	04/02/2016	05:35:22	0.83	122.72	45	2.6				Minahassa Peninsula, Sulawesi
14	04/02/2016	10:49:51	-0.03	124.35	64	4.7				Southern Molucca Sea
15	04/02/2016	16:13:07	1.56	126.48	20	4.9				Northern Molucca Sea
16	04/02/2016	19:33:16	0.64	131.91	10	4.2				Irian Jaya Region, Indonesia
17	05/02/2016	07:03:55	0.87	125.97	10	3.7				Northern Molucca Sea
18	05/02/2016	11:59:04	0.44	121.69	175	2				Minahassa Peninsula, Sulawesi
19	05/02/2016	13:42:54	0.39	122.45	24	2.1				Minahassa Peninsula, Sulawesi
20	05/02/2016	15:35:30	0.08	123.06	181	4.2				Minahassa Peninsula, Sulawesi
21	05/02/2016	16:12:37	1.84	126.95	91	3.3				Northern Molucca Sea
22	07/02/2016	11:19:21	-0.07	124.12	54	3.2				Southern Molucca Sea
23	07/02/2016	18:15:57	-0.06	122.91	158	3				Minahassa Peninsula, Sulawesi
24	07/02/2016	18:31:19	1.79	127.32	113	3.4				Halmahera, Indonesia
25	08/02/2016	04:12:06	-0.17	123.45	99	4				Minahassa Peninsula, Sulawesi
26	08/02/2016	15:25:15	6	126.61	93	4.9				Mindanao, Philippines
27	08/02/2016	23:20:48	2.44	110.64	425	4.2				South China Sea
28	09/02/2016	01:14:11	4.06	126.61	21	4				Talaud Islands, Indonesia; Pusat gempa berada di laut 14 km baratdaya Talaud,SULUT; Dirasakan Melonguane-Talaud (3 MMI).
29	09/02/2016	07:44:27	-0.1	124.55	35	4				Southern Molucca Sea
30	09/02/2016	08:14:21	1.15	123.87	20	4.9				Minahassa Peninsula, Sulawesi
31	09/02/2016	10:49:19	3.16	125.82	10	3.7				Talaud Islands, Indonesia
32	09/02/2016	18:34:09	0.55	122.34	76	3.6				Minahassa Peninsula, Sulawesi
33	10/02/2016	23:10:18	0.28	122.16	155	3.9				Minahassa Peninsula, Sulawesi
34	11/02/2016	05:25:31	8.2	126.74	10	4.6				Mindanao, Philippines
35	11/02/2016	16:24:42	-0.47	123.29	10	3.9				Minahassa Peninsula, Sulawesi
36	11/02/2016	21:20:21	8.38	127.07	29	4.7				Philippine Islands Region
37	12/02/2016	02:54:30	0.6	122.98	294	3.8				Minahassa Peninsula, Sulawesi
38	12/02/2016	12:50:18	0.29	122.15	155	2.3				Minahassa Peninsula, Sulawesi
39	12/02/2016	19:07:20	0.52	126.63	24	2.9				Northern Molucca Sea
40	13/02/2016	00:59:22	6.69	123.72	579	4.5				Mindanao, Philippines
41	13/02/2016	03:31:29	3.38	126.93	10	4.2				Talaud Islands, Indonesia
42	13/02/2016	03:37:39	0.13	121.8	154	2.3				Minahassa Peninsula, Sulawesi
43	13/02/2016	11:01:09	6.94	125.49	10	4.4				Mindanao, Philippines
44	13/02/2016	19:59:18	5.61	126.67	87	4.4				Mindanao, Philippines
45	13/02/2016	22:58:03	-0.09	125.17	10	3.3				Southern Molucca Sea
46	14/02/2016	04:20:16	-0.2	123.65	94	3.5				Minahassa Peninsula, Sulawesi
47	14/02/2016	09:44:32	-0.21	123.01	68	2.9				Minahassa Peninsula, Sulawesi
48	14/02/2016	14:12:35	-0.3	125.38	10	3.5				Southern Molucca Sea
49	14/02/2016	17:01:41	8.81	127.32	16	4.5				Philippine Islands Region
50	15/02/2016	14:49:06	5	118.65	10	3.4				Borneo
51	15/02/2016	15:14:28	5.72	125.12	10	4.6				Mindanao, Philippines
52	15/02/2016	15:27:27	0.56	126.38	10	3.2				Northern Molucca Sea
53	15/02/2016	17:26:21	-0.16	122.8	10	2.4				Minahassa Peninsula, Sulawesi
54	15/02/2016	18:28:02	0.88	126.12	12	3.1				Northern Molucca Sea
55	15/02/2016	20:07:13	5.92	125.92	65	4.5				Mindanao, Philippines
56	16/02/2016	02:36:56	5.09	118.74	24	4				Borneo
57	16/02/2016	02:48:51	0.4	122.02	98	2.6				Minahassa Peninsula, Sulawesi
58	16/02/2016	04:59:03	2.63	128.6	230	4.5				Halmahera, Indonesia
59	16/02/2016	05:14:56	2.22	125.42	132	4.7				Talaud Islands, Indonesia
60	16/02/2016	16:27:54	0.16	124.39	11	3.2				Minahassa Peninsula, Sulawesi

61	17/02/2016	07:26:35	1.02	126.07	43	3.9				Northern Molucca Sea
62	17/02/2016	07:32:13	4.34	127.64	10	4.8				Talaud Islands, Indonesia
63	17/02/2016	08:20:33	0.99	126.03	10	3.8				Northern Molucca Sea
64	17/02/2016	13:28:35	1.33	127.59	167	3.9				Halmahera, Indonesia
65	17/02/2016	15:48:10	7.38	127.27	22	5				Philippine Islands Region
66	17/02/2016	15:48:15	7.23	126.97	15	4.9				Mindanao, Philippines
67	17/02/2016	17:26:03	0.79	129.07	10	6.1				Halmahera, Indonesia PGN = Info Gempa Mag:5.9 SR, 18-Feb-16 00:26:03 WIB, Lok:0.91 LU,129.04 BT (76 km Tenggara HALMAHERATIMUR-MALUT), Kedlmn:10 Km ::BMKG
68	17/02/2016	17:47:28	0.99	127.5	10	3.9				Halmahera, Indonesia
69	17/02/2016	18:01:48	0.74	129.07	10	4				Halmahera, Indonesia
70	17/02/2016	21:34:44	0.73	129.06	10	4.1				Halmahera, Indonesia
71	17/02/2016	23:35:12	-0.22	123.26	119	3.2				Minahassa Peninsula, Sulawesi
72	18/02/2016	00:04:29	0.74	129.1	10	3.9				Halmahera, Indonesia
73	18/02/2016	00:29:34	-0.24	124.57	70	3.6				Southern Molucca Sea
74	18/02/2016	01:10:35	0.89	129.13	10	4.1				Halmahera, Indonesia
75	18/02/2016	11:35:47	3.49	117.79	10	3.4				Borneo
76	18/02/2016	11:46:06	1.12	127.16	10	3.5				Halmahera, Indonesia
77	18/02/2016	12:38:21	5.71	126.5	110	4.5				Mindanao, Philippines
78	18/02/2016	16:38:55	6.58	127.2	65	4.8				Philippine Islands Region
79	19/02/2016	01:12:31	-0.12	122.65	10	2.7				Minahassa Peninsula, Sulawesi
80	19/02/2016	03:12:17	2.31	128.91	31	4.1				Halmahera, Indonesia; Pusat gempa berada di 53 km Timurlaut Pulau Morotai-MALUT;Dirasakan di Morotai 3 MMI
81	19/02/2016	04:05:34	-0.09	123.3	130	3.5				Minahassa Peninsula, Sulawesi
82	19/02/2016	10:52:51	2.46	128.94	36	4.8				Halmahera, Indonesia
83	19/02/2016	12:03:53	2.32	128.95	10	4				Halmahera, Indonesia
84	19/02/2016	15:09:27	1.53	126.56	30	3.5				Northern Molucca Sea
85	19/02/2016	16:07:38	0.4	121.77	106	2.2				Minahassa Peninsula, Sulawesi
86	19/02/2016	16:26:24	-0.48	120.02	10	3				Minahassa Peninsula, Sulawesi
87	19/02/2016	20:27:50	0.8	124.16	200	3.2				Minahassa Peninsula, Sulawesi
88	19/02/2016	23:00:44	5.44	127.34	41	4.6				Philippine Islands Region
89	20/02/2016	19:01:24	0.93	129.22	10	3.8				Halmahera, Indonesia
90	21/02/2016	02:29:07	6.8	126.69	66	4.6				Mindanao, Philippines
91	21/02/2016	15:37:27	0.81	128.97	139	3.6				Halmahera, Indonesia
92	21/02/2016	23:33:42	5.18	125.71	192	4.4				Mindanao, Philippines
93	22/02/2016	13:29:41	0.88	126.56	12	3.5				Northern Molucca Sea
94	22/02/2016	17:52:06	0.5	125.27	23	4.3				Northern Molucca Sea
95	23/02/2016	03:56:59	0.26	120.02	77	3.4				Minahassa Peninsula, Sulawesi
96	23/02/2016	09:23:07	0.37	121.55	114	3.3				Minahassa Peninsula, Sulawesi
97	23/02/2016	18:35:22	-0.3	123.28	10	2.6				Minahassa Peninsula, Sulawesi
98	23/02/2016	19:39:26	-0.08	123.86	81	4.3				Minahassa Peninsula, Sulawesi
99	23/02/2016	20:47:36	1.07	127.39	11	5.1				Halmahera, Indonesia PGN = Info Gempa Mag:5.1 SR, 24-Feb-16 03:47:36 WIB, Lok:1.03 LU,127.38 BT (26 km TimurLaut TERNATE-MALUT), Kedlmn:10 Km ::BMKG
100	23/02/2016	21:01:13	1.05	127.46	16	4.3				Halmahera, Indonesia
101	23/02/2016	21:14:24	0.99	127.34	10	2.7				Halmahera, Indonesia
102	23/02/2016	21:31:19	4.31	126.73	10	3.8				Talaud Islands, Indonesia
103	23/02/2016	21:58:34	1.59	126.14	27	3.8				Northern Molucca Sea
104	24/02/2016	06:36:37	0.99	127.43	10	3.5				Halmahera, Indonesia; Pusat gempa berada di laut 40 km Baratlaut Tidore-Kep.Maluku Utara; Dirasakan di Jailolo 4 MMI.
105	24/02/2016	16:30:20	3.28	125.67	156	3.9				Talaud Islands, Indonesia
106	25/02/2016	12:53:06	-0.04	123.14	129	3.2				Minahassa Peninsula, Sulawesi
107	25/02/2016	17:57:47	1.59	126.67	104	3.6				Northern Molucca Sea
108	26/02/2016	00:55:31	1.39	126.97	55	4.3				Northern Molucca Sea
109	26/02/2016	06:08:16	0.39	125.98	25	3.8				Northern Molucca Sea
110	26/02/2016	06:15:33	1.59	126.54	17	3.3				Northern Molucca Sea
111	26/02/2016	07:16:17	1.71	125.94	55	3.9				Northern Molucca Sea
112	26/02/2016	12:27:10	1.74	127.39	116	4.4				Halmahera, Indonesia
113	26/02/2016	19:51:02	7.24	126.78	74	4.7				Mindanao, Philippines

114	27/02/2016	03:31:05	3.79	124.56	312	4.7				Celebes Sea
115	27/02/2016	12:57:25	1.34	125.96	101	3.5				Northern Molucca Sea
116	27/02/2016	14:43:07	7.72	124.52	10	4.8				Mindanao, Philippines
117	27/02/2016	16:44:57	0.9	121.65	27	2.2				Minahassa Peninsula, Sulawesi
118	27/02/2016	18:11:36	-0.17	123.26	134	2.6				Minahassa Peninsula, Sulawesi
119	27/02/2016	18:16:46	1.34	127.11	17	3.6				Halmahera, Indonesia
120	27/02/2016	22:09:27	0.37	120.62	39	4.3				Minahassa Peninsula, Sulawesi
121	28/02/2016	03:24:24	2.89	128.27	189	4.8				Halmahera, Indonesia
122	28/02/2016	09:06:26	5.26	125.47	180	5.5				Mindanao, Philippines PGN = Info Gempa Mag:5.4 SR, 28-Feb-16 16:06:26 WIB, Lok:5.17 LU,125.55 BT (172 km TimurLaut KEP-SANGIHE-SULUT), Kedlmn:171 Km ::BMKG
123	28/02/2016	12:58:29	0.71	122.2	54	2.5				Minahassa Peninsula, Sulawesi
124	28/02/2016	14:53:14	1.36	126.95	47	3.4				Northern Molucca Sea
125	28/02/2016	15:06:55	1.17	126.34	21	3.5				Northern Molucca Sea
126	28/02/2016	16:27:39	0.86	126.34	23	2.8				Northern Molucca Sea
127	28/02/2016	17:38:44	1.34	127.09	103	4				Halmahera, Indonesia
128	29/02/2016	02:54:49	-0.17	129.43	12	4				Halmahera, Indonesia
129	29/02/2016	06:42:52	-0.27	122.94	54	3.2				Minahassa Peninsula, Sulawesi
130	29/02/2016	07:10:47	2.09	126.71	46	4.8				Northern Molucca Sea
131	29/02/2016	10:40:34	2.09	126.7	62	4.8				Northern Molucca Sea
132	29/02/2016	11:53:29	0.36	122.02	162	3.5				Minahassa Peninsula, Sulawesi
133	29/02/2016	12:29:55	4.15	124.82	306	4.5				Celebes Sea
134	29/02/2016	16:55:34	0.57	121.27	59	2.1				Minahassa Peninsula, Sulawesi
135	29/02/2016	17:22:12	0.37	124.68	117	4.3				Minahassa Peninsula, Sulawesi
136	29/02/2016	19:51:19	0.34	122.32	143	4.1				Minahassa Peninsula, Sulawesi
137	29/02/2016	20:59:47	0.35	121.99	180	2				Minahassa Peninsula, Sulawesi
138	29/02/2016	21:39:57	0.33	121.93	171	2.5				Minahassa Peninsula, Sulawesi

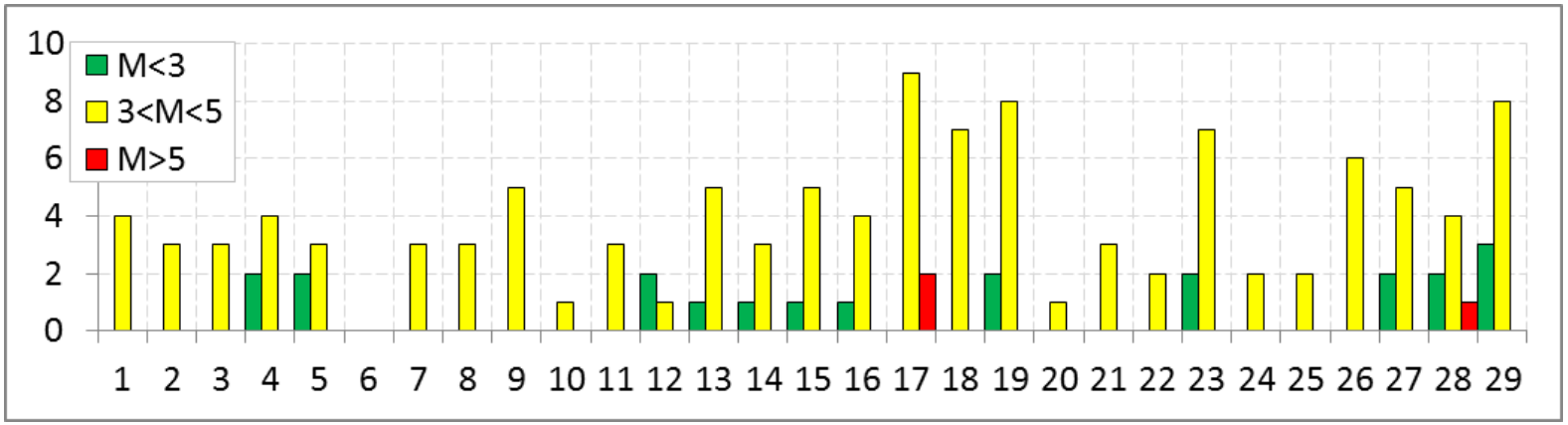
Peta 3. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Pebruari 2016



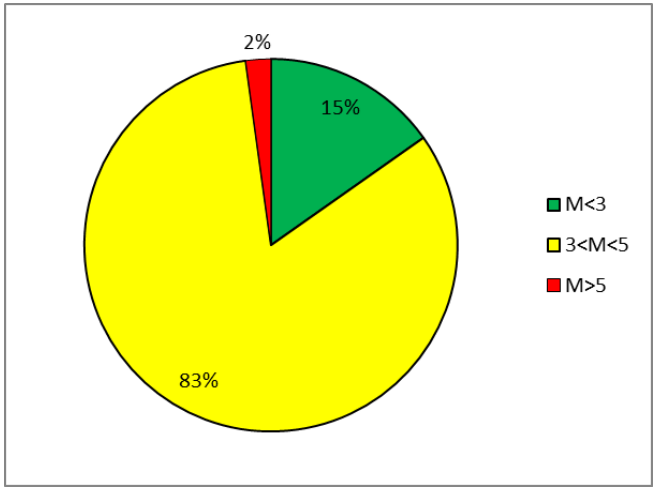
Tabel 4. Rekapitulasi Gempabumi dan Tsunami Berdasarkan Magnitudo
Bulan Pebruari 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah gempa signifikan	
	M<3	3<M<5	M>5		Dirasakan	Merusak
1	0	4	0	4	0	0
2	0	3	0	3	0	0
3	0	3	0	3	0	0
4	2	4	0	6	0	0
5	2	3	0	5	0	0
6	0	0	0	0	0	0
7	0	3	0	3	0	0
8	0	3	0	3	0	0
9	0	5	0	5	1	0
10	0	1	0	1	0	0
11	0	3	0	3	0	0
12	2	1	0	3	0	0
13	1	5	0	6	0	0
14	1	3	0	4	0	0
15	1	5	0	6	0	0
16	1	4	0	5	0	0
17	0	9	2	11	0	0
18	0	7	0	7	1	0
19	2	8	0	10	1	0
20	0	1	0	1	0	0
21	0	3	0	3	0	0
22	0	2	0	2	0	0
23	2	7	0	9	0	0
24	0	2	0	2	1	0
25	0	2	0	2	0	0
26	0	6	0	6	0	0
27	2	5	0	7	0	0
28	2	4	1	7	0	0
29	3	8	0	11	0	0
Jumlah gempa	21	114	3	138	4	0
31	1	0	0	1	0	0
Jumlah gempa	3	164	14	181	5	0

Histogram 3.Gempabumi Berdasarkan Magnitudo
Bulan Pebruari 2016



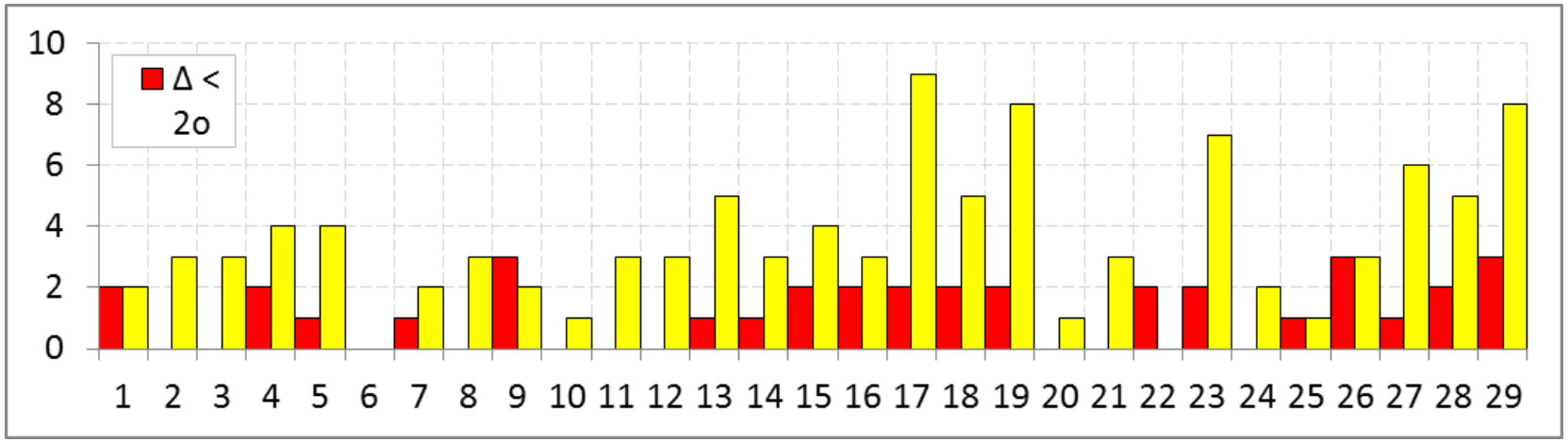
Persentase 5. Gempabumi Berdasarkan Magnitudo
Bulan Pebruari 2016



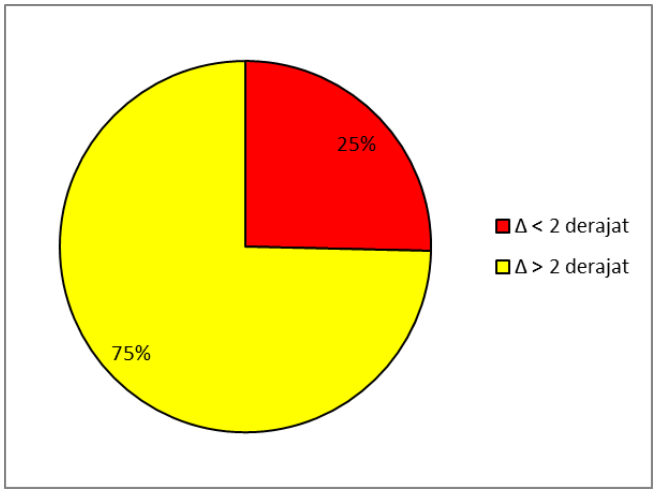
Tabel 5. Rekapitulasi Gempabumi dan Tsunami Berdasarkan Jarak Dari Stasiun Bulan Pebruari 2016

Tanggal	Jarak		Jumlah	Keterangan
	Δ < 2°	Δ > 2°		
01/02/2016	2	2	4	
02/02/2016	0	3	3	
03/02/2016	0	3	3	
04/02/2016	2	4	6	
05/02/2016	1	4	5	
06/02/2016	0	0	0	
07/02/2016	1	2	3	
08/02/2016	0	3	3	
09/02/2016	3	2	5	
10/02/2016	0	1	1	
11/02/2016	0	3	3	
12/02/2016	0	3	3	
13/02/2016	1	5	6	
14/02/2016	1	3	4	
15/02/2016	2	4	6	
16/02/2016	2	3	5	
17/02/2016	2	9	11	
18/02/2016	2	5	7	
19/02/2016	2	8	10	
20/02/2016	0	1	1	
21/02/2016	0	3	3	
22/02/2016	2	0	2	
23/02/2016	2	7	9	
24/02/2016	0	2	2	
25/02/2016	1	1	2	
26/02/2016	3	3	6	
27/02/2016	1	6	7	
28/02/2016	2	5	7	
29/02/2016	3	8	11	
Jumlah gempa	35	103	138	

Histogram 4. Gempabumi Berdasarkan Jarak
Bulan Pebruari 2016



Persentase 6. Gempabumi Berdasarkan Jarak
Bulan Pebruari 2016



Data Gempabumi Bulan Maret 2016

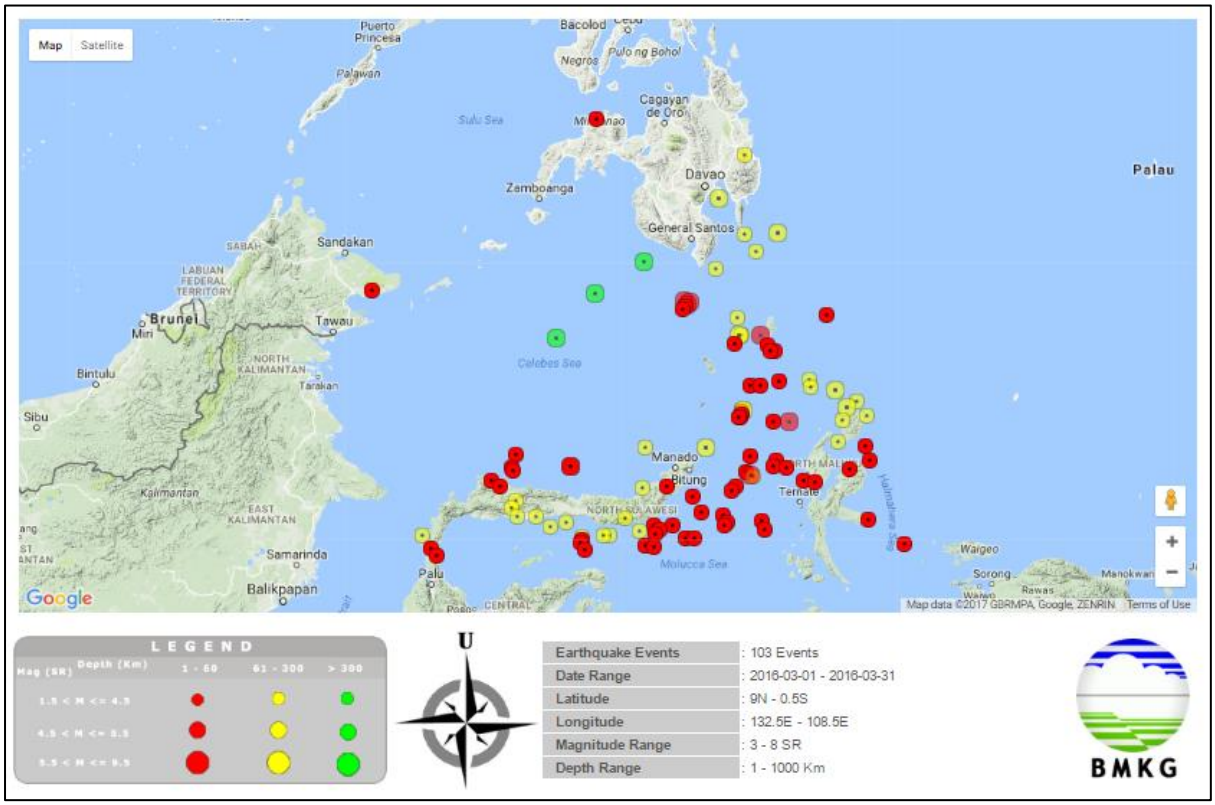
NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (KM)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/03/2016	01:25:05	0.73	125.19	54	3	-	-	-	Northern Molucca Sea
2	01/03/2016	01:41:04	3.82	126.04	50	4	-	-	-	Talaud Islands, Indonesia
3	01/03/2016	08:48:15	-0.13	125.24	12	4.3	-	-	-	Southern Molucca Sea
4	01/03/2016	10:57:55	3.8	126.74	42	3.9	-	-	-	Talaud Islands, Indonesia
5	01/03/2016	13:05:14	-0.05	124.44	26	3.4	-	-	-	Southern Molucca Sea
6	02/03/2016	04:29:56	0.24	126.61	13	3.1	-	-	-	Northern Molucca Sea
7	02/03/2016	07:45:09	-0.36	123.02	44	3.6	-	-	-	Minahassa Peninsula, Sulawesi
8	03/03/2016	16:23:08	3.96	126.15	112	4.8	0.1954	0.2751	0.2784	Talaud Islands, Indonesia; Pusat gempa berada di laut 65 km BaratDaya Kep. Talaud , Sulawesi Utara; dirasakan di Sangihe dan Tatoareng (2 MMI) PGN = Info Gempa Mag:5.0 SR, 03-Mar-16 23:23:10 WIB, Lok:3.88 LU,126.15 BT (65 km BaratDaya KEP-TALAUD-SULUT), Kedlmn:93 Km ::BMKG
9	03/03/2016	19:28:30	0.34	125.81	20	3	-	-	-	Northern Molucca Sea
10	04/03/2016	00:43:33	4.91	118.67	18	4.1	-	-	-	Borneo
11	04/03/2016	02:00:47	1.58	121.6	10	3	-	-	-	Minahassa Peninsula, Sulawesi
12	04/03/2016	03:59:41	3.96	126.58	20	4.9	-	-	-	Talaud Islands, Indonesia
13	04/03/2016	06:27:49	1.3	127.1	29	4.3	-	-	-	-
14	04/03/2016	12:12:40	3.1	127.59	64	4.2	-	-	-	Halmahera, Indonesia; Pusat gempa berada di laut 51 km BaratDaya HALMAHERABARAT, Maluku Utara; dirasakan di Ternate (2 MMI)
15	04/03/2016	19:30:08	-0.23	122.76	17	2.4	-	-	-	Minahassa Peninsula, Sulawesi
16	06/03/2016	14:16:58	0.7	121.36	58	2.1	-	-	-	Minahassa Peninsula, Sulawesi
17	06/03/2016	14:41:55	-0.1	122.87	113	2.3	-	-	-	Minahassa Peninsula, Sulawesi
18	06/03/2016	15:47:31	1.45	128.8	10	3.2	-	-	-	Halmahera, Indonesia
19	06/03/2016	16:21:01	0.19	125.9	10	3.1	-	-	-	Northern Molucca Sea
20	06/03/2016	16:32:54	-0.11	122.87	126	2.3	-	-	-	Minahassa Peninsula, Sulawesi
21	06/03/2016	17:14:04	-0.17	122.72	10	1.8	-	-	-	Minahassa Peninsula, Sulawesi
22	06/03/2016	17:16:16	0.18	123.66	150	2.8	-	-	-	Minahassa Peninsula, Sulawesi
23	06/03/2016	22:38:41	1.63	120.88	29	2.7	-	-	-	Minahassa Peninsula, Sulawesi
24	07/03/2016	03:11:47	1.35	122.16	12	2.7	-	-	-	Minahassa Peninsula, Sulawesi
25	07/03/2016	04:20:28	1.1	121.74	21	2.2	-	-	-	Minahassa Peninsula, Sulawesi
26	07/03/2016	05:20:11	0.3	121.84	160	2.5	-	-	-	Minahassa Peninsula, Sulawesi
27	07/03/2016	11:43:41	2.49	128.33	122	4.9	-	-	-	Halmahera, Indonesia PGN = Info Gempa Mag:5.2 SR, 07-Mar-16 18:43:42 WIB, Lok:2.36 LU,128.19 BT (23 km BaratDaya PULAUMOROTAI-MALUT), Kedlmn:104 Km ::BMKG

28	07/03/2016	20:24:21	-0.11	125.05	29	3.1	0.1676	0.3924	0.1961	Southern Molucca Sea
29	08/03/2016	19:42:32	6.75	125.74	167	4.9	-	-	-	Mindanao, Philippines
30	09/03/2016	00:54:08	3.92	122.42	574	4.3	-	-	-	Celebes Sea
31	09/03/2016	03:33:29	0.1	122.29	171	3.1	-	-	-	Minahassa Peninsula, Sulawesi
32	09/03/2016	09:51:33	-0.08	123.49	120	3.5	-	-	-	Minahassa Peninsula, Sulawesi
33	09/03/2016	12:54:13	0.53	121.36	60	2.4	-	-	-	Minahassa Peninsula, Sulawesi
34	09/03/2016	15:07:24	-0.09	123.25	143	2.8	-	-	-	Minahassa Peninsula, Sulawesi
35	10/03/2016	02:31:26	1.33	126.85	13	4	-	-	-	Northern Molucca Sea
36	10/03/2016	06:07:09	1.28	128.39	13	3.9	-	-	-	Halmahera, Indonesia
37	10/03/2016	17:42:36	1.85	128.16	125	3.4	-	-	-	Halmahera, Indonesia
38	11/03/2016	14:46:31	-0.29	122.97	16	2.3	-	-	-	Minahassa Peninsula, Sulawesi
39	11/03/2016	21:52:48	4.35	126.1	135	4.1	-	-	-	Talaud Islands, Indonesia
40	12/03/2016	04:51:08	0.05	124.52	22	3.3	-	-	-	Minahassa Peninsula, Sulawesi
41	12/03/2016	09:06:34	-0.04	123.02	84	2.7	-	-	-	Minahassa Peninsula, Sulawesi
42	12/03/2016	09:14:59	0.39	125.39	19	3.2	-	-	-	Northern Molucca Sea
43	13/03/2016	07:56:52	0.32	122.01	148	3.3	-	-	-	Minahassa Peninsula, Sulawesi
44	13/03/2016	15:20:22	1.13	126.37	50	4.8	-1.1810	1.0212	1.7661	Northern Molucca Sea; Pusat gempa berada di Laut 120 km Barat Laut Ternate, Maluku Utara; dirasakan di Ternate (3 MMI)
45	13/03/2016	16:26:07	0.37	126.77	35	2.9	-	-	-	Northern Molucca Sea
46	13/03/2016	18:07:56	-0.04	123.22	144	2.9	-	-	-	Minahassa Peninsula, Sulawesi
47	13/03/2016	18:35:00	-0.31	124.41	13	3	-	-	-	Southern Molucca Sea
48	13/03/2016	19:01:43	0.32	121.63	167	3.6	-	-	-	Minahassa Peninsula, Sulawesi
49	13/03/2016	20:30:16	1.3	122.73	13	4.7	-	-	-	Minahassa Peninsula, Sulawesi
50	13/03/2016	20:53:01	0.25	128.79	10	3.9	-	-	-	Halmahera, Indonesia; Pusat gempa berada di laut 63 km Tenggara Halmahera Tengah, Maluku Utara; dirasakan di Patani (3 MMI)
51	13/03/2016	21:44:24	3.08	126.95	46	4.2	-	-	-	Talaud Islands, Indonesia
52	14/03/2016	07:40:45	-0.21	122.92	17	3	-	-	-	Minahassa Peninsula, Sulawesi
53	14/03/2016	09:36:57	0.15	125.84	10	3.7	-	-	-	Northern Molucca Sea
54	14/03/2016	11:36:39	0.49	121.51	85	4.3	-	-	-	Minahassa Peninsula, Sulawesi
55	14/03/2016	16:18:35	1.38	127.34	108	2.7	-	-	-	Halmahera, Indonesia
56	14/03/2016	16:31:36	1.55	126.39	10	3.2	-	-	-	Northern Molucca Sea
57	14/03/2016	17:02:33	2.27	128.25	129	4.3	-	-	-	Halmahera, Indonesia
58	15/03/2016	08:34:18	7.64	126.26	149	4.5	-	-	-	Mindanao, Philippines
59	15/03/2016	16:37:30	0.13	124.41	55	3.5	-	-	-	Minahassa Peninsula, Sulawesi
60	15/03/2016	22:52:07	-0.08	123.38	142	4.4	-	-	-	Minahassa Peninsula, Sulawesi
61	16/03/2016	06:33:13	1.75	128.73	10	4	-	-	-	Halmahera, Indonesia
62	16/03/2016	12:04:57	4.65	125.15	31	5.2	-	-	-	Talaud Islands, Indonesia PGN = Info Gempa Mag:5.1 SR, 16-Mar-16 19:04:55 WIB, Lok:4.62 LU,125.08 BT (119 km BaratLaut KEP-SANGIHE-SULUT), Kedlmn:20 Km ::BMKG
63	16/03/2016	12:15:39	4.41	127.92	10	4.4	-	-	-	Talaud Islands, Indonesia
64	16/03/2016	13:09:54	4.59	125.1	14	5.5	-	-	-	Talaud Islands, Indonesia PGN = Info Gempa Mag:5.5 SR, 16-Mar-16 20:09:55 WIB, Lok:4.48

										LU,124.97 BT (111 km BaratLaut KEP-SANGIHE-SULUT), Kedlmn:13 Km ::BMKG
65	16/03/2016	13:16:30	4.68	125.03	10	4.9	-	-	-	Talaud Islands, Indonesia
66	16/03/2016	13:36:17	4.54	124.99	10	4.2	-	-	-	Celebes Sea
67	16/03/2016	14:10:54	4.58	125.07	10	4.5	-	-	-	Talaud Islands, Indonesia
68	16/03/2016	14:25:44	-0.09	122.96	130	3	-	-	-	Minahassa Peninsula, Sulawesi
69	16/03/2016	17:32:23	2.22	127.16	40	4.8	-	-	-	Northern Molucca Sea
70	18/03/2016	01:10:53	0.21	122.62	129	3	-	-	-	Minahassa Peninsula, Sulawesi
71	18/03/2016	09:53:54	6.05	126.25	153	4.4	-	-	-	Mindanao, Philippines
72	18/03/2016	11:39:34	1.09	120.56	10	2.2	-	-	-	Minahassa Peninsula, Sulawesi
73	19/03/2016	04:48:36	1.21	126.3	10	3.8	-	-	-	Northern Molucca Sea
74	19/03/2016	05:13:12	1.72	124.23	295	3.8	-	-	-	Minahassa Peninsula, Sulawesi
75	19/03/2016	11:29:34	-0.24	129.5	10	3.6	-	-	-	Halmahera, Indonesia
76	19/03/2016	19:32:48	0.13	124.8	10	3.2	-	-	-	Minahassa Peninsula, Sulawesi
77	20/03/2016	02:23:25	3.69	126.87	17	4.3	-	-	-	Talaud Islands, Indonesia
78	20/03/2016	04:18:02	0.63	121.61	71	4.1	-	-	-	Minahassa Peninsula, Sulawesi
79	20/03/2016	21:47:14	5.34	125.66	181	4.3	-	-	-	Mindanao, Philippines
80	21/03/2016	00:34:48	1.29	122.71	10	4.9	-	-	-	Minahassa Peninsula, Sulawesi; Pusat gempa berada di laut 50 km Timurlaut Gorontalo Utara, SULAWESI UTARA; dirasakan di Gorontalo (2 MMI)
81	21/03/2016	02:14:55	1.32	121.5	10	3.5	-	-	-	Minahassa Peninsula, Sulawesi
82	21/03/2016	02:14:56	1.25	121.55	10	3.5	-	-	-	Minahassa Peninsula, Sulawesi
83	21/03/2016	05:44:36	0.58	121.28	60	2.4	-	-	-	Minahassa Peninsula, Sulawesi
84	22/03/2016	11:37:42	0.92	124.67	10	3.1	-	-	-	Minahassa Peninsula, Sulawesi
85	22/03/2016	14:32:38	1.14	126.42	62	4.5	-	-	-	Northern Molucca Sea
86	22/03/2016	17:29:34	6.03	126.94	136	4.8	-	-	-	Mindanao, Philippines
87	22/03/2016	18:47:05	1.68	125.48	106	5	-	-	-	Northern Molucca Sea
88	22/03/2016	20:14:35	8.36	123.23	10	4.5	-	-	-	Mindanao, Philippines
89	23/03/2016	01:32:40	0.28	123.83	211	4.4	-	-	-	Minahassa Peninsula, Sulawesi
90	23/03/2016	04:42:50	-0.07	119.71	84	4.2	-	-	-	Minahassa Peninsula, Sulawesi
91	23/03/2016	10:49:46	-0.48	119.98	12	4.3	-	-	-	Minahassa Peninsula, Sulawesi; Pusat gempa berada di darat 19 km timur laut Donggala, Sulawesi Tengah; dirasakan di Palu (4 MMI)
92	23/03/2016	19:04:22	4.81	123.22	564	4.4	0.0175	0.0129	0.0230	Celebes Sea
93	24/03/2016	06:11:08	2.86	128.11	130	4.7	-	-	-	Halmahera, Indonesia
94	24/03/2016	17:26:15	2.96	127.61	93	3.7	-	-	-	Northern Molucca Sea
95	24/03/2016	18:20:48	1.02	127.7	19	3.4	-	-	-	Halmahera, Indonesia
96	24/03/2016	19:30:05	-0.14	122.81	74	2.3	-	-	-	Minahassa Peninsula, Sulawesi
97	25/03/2016	03:27:59	-0.16	122.95	50	4.4	-	-	-	Minahassa Peninsula, Sulawesi
98	25/03/2016	07:56:38	2.97	126.57	10	3.9	-	-	-	Northern Molucca Sea
99	26/03/2016	07:04:56	-0.08	123.09	147	2.9	-	-	-	Minahassa Peninsula, Sulawesi
100	26/03/2016	18:22:46	1.34	122.72	23	3.9	-	-	-	Minahassa Peninsula, Sulawesi
101	27/03/2016	12:48:07	0.05	126.67	16	4.2	-	-	-	Northern Molucca Sea
102	27/03/2016	17:06:26	5.7	126.49	133	4.5	-	-	-	Mindanao, Philippines
103	27/03/2016	19:08:00	0.94	121.29	10	3.4	0.0331	0.0287	0.0298	Minahassa Peninsula, Sulawesi

104	27/03/2016	23:41:29	0.89	124.19	202	3.7	-	-	-	Minahassa Peninsula, Sulawesi
105	28/03/2016	02:18:41	1.06	121.1	10	3.8	-	-	-	Minahassa Peninsula, Sulawesi
106	28/03/2016	13:44:48	-0.26	124.25	22	3.6	-	-	-	Southern Molucca Sea
107	28/03/2016	14:24:28	0.84	125.99	10	3.4	-	-	-	Northern Molucca Sea
108	28/03/2016	20:22:46	4.01	126.19	110	3.9	-	-	-	Talaud Islands, Indonesia
109	29/03/2016	08:18:34	5.46	124.21	470	4.8	-	-	-	Mindanao, Philippines
110	29/03/2016	09:18:13	2.44	126.22	79	5.2	1.3402	-1.270	1.1324	Northern Molucca Sea; Pusat gempa berada di Laut 85 km Tenggara SIAUTAGULANDANGBIARO, Sulawesi Utara; dirasakan di Talaud (3 MMI) PGN = Info Gempa Mag:5.4 SR, 29-Mar-16 16:18:11 WIB, Lok:2.31 LU,126.18 BT (85 km Tenggara SIAUTAGULANDANGBIARO-SULUT), Kedlmn:10 Km ::BMKG
111	29/03/2016	10:23:10	2.35	126.16	10	4	-	-	-	Northern Molucca Sea
112	29/03/2016	15:22:43	2.38	126.19	30	4.2	-	-	-	Northern Molucca Sea
113	29/03/2016	17:16:59	1.04	127.46	10	3.9	-	-	-	Halmahera, Indonesia
114	29/03/2016	21:43:01	2.33	126.14	12	4.3	-	-	-	Northern Molucca Sea
115	29/03/2016	23:45:38	2.44	126.19	33	3.9	-	-	-	Northern Molucca Sea
116	30/03/2016	05:32:18	0.22	122.6	95	2.7	-	-	-	Minahassa Peninsula, Sulawesi
117	30/03/2016	05:46:48	0.03	124.13	87	3.8	-	-	-	Minahassa Peninsula, Sulawesi
118	30/03/2016	10:42:35	2.26	126.84	26	3.5	-	-	-	Northern Molucca Sea
119	30/03/2016	10:56:40	-0.33	119.88	10	3.8	-	-	-	Minahassa Peninsula, Sulawesi
120	30/03/2016	18:12:53	-0.11	123.2	141	2.8	-	-	-	Minahassa Peninsula, Sulawesi
121	30/03/2016	18:34:21	2.99	126.38	22	3.4	-	-	-	Northern Molucca Sea
122	30/03/2016	19:11:36	1.46	126.9	30	3.4	-	-	-	Northern Molucca Sea
123	30/03/2016	23:26:12	3.69	126.8	25	3.8	0.4876	0.6082	0.4958	Talaud Islands, Indonesia
124	31/03/2016	05:06:36	0.93	126.08	10	3.6	-	-	-	Northern Molucca Sea
125	31/03/2016	19:25:43	2.66	128.55	219	4.5	-	-	-	Halmahera, Indonesia
126	31/03/2016	23:34:24	2.37	128.75	247	4.3	-	-	-	Halmahera, Indonesia

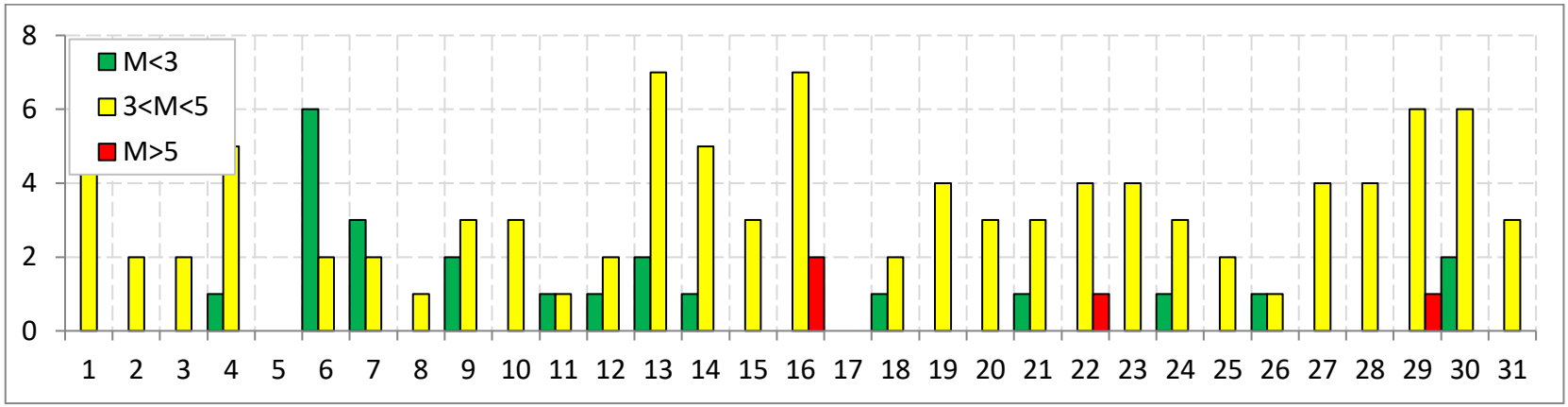
Peta 4. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Maret 2016



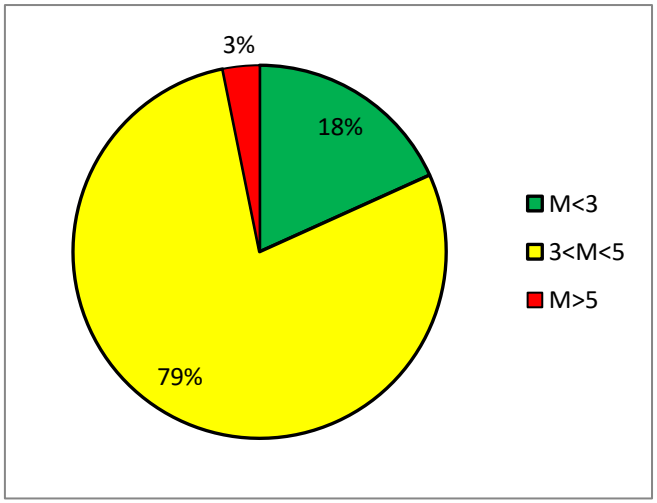
Tabel 6. Rekapitulasi Gempabumi Berdasarkan Magnitudo
Bulan Maret 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	0	5	0	5	0	0
2	0	2	0	2	0	0
3	0	2	0	2	1	0
4	1	5	0	6	1	0
5	0	0	0	0	0	0
6	6	2	0	8	0	0
7	3	2	0	5	0	0
8	0	1	0	1	0	0
9	2	3	0	5	0	0
10	0	3	0	3	0	0
11	1	1	0	2	0	0
12	1	2	0	3	0	0
13	2	7	0	9	2	0
14	1	5	0	6	0	0
15	0	3	0	3	0	0
16	0	7	2	9	0	0
17	0	0	0	0	0	0
18	1	2	0	3	0	0
19	0	4	0	4	0	0
20	0	3	0	3	0	0
21	1	3	0	4	1	0
22	0	4	1	5	0	0
23	0	4	0	4	1	0
24	1	3	0	4	0	0
25	0	2	0	2	0	0
26	1	1	0	2	0	0
27	0	4	0	4	0	0
28	0	4	0	4	0	0
29	0	6	1	7	1	0
30	2	6	0	8	0	0
31	0	3	0	3	0	0
Jumlah gempa	23	99	4	126	7	0
Jumlah gempa seluruhnya						

Histogram 5. Gempabumi Berdasarkan Magnitudo
Bulan Maret 2016



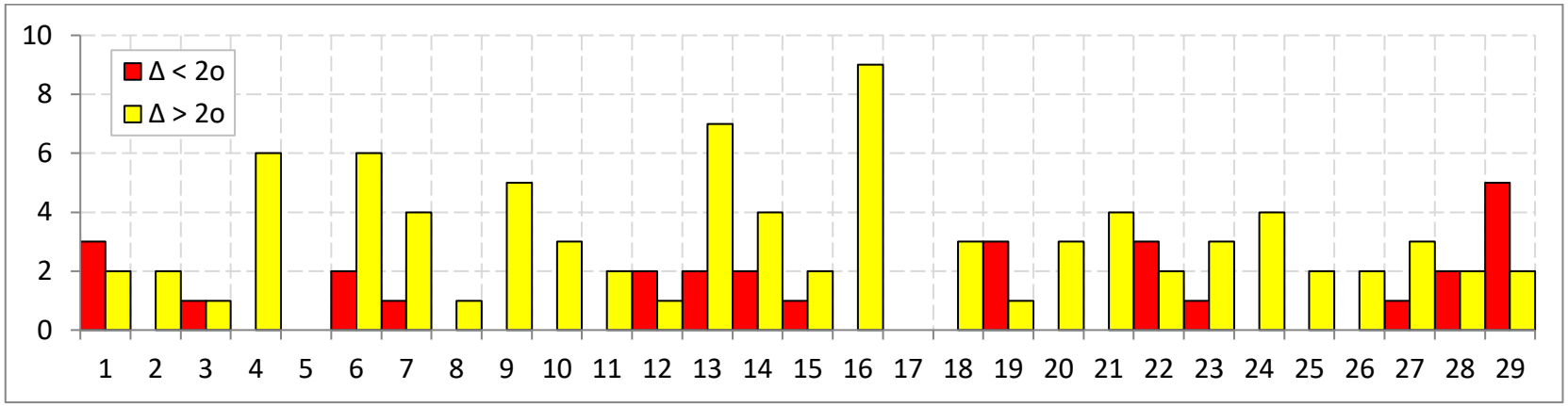
Persentase 7. Gempabumi Berdasarkan Magnitudo
Bulan Maret 2016



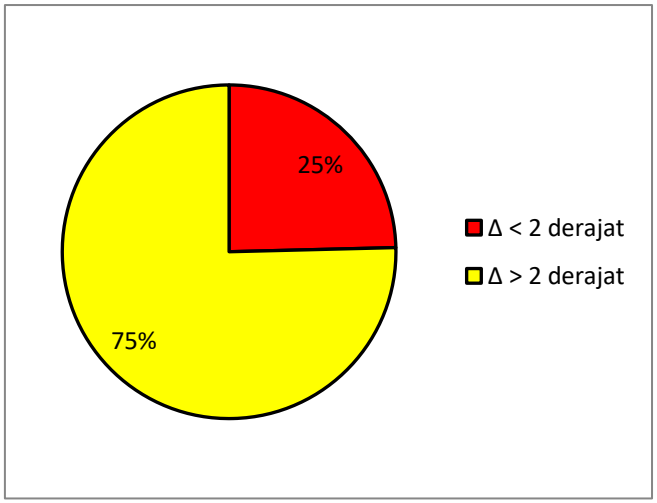
Tabel 7. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan Maret 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/03/2016	3	2	5	-
02/03/2016	0	2	2	-
03/03/2016	1	1	2	-
04/03/2016	0	6	6	-
05/03/2016	0	0	0	-
06/03/2016	2	6	8	-
07/03/2016	1	4	5	-
08/03/2016	0	1	1	-
09/03/2016	0	5	5	-
10/03/2016	0	3	3	-
11/03/2016	0	2	2	-
12/03/2016	2	1	3	-
13/03/2016	2	7	9	-
14/03/2016	2	4	6	-
15/03/2016	1	2	3	-
16/03/2016	0	9	9	-
17/03/2016	0	0	0	-
18/03/2016	0	3	3	-
19/03/2016	3	1	4	-
20/03/2016	0	3	3	-
21/03/2016	0	4	4	-
22/03/2016	3	2	5	-
23/03/2016	1	3	4	-
24/03/2016	0	4	4	-
25/03/2016	0	2	2	-
26/03/2016	0	2	2	-
27/03/2016	1	3	4	-
28/03/2016	2	2	4	-
29/03/2016	5	2	7	-
30/03/2016	1	7	8	-
31/03/2016	1	2	3	-
Jumlah gempa	31	95		
Jumlah gempa seluruhnya			126	-

Histogram 6. Gempabumi Berdasarkan Jarak
Bulan Maret 2016



Persentase 8. Gempabumi Berdasarkan Jarak
Bulan Maret 2016



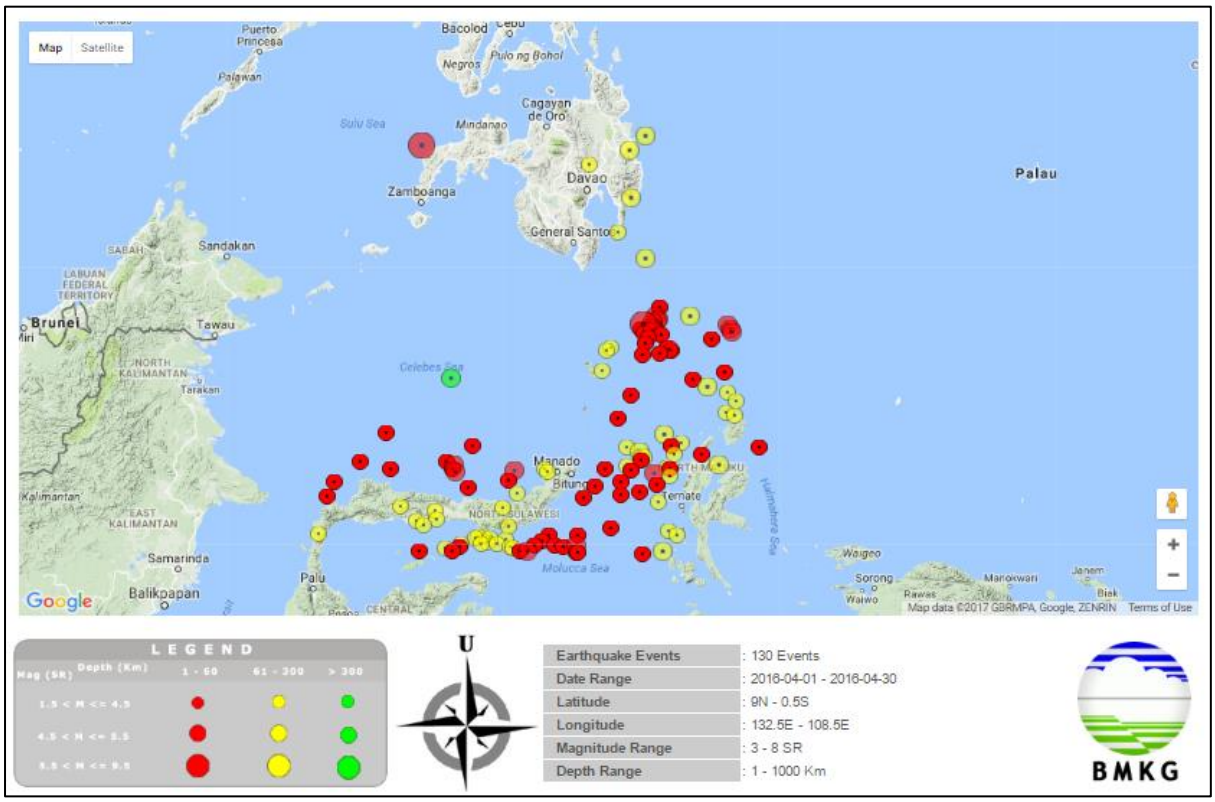
Data Gempabumi Bulan April 2016

NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (KM)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	04/01/2016	07:23:00	3.90	128.30	52	4.9	-	-	-	North of Halmahera, Indonesia PGN = Info Gempa Mag:5.0 SR, 01-Apr-16 14:23:43 WIB, Lok:4.49 LU,128.50 BT (204 km TimurLaut KEP-TALAUD-SULUT), Kedlmn:45 Km ::BMKG
2	04/01/2016	11:22:00	2.36	126.13	35	3.9	-	-	-	Northern Molucca Sea
3	04/01/2016	01:31:00	0.48	122.18	38	2.7	-	-	-	Minahassa Peninsula, Sulawesi
4	04/01/2016	06:56:00	2.87	127.63	222	3.6	-	-	-	Northern Molucca Sea
5	04/01/2016	08:42:00	4.28	128.54	10	4.8	-	-	-	North of Halmahera, Indonesia
6	04/01/2016	09:40:00	6.78	126.29	133	4.5	-	-	-	Mindanao, Philippines
7	04/02/2016	04:40:00	3.94	128.41	54	4.7	0.5492	0.4893	0.4406	North of Halmahera, Indonesia
8	04/02/2016	08:41:00	3.68	128.89	140	4.2	-	-	-	North of Halmahera, Indonesia
9	04/02/2016	11:06:00	-0.18	123.46	113	4.1	-	-	-	Minahassa Peninsula, Sulawesi
10	04/02/2016	01:24:00	2.99	127.64	10	4.4	-	-	-	Northern Molucca Sea
11	04/02/2016	02:17:00	-1.00	123.33	314	3.5	-	-	-	Sulawesi, Indonesia
12	04/02/2016	08:31:00	4.21	128.24	559	4.4	-	-	-	North of Halmahera, Indonesia
13	04/03/2016	10:55:00	1.39	127.14	19	4.1	0.0016	0.0013	0.0015	Halmahera, Indonesia
14	04/04/2016	11:13:00	1.30	123.98	10	4.9	0.4035	0.6904	0.6871	Minahassa Peninsula, Sulawesi
15	04/04/2016	08:22:00	2.03	122.86	449	3.7	-	-	-	Celebes Sea
16	04/05/2016	04:24:00	0.11	122.85	10	4.8	-	-	-	Minahassa Peninsula, Sulawesi
17	04/05/2016	05:52:00	3.19	128.16	147	4.8	-	-	-	North of Halmahera, Indonesia
18	04/05/2016	07:20:00	0.54	121.61	50	4.4	-	-	-	Minahassa Peninsula, Sulawesi
19	04/05/2016	08:42:00	4.31	126.74	10	4.9	3.6714	4.5571	5.2497	Talaud Islands, Indonesia PGN = Info Gempa Mag:5.0 SR, 05-Apr-16 15:27:59 WIB, Lok:4.42 LU,126.73 BT (41 km TimurLaut KEP-TALAUD-SULUT), Kedlmn:10 Km ::BMKG
20	04/05/2016	08:52:00	-0.54	126.77	21	5.4	-	-	-	Southern Molucca Sea PGN = Info Gempa Mag:5.1 SR, 05-Apr-16 15:52:35 WIB, Lok:0.42 LS,126.89 BT (135 km BaratDaya TIDORE-KEP-MALUT), Kedlmn:29 Km ::BMKG
21	04/05/2016	10:00:00	4.16	126.72	10	4.1	-	-	-	Talaud Islands, Indonesia
22	04/05/2016	10:10:00	0.28	121.25	10	3	-	-	-	Minahassa Peninsula, Sulawesi
23	04/05/2016	10:14:00	-2.36	122.58	10	4	-	-	-	Sulawesi, Indonesia
24	04/05/2016	11:00:00	4.14	126.57	10	4.8	-	-	-	Talaud Islands, Indonesia
25	04/05/2016	03:01:00	3.61	126.05	94	4.3	-	-	-	Talaud Islands, Indonesia
26	04/05/2016	08:00:00	4.95	127.66	20	4.1	-	-	-	Talaud Islands, Indonesia
27	04/05/2016	09:32:00	-0.28	121.95	10	4.1	-	-	-	Minahassa Peninsula, Sulawesi
28	04/05/2016	10:34:00	1.29	122.84	10	4.7	-	-	-	Minahassa Peninsula, Sulawesi
29	04/06/2016	01:29:00	4.79	127.14	52	4.6	-	-	-	Talaud Islands, Indonesia
30	04/06/2016	03:26:00	3.54	127.08	10	4.3	-	-	-	Talaud Islands, Indonesia
31	04/06/2016	08:32:00	1.05	126.88	39	4.1	-	-	-	Northern Molucca Sea
32	04/06/2016	11:00:00	7.87	126.16	148	4.7	-	-	-	Mindanao, Philippines
33	04/06/2016	03:23:00	3.74	125.91	120	4.2	-	-	-	Talaud Islands, Indonesia
34	04/06/2016	03:33:00	-0.50	121.99	5	3.3	-	-	-	Minahassa Peninsula, Sulawesi
35	04/06/2016	08:31:00	-0.88	126.06	126	3.9	-	-	-	Southern Molucca Sea
36	04/06/2016	10:13:00	3.79	126.66	10	3.9	-	-	-	Talaud Islands, Indonesia
37	04/06/2016	10:19:00	3.96	126.71	15	5	0.6572	0.8736	1.8613	Talaud Islands, Indonesia PGN = Info Gempa Mag:5.0 SR, 07-Apr-16 05:19:24 WIB, Lok:3.95 LU,126.71 BT (10 km BaratDaya KEP-TALAUD-SULUT), Kedlmn:11 Km ::BMKG
38	04/07/2016	04:09:00	1.40	122.77	10	5.2	1.5000	2.4897	2.6676	Minahassa Peninsula, Sulawesi PGN = Info Gempa Mag:5.1 SR, 07-Apr-16 11:09:22 WIB, Lok:1.24 LU,122.73 BT (43 km TimurLaut GORONTALOUTARA), Kedlmn:10 Km ::BMKG
39	04/07/2016	01:24:00	4.27	126.74	16	4.4	-	-	-	Talaud Islands, Indonesia
40	04/07/2016	01:44:00	4.22	126.77	16	4.2	-	-	-	Talaud Islands, Indonesia

41	04/08/2016	04:11:00	4.22	126.72	20	4.3	-	-	-	Talaud Islands, Indonesia
42	04/08/2016	12:12:00	0.84	120.00	12	4.4	0.2812	0.2474	0.2639	Minahassa Peninsula, Sulawesi
43	04/08/2016	12:19:00	0.71	126.07	10	4	-	-	-	Northern Molucca Sea
44	04/08/2016	02:39:00	1.39	126.96	124	3.7	-	-	-	Northern Molucca Sea
45	04/08/2016	02:52:00	1.80	129.88	96	4.2	-	-	-	Halmahera, Indonesia
46	04/08/2016	05:27:00	3.65	126.56	10	4	-	-	-	Talaud Islands, Indonesia
47	04/09/2016	11:40:00	-0.29	123.95	74	4.2	-	-	-	Minahassa Peninsula, Sulawesi
48	04/09/2016	03:32:00	-0.99	127.52	10	4.4	0.0256	0.0009	0.0012	Halmahera, Indonesia
49	04/09/2016	04:42:00	-0.02	123.87	116	3.3	-	-	-	Minahassa Peninsula, Sulawesi
50	04/09/2016	06:20:00	1.23	126.11	10	3.5	-	-	-	Northern Molucca Sea
51	04/09/2016	11:10:00	2.80	126.45	10	4.1	-	-	-	Northern Molucca Sea
52	04/10/2016	04:15:00	-1.12	120.60	8	4	-	-	-	Sulawesi, Indonesia
53	04/10/2016	05:26:00	0.14	122.09	176	3.5	-	-	-	Minahassa Peninsula, Sulawesi
54	04/10/2016	06:49:00	3.21	122.75	537	4.4	0.1129	0.8749	0.1127	Celebes Sea
55	04/11/2016	04:32:00	2.50	128.28	179	4.1	-	-	-	Halmahera, Indonesia
56	04/11/2016	04:49:00	0.41	127.49	146	4.2	-	-	-	Halmahera, Indonesia
57	04/11/2016	04:28:00	-0.27	122.21	19	3	-	-	-	Minahassa Peninsula, Sulawesi
58	04/11/2016	06:32:00	1.14	125.82	7	3.5	-	-	-	Northern Molucca Sea
59	04/11/2016	06:54:00	-0.09	123.27	139	3.9	-	-	-	Minahassa Peninsula, Sulawesi
60	04/11/2016	08:39:00	4.11	127.97	23	4.2	0.0058	0.0018	0.0027	Talaud Islands, Indonesia
61	04/12/2016	05:54:00	-0.37	124.18	10	4.5	-	-	-	Southern Molucca Sea
62	04/12/2016	10:57:00	2.98	125.77	131	3.5	-	-	-	Talaud Islands, Indonesia
63	04/12/2016	12:42:00	1.41	128.18	97	4.4	0.0487	0.0241	0.0291	Halmahera, Indonesia
64	04/12/2016	04:19:00	-0.77	121.05	355	3.6	-	-	-	Minahassa Peninsula, Sulawesi
65	04/12/2016	07:09:00	0.57	122.41	117	3.2	-	-	-	Minahassa Peninsula, Sulawesi
66	04/12/2016	07:44:00	1.88	127.48	111	3.7	-	-	-	Halmahera, Indonesia
67	04/12/2016	08:27:00	3.42	128.26	10	4.3	-	-	-	North of Halmahera, Indonesia
68	04/12/2016	09:23:00	1.98	120.83	19	3.7	-	-	-	Minahassa Peninsula, Sulawesi
69	04/13/2016	09:13:00	0.49	126.10	185	3.7	-	-	-	Northern Molucca Sea
70	04/13/2016	01:38:00	-1.61	120.16	9	2.8	-	-	-	Sulawesi, Indonesia
71	04/13/2016	02:44:00	0.00	124.20	97	3.6	-	-	-	Southern Molucca Sea
72	04/13/2016	05:31:00	1.69	126.56	10	5.2	-	-	-	Northern Molucca Sea PGN = Info Gempa Mag:5.1 SR, 14-Apr-16 00:31:29 WIB, Lok:1.74 LU,126.52 BT (126 km BaratLaut HALMAHERABARAT-MALUT), Kedlmn:10 Km ::BMKG
73	04/13/2016	06:08:00	-0.50	127.21	43	3.7	-	-	-	Halmahera, Indonesia
74	04/13/2016	08:39:00	4.50	124.87	10	3.8	-	-	-	Celebes Sea
75	04/13/2016	11:23:00	3.76	126.99	10	4	-	-	-	Talaud Islands, Indonesia
76	04/14/2016	01:52:00	2.71	128.77	222	4.7	-	-	-	Halmahera, Indonesia
77	04/14/2016	10:27:00	-0.26	122.55	77	3.3	-	-	-	Minahassa Peninsula, Sulawesi
78	04/14/2016	12:18:00	6.09	126.09	157	4.5	-	-	-	Mindanao, Philippines
79	04/14/2016	04:15:00	2.88	128.08	145	4.1	-	-	-	Halmahera, Indonesia
80	04/14/2016	04:55:00	-0.27	125.36	297	3.8	-	-	-	Southern Molucca Sea
81	04/14/2016	06:50:00	0.08	125.08	254	3.6	-	-	-	Northern Molucca Sea
82	04/15/2016	04:50:00	2.06	127.04	100	5.5	-	-	-	Northern Molucca Sea PGN = Info Gempa Mag:5.6 SR, 15-Apr-16 11:50:12 WIB, Lok:2.04 LU,126.98 BT (102 km BaratLaut HALMAHERABARAT-MALUT), Kedlmn:79 Km ::BMKG
83	04/15/2016	11:05:00	4.22	126.78	9	5.2	-	-	-	Talaud Islands, Indonesia PGN = Info Gempa Mag:5.1 SR, 15-Apr-16 18:05:27 WIB, Lok:4.20 LU,126.72 BT (17 km TimurLaut KEP-TALAUD-SULUT), Kedlmn:11 Km ::BMKG
84	04/15/2016	03:12:00	2.01	124.89	129	3.4	-	-	-	Celebes Sea
85	04/15/2016	06:04:00	0.69	126.30	10	3.5	-	-	-	Northern Molucca Sea
86	04/15/2016	08:32:00	0.26	126.71	27	3.4	-	-	-	Northern Molucca Sea
87	04/15/2016	09:20:00	1.46	128.63	10	3.6	-	-	-	Halmahera, Indonesia
88	04/16/2016	05:51:00	1.40	126.77	10	4.1	-	-	-	Northern Molucca Sea
89	04/16/2016	06:22:00	2.38	124.53	681	4.6	-	-	-	Celebes Sea
90	04/16/2016	07:34:00	3.97	127.02	68	4.2	-	-	-	Talaud Islands, Indonesia
91	04/16/2016	07:56:00	3.61	126.90	10	4.6	-	-	-	Talaud Islands, Indonesia
92	04/16/2016	12:03:00	4.19	126.81	16	4.5	-	-	-	Talaud Islands, Indonesia
93	04/16/2016	01:28:00	4.36	126.81	10	4.4	-	-	-	Talaud Islands, Indonesia
94	04/16/2016	02:57:00	-0.11	123.80	106	4.4	-	-	-	Minahassa Peninsula, Sulawesi
95	04/16/2016	06:46:00	0.67	121.25	10	3.6	-	-	-	Minahassa Peninsula, Sulawesi
96	04/16/2016	10:21:00	3.87	122.94	497	3.9	-	-	-	Celebes Sea
97	04/16/2016	11:37:00	4.24	126.70	7	4.5	-	-	-	Talaud Islands, Indonesia

98	04/17/2016	01:00:00	-1.70	121.23	3	3.8	-	-	-	Sulawesi, Indonesia
99	04/17/2016	09:50:00	-0.04	123.07	128	3.5	-	-	-	Minahassa Peninsula, Sulawesi
100	04/17/2016	06:24:00	-0.07	123.37	118	4.3	-	-	-	Minahassa Peninsula, Sulawesi
101	04/17/2016	07:07:00	1.19	126.77	15	4.4	-	-	-	Northern Molucca Sea
102	04/18/2016	05:02:00	1.13	126.40	10	4.1	-	-	-	Northern Molucca Sea
103	04/18/2016	12:00:00	0.02	123.79	130	4	-	-	-	Minahassa Peninsula, Sulawesi
104	04/18/2016	06:35:00	-0.20	124.98	10	3.2	-	-	-	Southern Molucca Sea
105	04/18/2016	09:03:00	4.46	122.07	10	4.7	-	-	-	Celebes Sea
106	04/18/2016	11:16:00	-1.89	129.18	10	4.6	-	-	-	Halmahera, Indonesia
107	04/19/2016	03:42:00	1.88	127.31	124	4	-	-	-	Halmahera, Indonesia
108	04/19/2016	08:49:00	-0.23	124.76	7	4.4	-	-	-	Southern Molucca Sea
109	04/19/2016	05:17:00	7.55	126.50	143	4.8	-	-	-	Mindanao, Philippines
110	04/19/2016	04:34:00	-0.17	125.13	159	3.4	-	-	-	Southern Molucca Sea
111	04/20/2016	12:02:00	1.14	126.12	81	4.1	-	-	-	Northern Molucca Sea
112	04/20/2016	04:03:00	5.71	126.72	97	5.1	-	-	-	Mindanao, Philippines
113	04/21/2016	01:43:00	2.86	123.80	141	4.3	-	-	-	Celebes Sea
114	04/21/2016	03:27:00	-0.26	122.71	10	3.7	-	-	-	Minahassa Peninsula, Sulawesi
115	04/21/2016	05:04:00	1.22	126.94	52	3.5	-	-	-	Northern Molucca Sea
116	04/22/2016	06:47:00	1.50	126.58	78	5.1	-	-	-	Northern Molucca Sea
117	04/22/2016	07:02:00	4.18	123.24	539	3.6	-	-	-	Celebes Sea
118	04/22/2016	07:11:00	-0.69	121.96	8	3	-	-	-	Minahassa Peninsula, Sulawesi
119	04/22/2016	07:20:00	-1.53	120.12	229	3.3	-	-	-	Sulawesi, Indonesia
120	04/22/2016	07:22:00	-0.74	122.19	10	3.6	-	-	-	Minahassa Peninsula, Sulawesi
121	04/23/2016	06:13:00	-0.57	125.66	331	5.3	-	-	-	Southern Molucca Sea
122	04/23/2016	09:08:00	3.32	125.84	173	4.8	-	-	-	Talaud Islands, Indonesia
123	04/23/2016	05:36:00	3.18	116.87	563	3.9	-	-	-	Borneo
124	04/23/2016	06:32:00	4.49	125.47	159	3.8	-	-	-	Talaud Islands, Indonesia
125	04/24/2016	12:13:00	-0.26	125.25	10	4.4	-	-	-	Southern Molucca Sea
126	04/24/2016	08:03:00	2.01	127.12	74	3.9	-	-	-	Northern Molucca Sea
127	04/24/2016	09:02:00	-0.16	124.95	10	4	-	-	-	Southern Molucca Sea
128	04/24/2016	10:59:00	-0.41	124.24	10	3.4	-	-	-	Southern Molucca Sea
129	04/24/2016	11:37:00	1.53	127.08	103	3.7	-	-	-	Halmahera, Indonesia
130	04/24/2016	01:11:00	-0.16	124.55	10	3.4	-	-	-	Southern Molucca Sea
131	04/24/2016	02:55:00	1.62	126.55	10	3.3	-	-	-	Northern Molucca Sea
132	04/24/2016	04:31:00	-0.28	123.90	95	3.6	-	-	-	Minahassa Peninsula, Sulawesi
133	04/24/2016	06:28:00	2.90	126.36	10	3.7	-	-	-	Northern Molucca Sea
134	04/24/2016	07:42:00	1.25	125.91	7	3.4	-	-	-	Northern Molucca Sea
135	04/25/2016	01:50:00	-1.38	127.53	10	3.4	-	-	-	Halmahera, Indonesia
136	04/25/2016	04:51:00	-0.32	125.38	10	3.8	-	-	-	Southern Molucca Sea
137	04/26/2016	03:56:00	1.34	125.66	3	3.3	-	-	-	Northern Molucca Sea
138	04/26/2016	04:12:00	4.79	127.64	114	4.8	-	-	-	Talaud Islands, Indonesia
139	04/27/2016	04:14:00	3.56	126.63	0	4.2	-	-	-	Talaud Islands, Indonesia
140	04/27/2016	04:15:00	4.47	126.96	49	4.9	-	-	-	Talaud Islands, Indonesia
141	04/27/2016	10:31:00	2.32	124.48	238	4.4	-	-	-	Celebes Sea
142	04/27/2016	02:09:00	-0.09	126.97	13	3.9	-	-	-	Southern Molucca Sea
143	04/28/2016	03:45:00	1.60	121.62	10	4.2	-	-	-	Minahassa Peninsula, Sulawesi
144	04/28/2016	09:24:00	-1.22	128.29	10	3.9	-	-	-	Halmahera, Indonesia
145	04/28/2016	01:25:00	0.63	123.81	272	3.7	-	-	-	Minahassa Peninsula, Sulawesi
146	04/28/2016	05:31:00	2.95	125.68	119	3.5	-	-	-	Talaud Islands, Indonesia
147	04/28/2016	08:30:00	-1.26	126.24	10	4.3	-	-	-	Southern Molucca Sea
148	04/28/2016	11:25:00	2.38	126.14	87	3.9	-	-	-	Northern Molucca Sea
149	04/29/2016	04:58:00	0.67	128.21	10	3.2	-	-	-	Halmahera, Indonesia
150	04/29/2016	05:15:00	1.24	123.43	342	3.5	-	-	-	Minahassa Peninsula, Sulawesi
151	04/29/2016	10:18:00	0.14	125.73	113	3.6	-	-	-	Northern Molucca Sea
152	04/29/2016	10:11:00	1.40	120.86	10	3.6	-	-	-	Minahassa Peninsula, Sulawesi
153	04/29/2016	11:42:00	0.03	125.84	10	3.9	-	-	-	Northern Molucca Sea
154	04/30/2016	03:08:00	1.85	127.80	8	3.6	-	-	-	Halmahera, Indonesia
155	04/30/2016	06:27:00	1.89	125.10	30	3.9	-	-	-	Northern Molucca Sea
156	04/30/2016	06:43:00	1.46	126.31	10	3.9	-	-	-	Northern Molucca Sea
157	04/30/2016	07:07:00	-1.20	126.42	15	4.4	-	-	-	Southern Molucca Sea
158	04/30/2016	10:34:00	0.26	120.00	85	3.3	-	-	-	Minahassa Peninsula, Sulawesi
159	04/30/2016	01:35:00	1.37	122.50	10	4.1	-	-	-	Minahassa Peninsula, Sulawesi
160	04/30/2016	04:26:00	1.13	120.43	10	3.9	-	-	-	Minahassa Peninsula, Sulawesi
161	04/30/2016	03:18:00	-0.07	123.95	118	3.3	-	-	-	Minahassa Peninsula, Sulawesi
162	04/30/2016	04:33:00	-0.13	123.48	138	4.5	-	-	-	Minahassa Peninsula, Sulawesi
163	04/30/2016	05:11:00	1.62	126.95	90	3.6	-	-	-	Northern Molucca Sea
164	04/30/2016	05:26:00	0.19	123.89	207	3.9	-	-	-	Minahassa Peninsula, Sulawesi

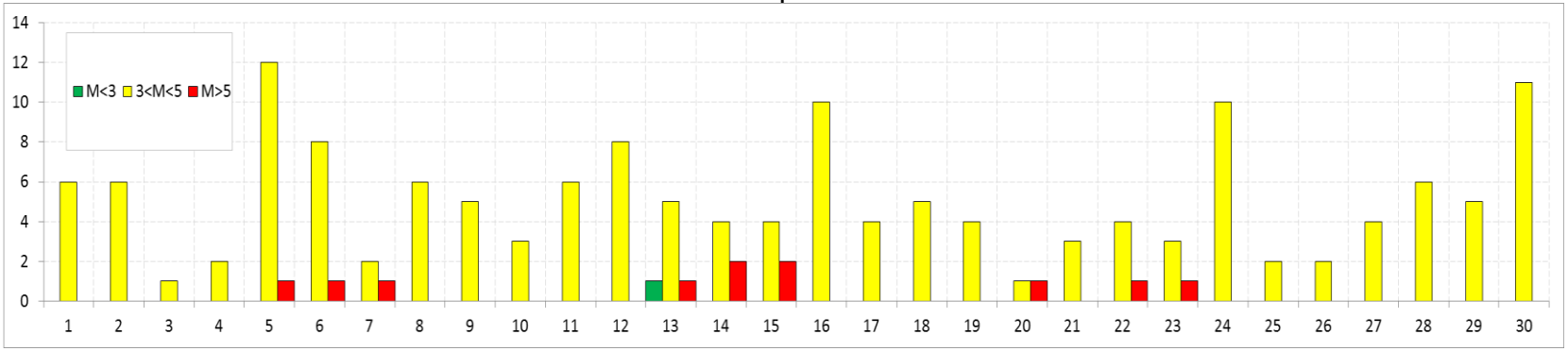
Peta 5. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan April 2016



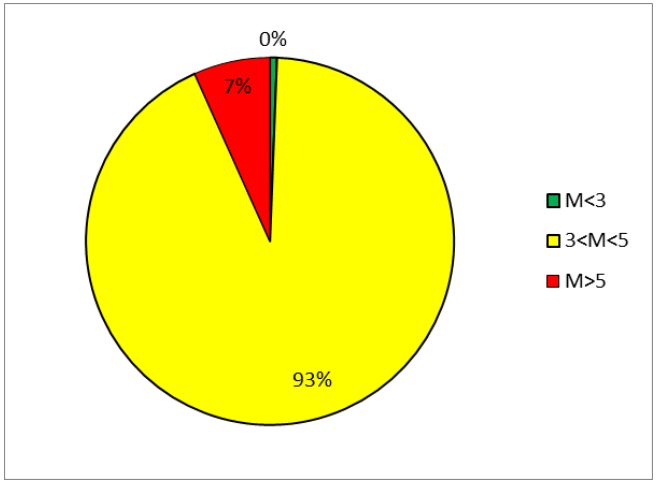
Tabel 8. Rekapitulasi Gempabumi Berdasarkan Magnitudo
Bulan April 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	0	6	0	6	0	0
2	0	6	0	6	0	0
3	0	1	0	1	0	0
4	0	2	0	2	1	0
5	0	12	1	13	1	0
6	0	8	1	9	1	0
7	0	2	1	3	1	0
8	0	6	0	6	0	0
9	0	5	0	5	0	0
10	0	3	0	3	0	0
11	0	6	0	6	0	0
12	0	8	0	8	0	0
13	1	5	1	7	0	0
14	0	4	2	6	0	0
15	0	4	2	6	2	0
16	0	10	0	10	0	0
17	0	4	0	4	0	0
18	0	5	0	5	0	0
19	0	4	0	4	0	0
20	0	1	1	2	0	0
21	0	3	0	3	0	0
22	0	4	1	5	0	0
23	0	3	1	4	0	0
24	0	10	0	10	0	0
25	0	2	0	2	0	0
26	0	2	0	2	0	0
27	0	4	0	4	0	0
28	0	6	0	6	0	0
29	0	5	0	5	0	0
30	0	11	0	11	0	0
Jumlah gempa	1	152	11	164	6	0
Jumlah gempa seluruhnya						

Histogram 7. Gempabumi Berdasarkan Magnitudo
Bulan April 2016



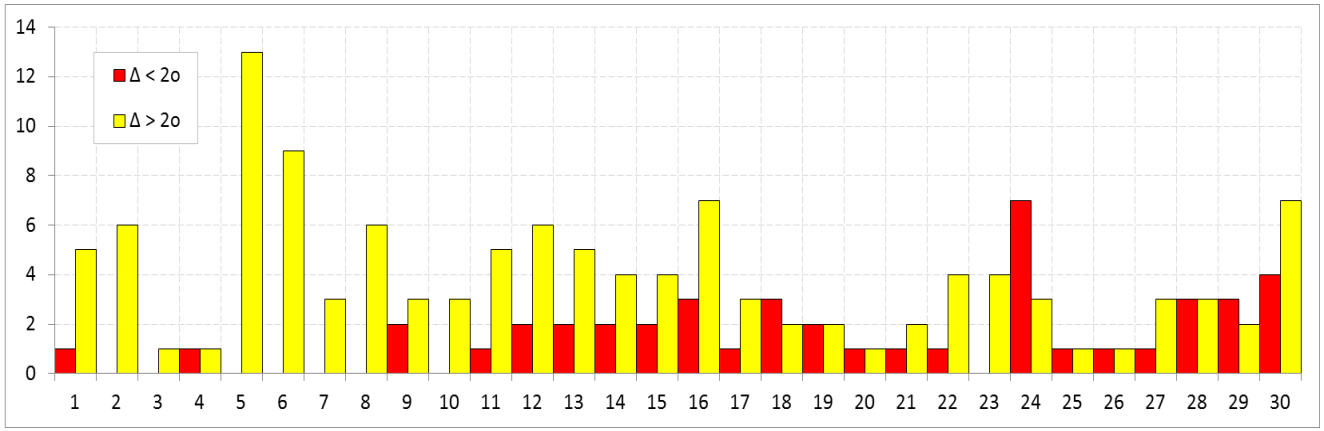
Persentase 9. Gempabumi Berdasarkan Magnitudo
Bulan April 2016



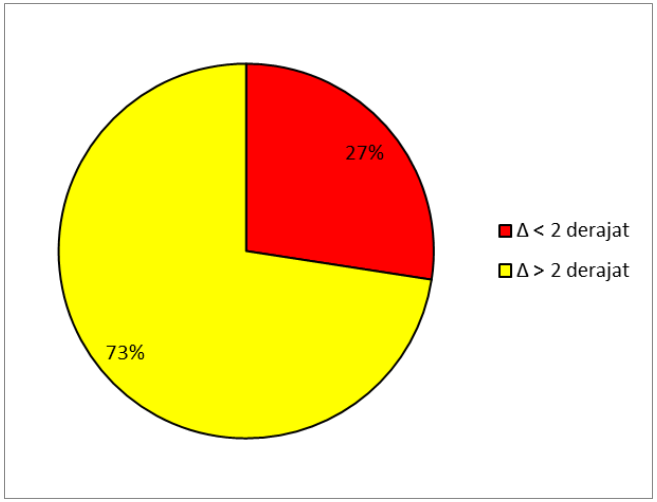
Tabel 9. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan April 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
1	1	5	6	-
2	0	6	6	-
3	0	1	1	-
4	1	1	2	-
5	0	13	13	-
6	0	9	9	-
7	0	3	3	-
8	0	6	6	-
9	2	3	5	-
10	0	3	3	-
11	1	5	6	-
12	2	6	8	-
13	2	5	7	-
14	2	4	6	-
15	2	4	6	-
16	3	7	10	-
17	1	3	4	-
18	3	2	5	-
19	2	2	4	-
20	1	1	2	-
21	1	2	3	-
22	1	4	5	-
23	0	4	4	-
24	7	3	10	-
25	1	1	2	-
26	1	1	2	-
27	1	3	4	-
28	3	3	6	-
29	3	2	5	-
30	4	7	11	-
Jumlah gempa	45	119		
Jumlah gempa seluruhnya			164	-

Histogram 8. Gempabumi Berdasarkan Jarak
Bulan April 2016



Persentase 10. Gempabumi Berdasarkan Jarak
Bulan April 2016



Data Gempabumi Bulan Mei 2016

NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (KM)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/05/2016	01:38:00	-0.9	119.8	19	3.1	-	-	-	Minahassa Peninsula, Sulawesi
2	01/05/2016	02:33:00	1.09	126.51	11	3	-	-	-	Northern Molucca Sea
3	01/05/2016	03:35:44	1.74	127.31	126	3.5	-	-	-	Halmahera, Indonesia
4	01/05/2016	06:54:00	6.05	127.37	131	4.8	0.034	0.014	0.015	Philippine Islands Region
5	01/05/2016	06:54:21	4.66	126.4	70	4.5	-	-	-	Talaud Islands, Indonesia
6	01/05/2016	07:22:53	7.3	126.02	13	4.8	-	-	-	Mindanao, Philippines
7	01/05/2016	09:50:00	0.85	122.6	14	3.1	-	-	-	Minahassa Peninsula, Sulawesi
8	01/05/2016	14:33:44	1.09	126.51	11	3	-	-	-	Northern Molucca Sea
9	01/05/2016	21:50:44	0.85	122.6	14	3.1	-	-	-	Minahassa Peninsula, Sulawesi
10	02/05/2016	00:20:13	2.66	128.02	101	4	-	-	-	Halmahera, Indonesia
11	02/05/2016	01:33:00	0.24	123.86	212	2.8	-	-	-	Minahassa Peninsula, Sulawesi
12	02/05/2016	01:59:34	4.82	127.08	247	4.6	0.004	0.002	0.003	Halmahera, Indonesia
13	02/05/2016	02:00:13	0.01	124.97	94	3.8	-	-	-	Minahassa Peninsula, Sulawesi
14	02/05/2016	04:44:53	-0.45	130.00	27	4	-	-	-	Irian Jaya Region, Indonesia
15	02/05/2016	05:02:00	-0.2	122.99	94	3.4	-	-	-	Minahassa Peninsula, Sulawesi
16	02/05/2016	12:20:00	2.66	128.02	101	4	-	-	-	Halmahera, Indonesia
17	02/05/2016	13:33:07	0.24	123.86	212	2.8	-	-	-	Minahassa Peninsula, Sulawesi
18	02/05/2016	15:34:51	-0.21	124.78	11	3.7	-	-	-	Southern Molucca Sea
19	02/05/2016	17:02:45	-0.2	122.99	94	3.4	-	-	-	Minahassa Peninsula, Sulawesi
20	03/05/2016	00:19:33	-0.11	122.92	33	3.1	-	-	-	Minahassa Peninsula, Sulawesi
21	03/05/2016	02:18:58	1.62	126.45	59	3.9	-	-	-	Northern Molucca Sea
22	03/05/2016	03:08:49	-0.12	122.52	10	2.2	-	-	-	Minahassa Peninsula, Sulawesi
23	03/05/2016	03:20:02	0.37	122.19	241	2.1	-	-	-	Minahassa Peninsula, Sulawesi
24	03/05/2016	03:51:44	0.96	122.53	31	3.8	0.026	0.074	0.062	Minahassa Peninsula, Sulawesi
25	03/05/2016	05:38:00	0.45	125.88	10	3.6	-	-	-	Northern Molucca Sea
26	03/05/2016	05:53:49	1.66	126.51	66	3.9	-	-	-	Northern Molucca Sea
27	03/05/2016	12:19:00	-0.11	122.92	33	3.1	-	-	-	Minahassa Peninsula, Sulawesi
28	03/05/2016	17:38:38	0.45	125.95	37	3.6	-	-	-	Northern Molucca Sea
29	04/05/2016	02:23:13	1.89	125.5	40	3.9	-	-	-	Northern Molucca Sea
30	04/05/2016	03:18:46	-0.12	123.13	70	3.5	-	-	-	Minahassa Peninsula, Sulawesi
31	04/05/2016	04:20:23	0.63	125.3	18	3.4	-	-	-	Northern Molucca Sea
32	04/05/2016	04:39:49	0.16	124.88	16	3.2	-	-	-	Minahassa Peninsula, Sulawesi
33	04/05/2016	06:46:26	0.28	122.07	163	2.3	-	-	-	Minahassa Peninsula, Sulawesi
34	04/05/2016	09:56:32	7.79	126	32	4.9	-	-	-	Mindanao, Philippines
35	04/05/2016	12:49:14	1.21	126.45	93	3.2	-	-	-	Northern Molucca Sea
36	04/05/2016	14:21:22	-0.25	124.77	10	3.5	-	-	-	Southern Molucca Sea
37	04/05/2016	14:21:23	-0.12	124.79	10	3.5	-	-	-	Southern Molucca Sea
38	04/05/2016	15:20:55	-0.64	129.99	18	5	-	-	-	Halmahera, Indonesia
39	04/05/2016	16:29:31	2.1	121.39	10	2.4	-	-	-	Celebes Sea
40	04/05/2016	16:54:15	0.23	121.9	156	2.2	-	-	-	Minahassa Peninsula, Sulawesi
41	04/05/2016	20:10:35	3.21	128.17	31	3.9	-	-	-	North of Halmahera, Indonesia
42	05/05/2016	08:38:30	1.67	127.22	94	4.6	-	-	-	Halmahera, Indonesia
43	05/05/2016	09:08:17	-0.91	127.24	10	3.3	-	-	-	Halmahera, Indonesia
44	05/05/2016	09:26:56	0.01	126.8	10	3.3	-	-	-	Northern Molucca Sea
45	05/05/2016	11:17:00	-0.93	126.95	10	3.3	-	-	-	Southern Molucca Sea
46	05/05/2016	12:09:47	2.26	127.2	43	4.4	0.024	0.036	0.037	Northern Molucca Sea

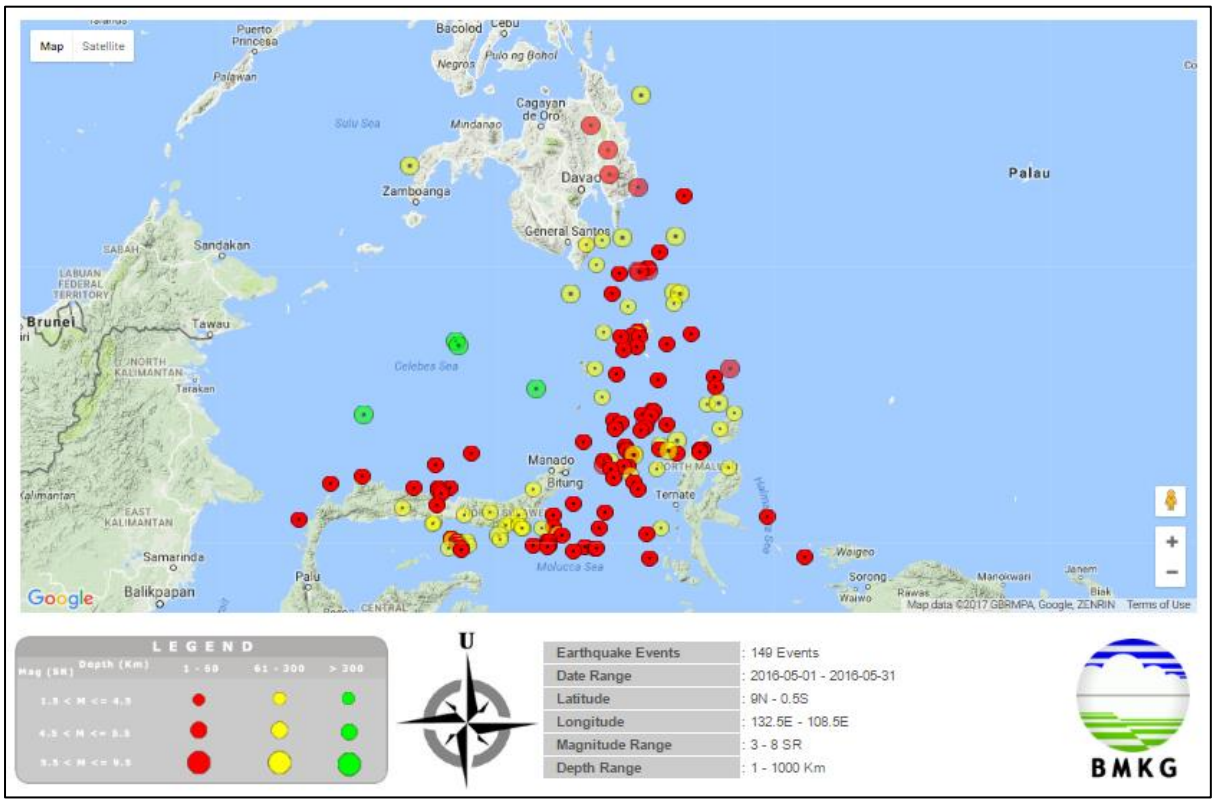
47	05/05/2016	12:43:27	-0.03	123.77	116	5	-	-	-	Minahassa Peninsula, Sulawesi PGN = Info Gempa Mag:5.1 SR, 05-May-16 19:43:27 WIB, Lok:0.10 LS,123.78 BT (56 km BaratDaya BOLAANGMONGONDOW SEL-SULUT), Kedlmn:109 Km ::BMKG
48	05/05/2016	20:23:37	1.8	126.35	10	3.7	-	-	-	Northern Molucca Sea
49	05/05/2016	20:39:17	1.59	126.54	63	5	-	-	-	Northern Molucca Sea
50	06/05/2016	00:25:44	0.14	124.66	120	3.7	-	-	-	Minahassa Peninsula, Sulawesi
51	06/05/2016	04:10:38	4.7	127.33	128	4.3	0.009	0.011	0.012	Talaud Islands, Indonesia
52	06/05/2016	04:23:11	4.91	127.34	68	4.6	-	-	-	Talaud Islands, Indonesia
53	06/05/2016	06:17:53	1.15	126.11	10	3.5	-	-	-	Northern Molucca Sea
54	06/05/2016	09:28:06	0.36	129.25	20	3.3	-	-	-	Halmahera, Indonesia
55	06/05/2016	15:22:37	0.34	122.02	165	2.6	-	-	-	Minahassa Peninsula, Sulawesi
56	06/05/2016	15:45:03	2.34	126.1	34	3.4	-	-	-	Northern Molucca Sea
57	06/05/2016	20:03:19	2.14	126.67	22	4.1	-	-	-	Northern Molucca Sea
58	07/05/2016	06:53:43	3.36	128.49	10	4.7	-	-	-	North of Halmahera, Indonesia
59	07/05/2016	08:38:22	2.55	126.91	10	4.5	0.011	0.019	0.011	Northern Molucca Sea
60	07/05/2016	09:52:03	-0.29	123	37	3.5	-	-	-	Minahassa Peninsula, Sulawesi
61	08/05/2016	06:58:43	4.92	126.08	10	4.4	0.003	0.003	0.003	Talaud Islands, Indonesia
62	08/05/2016	15:49:56	3.01	128.2	10	3.8	-	-	-	North of Halmahera, Indonesia
63	08/05/2016	16:42:05	-0.27	125.74	10	3.5	-	-	-	Southern Molucca Sea
64	08/05/2016	23:47:01	-0.86	121.25	136	3	-	-	-	Minahassa Peninsula, Sulawesi
65	09/05/2016	01:41:40	8.27	125.64	10	4.6	-	-	-	Mindanao, Philippines
66	09/05/2016	03:02:41	1.2	120.99	11	4.2	-	-	-	Minahassa Peninsula, Sulawesi; Pusat gempa berada di darat 27 km Timurlaut Tolitoli, Sulawesi Tengah; dirasakan di Tolitoli (4 MMI).
67	09/05/2016	05:44:10	-0.2	123.15	160	3.9	-	-	-	Minahassa Peninsula, Sulawesi
68	09/05/2016	14:23:42	-0.66	123.27	10	3.1	-	-	-	Minahassa Peninsula, Sulawesi
69	09/05/2016	16:30:46	3.77	126.31	10	4.3	0.009	0.008	0.010	Talaud Islands, Indonesia
70	10/05/2016	01:41:17	0.32	122.66	22	2.7	-	-	-	Minahassa Peninsula, Sulawesi
71	10/05/2016	02:16:31	1.38	128.45	68	3.5	-	-	-	Halmahera, Indonesia
72	10/05/2016	10:22:33	0.4	124.88	10	3.2	-	-	-	Minahassa Peninsula, Sulawesi
73	10/05/2016	11:05:10	-0.22	122.72	17	2.9	-	-	-	Minahassa Peninsula, Sulawesi
74	10/05/2016	13:08:05	-0.09	123.81	87	4.1	0.002	0.006	0.005	Minahassa Peninsula, Sulawesi
75	10/05/2016	15:33:32	-0.2	122.84	75	2.2	-	-	-	Minahassa Peninsula, Sulawesi
76	10/05/2016	16:18:54	0.16	123.26	215	2.8	-	-	-	Minahassa Peninsula, Sulawesi
77	10/05/2016	16:50:32	0.47	123.6	267	3.5	-	-	-	Minahassa Peninsula, Sulawesi
78	10/05/2016	18:26:00	2.41	126.86	19	3.5	-	-	-	Northern Molucca Sea
79	10/05/2016	20:31:41	-1.01	127.79	10	3.7	-	-	-	Halmahera, Indonesia
80	11/05/2016	07:25:28	0	125.05	27	4.3	-	-	-	Northern Molucca Sea
81	11/05/2016	11:19:29	1.41	126.4	35	3.7	-	-	-	Northern Molucca Sea
82	11/05/2016	12:36:23	0.8	126.9	17	2.7	-	-	-	Northern Molucca Sea
83	11/05/2016	21:39:14	1.39	125.92	43	4.9	0.271	0.526	0.363	Northern Molucca Sea; Pusat gempa berada di Laut 89 km TimurLaut BITUNG, SULUT; dirasakan di Bitung (3 MMI). PGN = Info Gempa Mag:5.0 SR, 12-May-16 04:39:10 WIB, Lok:1.45 LU,125.93 BT (89 km TimurLaut

										BITUNG-SULUT), Kedlmn:11 Km ::BMKG
84	12/05/2016	00:12:46	0.13	127.09	103	3.7	-	-	-	Halmahera, Indonesia
85	12/05/2016	10:03:33	5.32	126.65	10	4.9	0.005	0.010	0.008	Mindanao, Philippines
86	12/05/2016	13:44:38	6.89	127.55	10	4.4	-	-	-	Philippine Islands Region
87	12/05/2016	13:47:59	0.23	122.43	124	3.1	-	-	-	Minahassa Peninsula, Sulawesi
88	12/05/2016	14:10:25	5.35	126.83	39	4.6	-	-	-	Mindanao, Philippines
89	12/05/2016	15:04:29	2.79	125.87	107	3.4	-	-	-	Talaud Islands, Indonesia
90	12/05/2016	18:09:20	1.53	126.04	73	3.1	-	-	-	Northern Molucca Sea
91	12/05/2016	18:11:41	-0.92	119.85	10	2.9	-	-	-	Minahassa Peninsula, Sulawesi
92	12/05/2016	22:20:16	0.3	122.03	168	2.6	-	-	-	Minahassa Peninsula, Sulawesi
93	13/05/2016	02:43:20	-0.93	121.57	47	2.4	-	-	-	Minahassa Peninsula, Sulawesi
94	13/05/2016	05:19:11	-0.27	125.76	10	3.1	-	-	-	Southern Molucca Sea
95	13/05/2016	06:26:46	-0.2	124.48	21	3.7	-	-	-	Southern Molucca Sea
96	13/05/2016	10:03:18	4.86	127.45	113	5.1	-	-	-	Talaud Islands, Indonesia PGN = Info Gempa Mag:5.0 SR, 13-May-16 17:03:18 WIB, Lok:4.91 LU,127.47 BT (127 km TimurLaut KEP-TALAUD-SULUT), Kedlmn:100 Km ::BMKG"
97	13/05/2016	12:13:57	1.88	127.4	103	4.7	0.006	0.005	0.007	Halmahera, Indonesia
98	13/05/2016	20:43:10	-0.15	122.93	134	3.5	-	-	-	Minahassa Peninsula, Sulawesi
99	13/05/2016	22:40:15	4.14	126.6	24	4.1	-	-	-	Talaud Islands, Indonesia
100	14/05/2016	02:35:26	1.69	127.86	10	4.1	0.027	0.019	0.013	Halmahera, Indonesia; Pusat gempa berada didarat 10 km Baratlaut TOBELO, MALUKU UTARA; dirasakan di Galela (3 MMI).
101	14/05/2016	02:58:25	1.71	127.86	10	3.9	0.037	0.024	0.037	Halmahera, Indonesia; Pusat gempa berada didarat 26 km Baratlaut HALMAHERA UTARA, MALUKU UTARA; dirasakan di Galela (3 MMI).
102	14/05/2016	03:44:47	1.71	127.87	14	4.5	-	-	-	Halmahera, Indonesia; Pusat gempa berada di darat 16 km Baratlaut Halmahera Utara, MALUKU UTARA; dirasakan di Galela (3 MMI).
103	14/05/2016	07:34:25	1.75	127.94	10	3.6	-	-	-	Halmahera, Indonesia
104	14/05/2016	14:19:35	0.94	126.62	32	3.6	-	-	-	Northern Molucca Sea
105	14/05/2016	17:32:45	3.28	126.18	26	4.3	-	-	-	Talaud Islands, Indonesia
106	15/05/2016	03:34:56	0.56	121.81	75	3.4	-	-	-	Minahassa Peninsula, Sulawesi
107	15/05/2016	04:35:48	0.15	124.26	137	3.2	-	-	-	Minahassa Peninsula, Sulawesi
108	15/05/2016	15:41:26	1.52	125.91	14	3.8	-	-	-	Northern Molucca Sea
109	15/05/2016	16:06:24	3.88	127.19	10	4	0.016	0.015	0.019	Talaud Islands, Indonesia
110	15/05/2016	16:37:17	0.06	122.88	200	2.1	-	-	-	Minahassa Peninsula, Sulawesi
111	15/05/2016	20:10:20	3.81	122.94	566	4.5	-	-	-	Celebes Sea
112	16/05/2016	10:38:07	-0.25	125.54	10	3.3	-	-	-	Southern Molucca Sea
113	16/05/2016	13:54:55	-0.33	125.28	10	4.1	0.006	0.011	0.011	Southern Molucca Sea
114	16/05/2016	14:02:54	0.15	125.82	14	3.7	-	-	-	Northern Molucca Sea
115	16/05/2016	14:18:29	0.72	120.47	54	2.6	-	-	-	Minahassa Peninsula, Sulawesi
116	16/05/2016	17:44:46	0.21	123.92	132	3.1	-	-	-	Minahassa Peninsula, Sulawesi
117	16/05/2016	23:01:19	1.04	120.33	10	3.7	-	-	-	Minahassa Peninsula, Sulawesi
118	17/05/2016	09:37:11	1.67	123.2	18	3.6	-	-	-	Minahassa Peninsula, Sulawesi
119	17/05/2016	13:58:19	6.02	126.29	125	4.8	0.014	0.013	0.014	Mindanao, Philippines

										PGN = Info Gempa Mag:5.0 SR, 17-May-16 20:58:21 WIB, Lok:5.89 LU,126.22 BT (212 km BaratLaut KEP-TALAUD-SULUT), Kedlmn:93 Km ::BMKG
120	17/05/2016	19:38:40	0.34	120.85	30	2.2	-	-	-	Minahassa Peninsula, Sulawesi
121	17/05/2016	21:05:25	0.28	122.26	186	2.9	-	-	-	Minahassa Peninsula, Sulawesi
122	18/05/2016	00:23:04	2.28	126.25	10	4	-	-	-	Northern Molucca Sea
123	18/05/2016	00:28:14	5.35	126.6	10	4.6	0.003	0.003	0.003	Mindanao, Philippines
124	18/05/2016	01:49:11	0.41	124.19	146	3.6	-	-	-	Minahassa Peninsula, Sulawesi
125	18/05/2016	04:07:21	1.43	122.48	11	3.4	-	-	-	Minahassa Peninsula, Sulawesi
126	18/05/2016	07:30:49	0.6	122.51	34	3	-	-	-	Minahassa Peninsula, Sulawesi
127	18/05/2016	15:06:30	0.99	121.05	10	2.5	-	-	-	Minahassa Peninsula, Sulawesi
128	18/05/2016	15:22:29	7.46	121.95	253	5.5	-	-	-	Mindanao, Philippines
129	18/05/2016	18:13:19	5.32	126.23	10	4.3	-	-	-	Mindanao, Philippines
130	18/05/2016	19:00:27	-0.06	122.79	16	3	-	-	-	Minahassa Peninsula, Sulawesi
131	19/05/2016	00:07:26	0.95	122.05	14	4.3	0.039	0.101	0.066	Minahassa Peninsula, Sulawesi
132	19/05/2016	03:25:42	5.74	127.05	22	4.3	-	-	-	Philippine Islands Region
133	19/05/2016	04:59:00	0.25	122.44	137	3.2	-	-	-	Minahassa Peninsula, Sulawesi
134	19/05/2016	05:44:20	3.82	126.58	48	4.2	-	-	-	Talaud Islands, Indonesia
135	19/05/2016	09:04:18	3.4	125.74	156	4.1	-	-	-	Talaud Islands, Indonesia
136	19/05/2016	11:49:57	1.84	127.05	120	3.4	-	-	-	Halmahera, Indonesia
137	19/05/2016	15:52:21	3.15	127.03	26	3.5	-	-	-	Talaud Islands, Indonesia
138	19/05/2016	19:02:52	1.72	126.38	20	3	-	-	-	Northern Molucca Sea
139	19/05/2016	19:04:27	1.75	126.39	12	3.1	-	-	-	Northern Molucca Sea
140	19/05/2016	19:47:21	0.41	123.06	245	3.5	-	-	-	Minahassa Peninsula, Sulawesi
141	20/05/2016	08:27:58	-1.12	126.34	14	3.3	-	-	-	Southern Molucca Sea
142	20/05/2016	09:27:15	0.15	124.24	115	3.4	-	-	-	Minahassa Peninsula, Sulawesi
143	20/05/2016	10:20:46	-0.26	120.45	10	2.8	-	-	-	Minahassa Peninsula, Sulawesi
144	20/05/2016	10:40:19	3.97	126.4	10	4.5	0.001	0.001	0.001	Talaud Islands, Indonesia
145	20/05/2016	10:40:47	1.34	126.06	34	3.4	-	-	-	Northern Molucca Sea
146	20/05/2016	13:30:46	2.43	121.03	661	4.5	-	-	-	Celebes Sea
147	21/05/2016	03:04:10	2.19	126.76	45	4.5	-	-	-	Northern Molucca Sea
148	21/05/2016	03:06:50	2.23	126.75	29	4.7	0.0163	0.0530	0.0617	Northern Molucca Sea
149	21/05/2016	06:55:32	-0.17	122.92	18	3	-	-	-	Minahassa Peninsula, Sulawesi
150	21/05/2016	07:01:11	0.91	122.55	13	4.2	-	-	-	Minahassa Peninsula, Sulawesi
151	21/05/2016	09:24:11	0.35	122.86	110	2.3	-	-	-	Minahassa Peninsula, Sulawesi
152	21/05/2016	19:49:17	1.74	127.92	10	3.6	-	-	-	Halmahera, Indonesia
153	22/05/2016	01:09:28	1.34	127	111	4.1	0.002	0.003	0.002	Halmahera, Indonesia
154	22/05/2016	03:32:13	1.76	127.89	10	3.8	-	-	-	Halmahera, Indonesia
155	22/05/2016	06:36:52	-0.92	119.82	11	2.7	-	-	-	Minahassa Peninsula, Sulawesi
156	22/05/2016	13:18:29	-0.23	119.83	10	2.5	-	-	-	Minahassa Peninsula, Sulawesi
157	22/05/2016	16:28:34	0.04	122.19	253	2.4	-	-	-	Minahassa Peninsula, Sulawesi
158	22/05/2016	16:47:34	4.09	126.59	66	3.9	-	-	-	Talaud Islands, Indonesia
159	22/05/2016	18:29:26	5.5	125.76	217	4.2	-	-	-	Mindanao, Philippines
160	22/05/2016	22:26:28	0.2	124.19	163	3.1	-	-	-	Minahassa Peninsula, Sulawesi
161	22/05/2016	23:56:08	0.25	119.7	12	2.6	-	-	-	Minahassa Peninsula, Sulawesi
162	23/05/2016	01:00:08	0.37	120.91	24	2.5	-	-	-	Minahassa Peninsula, Sulawesi
163	23/05/2016	03:21:59	2.16	126.15	10	3.5	-	-	-	Northern Molucca Sea
164	23/05/2016	03:28:45	1.41	126.33	10	3.7	0.010	0.017	0.016	Northern Molucca Sea

165	23/05/2016	11:13:35	0.35	121.95	170	2.8	-	-	-	Minahassa Peninsula, Sulawesi
166	23/05/2016	18:16:36	2.44	126.71	10	3.4	-	-	-	Northern Molucca Sea
167	24/05/2016	00:58:43	1.17	120.99	14	2.6	-	-	-	Minahassa Peninsula, Sulawesi
168	24/05/2016	07:57:31	0.94	122.23	18	2	-	-	-	Minahassa Peninsula, Sulawesi
169	24/05/2016	15:49:47	-0.28	122.75	63	3.6	0.029	0.017	0.021	Minahassa Peninsula, Sulawesi
170	25/05/2016	03:05:51	-0.1	122.8	110	3.2	-	-	-	Minahassa Peninsula, Sulawesi
171	25/05/2016	04:31:18	-0.48	126.84	10	3.8	-	-	-	Southern Molucca Sea
172	25/05/2016	06:08:10	4.87	125.23	254	4.6	-	-	-	Talaud Islands, Indonesia
173	25/05/2016	19:10:20	8.88	126.68	63	4.9	-	-	-	Mindanao, Philippines
174	25/05/2016	21:30:55	-0.25	122.99	44	3	-	-	-	Minahassa Peninsula, Sulawesi
175	25/05/2016	23:48:10	0.36	122.08	163	2.6	-	-	-	Minahassa Peninsula, Sulawesi
176	26/05/2016	07:36:49	0.93	124.48	215	3.7	-	-	-	Minahassa Peninsula, Sulawesi
177	26/05/2016	08:25:31	4.08	127.68	15	4.2	0.003	0.002	0.002	Talaud Islands, Indonesia
178	26/05/2016	10:26:55	0.32	122.42	94	2.3	-	-	-	Minahassa Peninsula, Sulawesi
179	26/05/2016	12:16:50	-0.23	123.04	12	2.5	-	-	-	Minahassa Peninsula, Sulawesi
180	26/05/2016	15:03:51	2.5	126.94	30	3.2	-	-	-	Northern Molucca Sea
181	26/05/2016	17:34:15	0.24	121.69	191	1.8	-	-	-	Minahassa Peninsula, Sulawesi
182	27/05/2016	03:25:50	7.04	126.62	10	4.8	-	-	-	Mindanao, Philippines
183	27/05/2016	13:39:49	2.65	128.24	114	5.1	-	-	-	Halmahera, Indonesia PGN = Info Gempa Mag:5.1 SR, 27-May-16 20:39:49 WIB, Lok:2.62 LU,128.19 BT (36 km BaratLaut PULAUMOROTAI-MALUT), Kedlmn:110 Km ::BMKG
184	27/05/2016	15:54:15	1.74	127.04	29	4	0.008	0.014	0.013	Halmahera, Indonesia
185	27/05/2016	18:02:30	-0.12	124.76	10	4.1	-	-	-	Southern Molucca Sea
186	28/05/2016	05:10:32	2.95	124.52	333	3.9	-	-	-	Celebes Sea
187	28/05/2016	06:48:00	4.02	126.27	33	4	-	-	-	Talaud Islands, Indonesia
188	28/05/2016	14:14:59	5.99	125.89	171	4.1	-	-	-	Mindanao, Philippines
189	28/05/2016	14:36:57	3.92	122.89	566	4.2	0.005	0.005	0.005	Celebes Sea
190	29/05/2016	10:50:01	4.07	126.49	10	3.6	0.003	0.0031	0.018	Talaud Islands, Indonesia
191	29/05/2016	17:35:17	1.22	123.06	10	2.4	-	-	-	Minahassa Peninsula, Sulawesi
192	29/05/2016	18:01:53	-0.12	125.79	20	2.8	-	-	-	Southern Molucca Sea
193	30/05/2016	01:24:13	0.95	122.78	30	3.2	-	-	-	Minahassa Peninsula, Sulawesi
194	30/05/2016	08:52:03	0.32	119.7	19	3.5	-	-	-	Minahassa Peninsula, Sulawesi
195	30/05/2016	10:06:52	4.11	125.91	76	4.1	-	-	-	Talaud Islands, Indonesia
196	30/05/2016	10:21:22	1.18	120.33	35	2.7	-	-	-	Minahassa Peninsula, Sulawesi
197	30/05/2016	12:46:17	2.48	128.56	221	4.3	-	-	-	Halmahera, Indonesia
198	30/05/2016	13:41:39	-0.21	122.87	18	2.5	-	-	-	Minahassa Peninsula, Sulawesi
199	30/05/2016	14:11:11	0.27	124.02	172	3	-	-	-	Minahassa Peninsula, Sulawesi
200	30/05/2016	14:53:28	-0.22	122.87	40	2.8	0.001	0.001	0.001	Minahassa Peninsula, Sulawesi
201	30/05/2016	18:07:51	0.31	122.11	172	2	-	-	-	Minahassa Peninsula, Sulawesi
202	30/05/2016	18:12:35	4.03	126.63	41	3.9	-	-	-	Talaud Islands, Indonesia
203	31/05/2016	03:26:25	-0.13	126.5	91	4.9	0.016	0.010	0.009	Southern Molucca Sea
204	31/05/2016	05:04:42	1.41	122.36	22	2.5	-	-	-	Minahassa Peninsula, Sulawesi
205	31/05/2016	06:20:49	-0.56	122.38	15	2.7	-	-	-	Minahassa Peninsula, Sulawesi
206	31/05/2016	07:47:18	1.67	127.41	10	3.4	-	-	-	Halmahera, Indonesia
207	31/05/2016	10:06:53	2.16	128.28	138	3.5	-	-	-	Halmahera, Indonesia

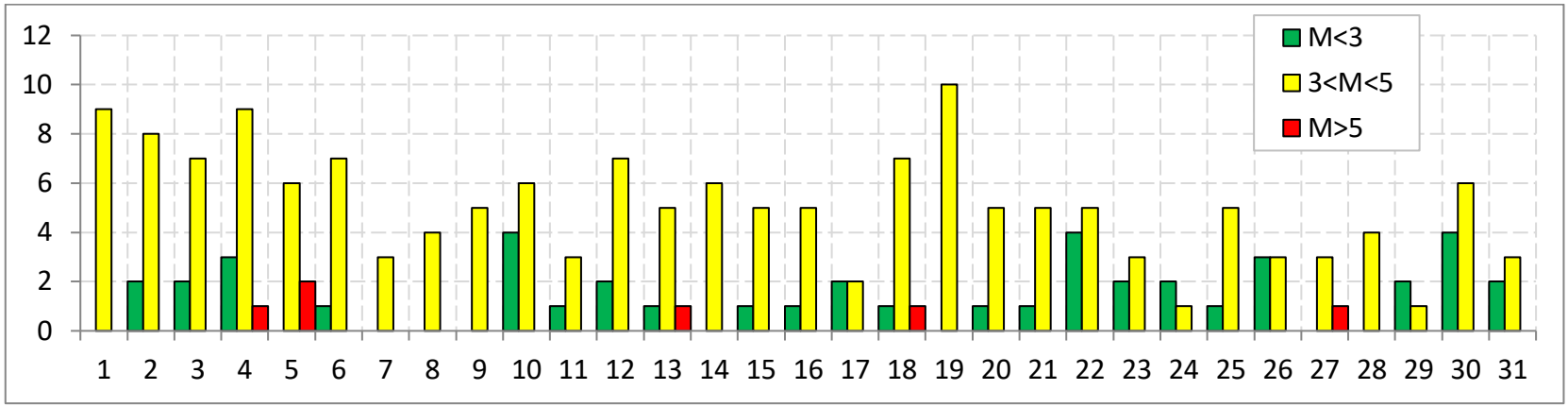
Peta 6. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Mei 2016



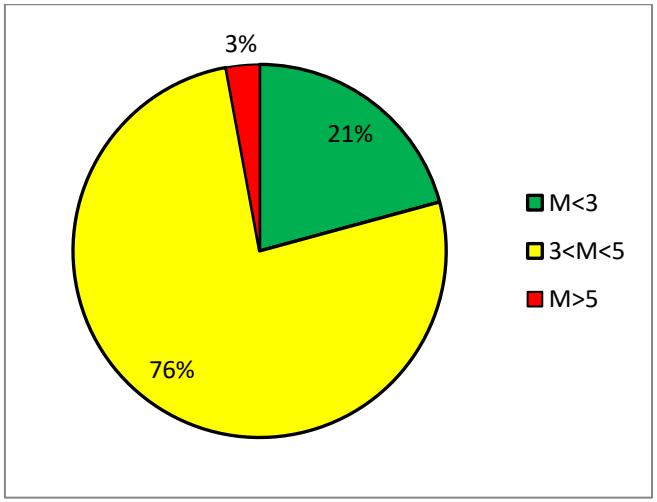
Tabel 10. Rekapitulasi Gempabumi Berdasarkan Magnitudo
Bulan Mei 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	0	9	0	9	0	0
2	2	8	0	10	0	0
3	2	7	0	9	0	0
4	3	9	1	13	0	0
5	0	6	2	8	0	0
6	1	7	0	8	0	0
7	0	3	0	3	0	0
8	0	4	0	4	0	0
9	0	5	0	5	1	0
10	4	6	0	10	0	0
11	1	3	0	4	0	0
12	2	7	0	9	1	0
13	1	5	1	7	0	0
14	0	6	0	6	3	0
15	1	5	0	6	0	0
16	1	5	0	6	0	0
17	2	2	0	4	0	0
18	1	7	1	9	0	0
19	0	10	0	10	0	0
20	1	5	0	6	0	0
21	1	5	0	6	0	0
22	4	5	0	9	0	0
23	2	3	0	5	0	0
24	2	1	0	3	0	0
25	1	5	0	6	0	0
26	3	3	0	6	0	0
27	0	3	1	4	0	0
28	0	4	0	4	0	0
29	2	1	0	3	0	0
30	4	6	0	10	0	0
31	2	3	0	5	0	0
Jumlah gempa	43	158	6	207	5	0
Jumlah gempa seluruhnya						

Histogram 9. Gempabumi Berdasarkan Magnitudo
Bulan Mei 2016



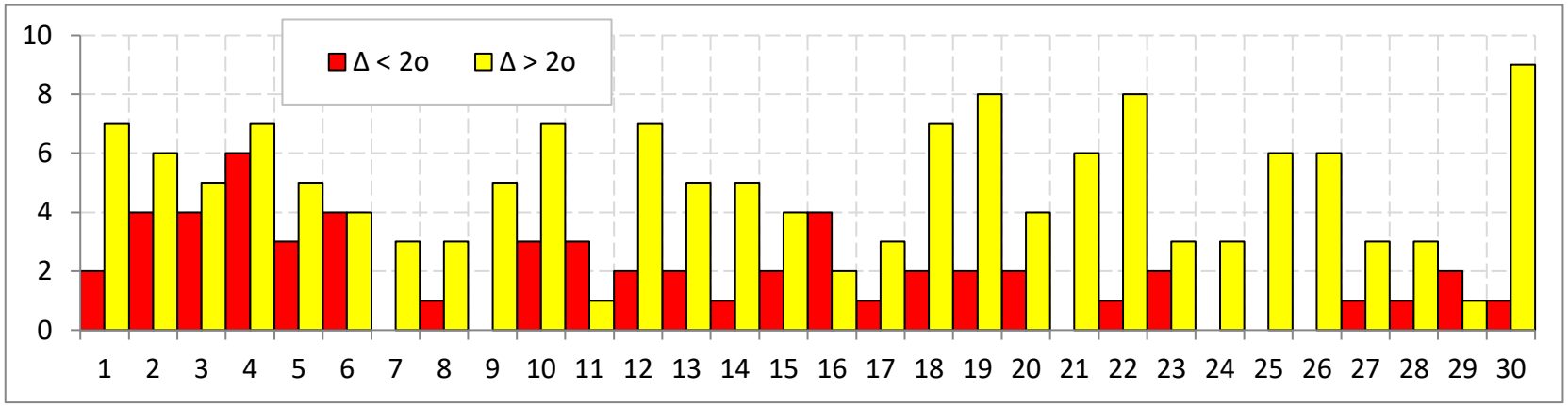
Persentase 11. Gempabumi Berdasarkan Magnitudo
Bulan Mei 2016



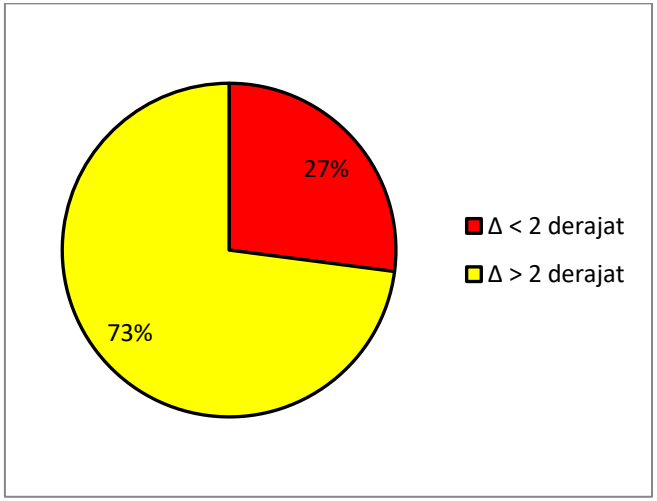
Tabel 11. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan Mei 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/05/2016	2	7	9	-
02/05/2016	4	6	10	-
03/05/2016	4	5	9	-
04/05/2016	6	7	13	-
05/05/2016	3	5	8	-
06/05/2016	4	4	8	-
07/05/2016	0	3	3	-
08/05/2016	1	3	4	-
09/05/2016	0	5	5	-
10/05/2016	3	7	10	-
11/05/2016	3	1	4	-
12/05/2016	2	7	9	-
13/05/2016	2	5	7	-
14/05/2016	1	5	6	-
15/05/2016	2	4	6	-
16/05/2016	4	2	6	-
17/05/2016	1	3	4	-
18/05/2016	2	7	9	-
19/05/2016	2	8	10	-
20/05/2016	2	4	6	-
21/05/2016	0	6	6	-
22/05/2016	1	8	9	-
23/05/2016	2	3	5	-
24/05/2016	0	3	3	-
25/05/2016	0	6	6	-
26/05/2016	0	6	6	-
27/05/2016	1	3	4	-
28/05/2016	1	3	4	-
29/05/2016	2	1	3	-
30/05/2016	1	9	10	-
31/05/2016	0	5	5	
Jumlah gempa	56	151	207	-
Jumlah gempa seluruhnya				

Histogram 10. Gempabumi Berdasarkan Jarak
Bulan Mei 2016



Persentase 12. Gempabumi Berdasarkan Jarak
Bulan Mei 2016



Data Gempabumi Bulan Juni 2016

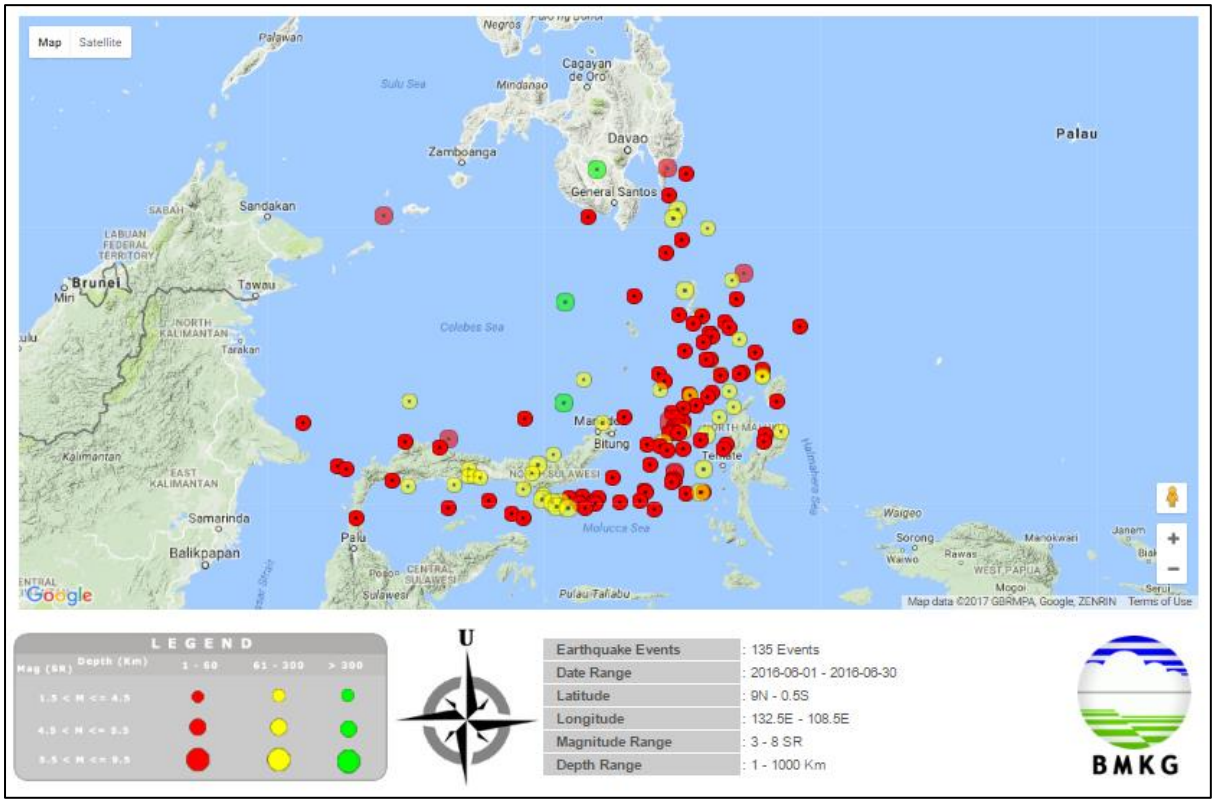
NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (KM)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/06/2016	03:23:43	4.89	126.19	10.5	4.3				Talaud Islands, Indonesia
2	01/06/2016	03:41:03	1.06	122.09	10	2.5				Minahassa Peninsula, Sulawesi
4	01/06/2016	06:30:16	1.1	128.23	10	3.7				Halmahera, Indonesia
5	01/06/2016	13:03:51	2.13	127.53	122	3.7				Northern Molucca Sea
6	01/06/2016	13:32:32	2.75	124.99	287.3	3.7				Celebes Sea
7	01/06/2016	18:47:23	0.4	122.21	182	3.5				Minahassa Peninsula, Sulawesi
8	01/06/2016	19:12:54	1.5	124.96	162.7	3.9				Minahassa Peninsula, Sulawesi
9	02/06/2016	03:33:04	-0.87	123.59	10	3.7	0.001	0.002	0.001	Minahassa Peninsula, Sulawesi
10	02/06/2016	08:34:33	0.38	125.15	10	3.8				Northern Molucca Sea
11	02/06/2016	09:45:15	1.94	121.01	133	3				Minahassa Peninsula, Sulawesi
12	02/06/2016	14:17:32	0.19	120.99	123	3.4				Minahassa Peninsula, Sulawesi
13	02/06/2016	15:01:23	-0.36	124.15	19.8	5.3				Southern Molucca Sea PGN = Info Gempa Mag:5.0 SR, 02-Jun-16 22:01:23 WIB, Lok:0.33 LS,124.20 BT (90 km Tenggara BOLAANGMONGONDOWSEL-SULUT), Kedlmn:14 Km ::BMKG
14	02/06/2016	16:23:04	6.69	126.52	96.9	4.3				Mindanao, Philippines
15	02/06/2016	20:05:30	-0.41	125.04	10	3.6				Southern Molucca Sea
16	02/06/2016	22:11:03	-0.58	120.01	54.4	4.3				Minahassa Peninsula, Sulawesi
17	03/06/2016	02:04:41	0.08	127.01	98.8	4.1	0.008	0.016	0.018	Halmahera, Indonesia
18	03/06/2016	09:19:23	0.96	125.9	11	4				Northern Molucca Sea
19	03/06/2016	16:15:26	-0.24	121.8	10	3				Minahassa Peninsula, Sulawesi
20	03/06/2016	16:58:26	-0.15	124.46	10	3.2				Southern Molucca Sea
21	03/06/2016	17:16:34	0.62	120.4	10	3.9				Minahassa Peninsula, Sulawesi
22	03/06/2016	18:32:17	1.76	126.84	750	3.7				Northern Molucca Sea
23	03/06/2016	19:12:00	4.05	125.59	15	3.7				Talaud Islands, Indonesia
24	03/06/2016	20:40:23	-0.13	123.75	108.8	4.5				Minahassa Peninsula, Sulawesi
25	04/06/2016	10:44:10	0.39	126.34	10	5.3	0.022	0.053	0.044	Northern Molucca Sea PGN = Info Gempa Mag:5.3 SR, 04-Jun-16 17:44:10 WIB, Lok:0.46 LU,126.43 BT (111 km BaratDaya TERNATE-MALUT), Kedlmn:10 Km ::BMKG
26	04/06/2016	14:41:21	-0.18	125.3	10	3.8				Southern Molucca Sea
27	04/06/2016	21:44:40	2.16	126.74	10	4.4				Northern Molucca Sea
28	05/06/2016	00:03:12	-0.05	124.27	18	3.2				Southern Molucca Sea
29	05/06/2016	05:45:41	1.21	123.75	157.4	3.7	0.001	0.002	0.002	Minahassa Peninsula, Sulawesi
30	05/06/2016	06:01:39	5.37	126.73	222.4	4.6				Mindanao, Philippines
31	05/06/2016	08:57:31	1.8	127.55	112.1	4.1				Halmahera, Indonesia
32	05/06/2016	10:03:38	1.61	125.37	10	3.5				Northern Molucca Sea
33	05/06/2016	10:09:54	0.24	120.27	60	2.4				Minahassa Peninsula, Sulawesi
34	05/06/2016	11:47:51	-0.24	122.97	37.8	4.1				Minahassa Peninsula, Sulawesi
35	05/06/2016	15:00:51	4.47	127.59	110	4.4				Talaud Islands, Indonesia
36	05/06/2016	16:11:01	-0.8	120.32	23.1	4.7				Minahassa Peninsula, Sulawesi
37	05/06/2016	17:06:23	2.03	126.72	80	3.2				Northern Molucca Sea
38	06/06/2016	12:07:45	-1.08	127.09	10	3.7				Halmahera, Indonesia
39	06/06/2016	13:10:24	4.8	126.47	20	4.2				Talaud Islands, Indonesia
40	06/06/2016	14:38:19	4.23	126.76	40	3.8				Talaud Islands, Indonesia
41	06/06/2016	15:30:19	2.2	126.78	10	3.4				Northern Molucca Sea
42	06/06/2016	16:48:00	2.05	127.14	112.8	3.9				Northern Molucca Sea
43	07/06/2016	00:29:36	0.39	126.36	10	4.6				Northern Molucca Sea
44	07/06/2016	07:08:29	7.36	121.4	427.7	4.8				Mindanao, Philippines
45	07/06/2016	07:32:19	1.84	126.2	5	3.5				Northern Molucca Sea
46	07/06/2016	12:23:11	5.99	126.32	10	4.6				Mindanao, Philippines
47	07/06/2016	14:20:58	5.79	126.46	93	5				Mindanao, Philippines
48	07/06/2016	15:25:36	6.22	126.36	85.9	4.3				Mindanao, Philippines
49	07/06/2016	18:32:53	3.6	126.73	23.7	3.8				Talaud Islands, Indonesia
50	07/06/2016	19:15:17	1.36	126.39	46.5	6.5	0.927	4.222	3.259	Northern Molucca Sea
51	07/06/2016	19:29:55	1.25	128.26	15	4.2				Halmahera, Indonesia
52	07/06/2016	19:41:18	1.27	126.39	10	4.2				Northern Molucca Sea
53	07/06/2016	20:20:35	1.38	126.38	10	3.6				Northern Molucca Sea
54	07/06/2016	20:45:15	1.34	126.4	10	4.5				Northern Molucca Sea
55	07/06/2016	21:45:53	-0.1	123.82	116	2.9				Minahassa Peninsula, Sulawesi

56	08/06/2016	00:42:31	1.32	126.33	0	4.1				Northern Molucca Sea
57	08/06/2016	01:06:39	1.27	126.49	79.8	4				Northern Molucca Sea
58	08/06/2016	03:02:08	-0.25	126.08	60	4.2				Southern Molucca Sea
59	08/06/2016	03:31:45	2.6	128.43	9	4.2				Halmahera, Indonesia
60	08/06/2016	06:25:47	1.65	126.51	50	4.2				Northern Molucca Sea
61	08/06/2016	10:49:49	3.23	126.76	115.4	3.7				Talaud Islands, Indonesia
62	08/06/2016	12:58:06	1.41	126.44	10	3.7				Northern Molucca Sea
63	08/06/2016	16:47:52	0.45	122.53	68.1	2.6				Minahassa Peninsula, Sulawesi
64	08/06/2016	17:32:32	5.61	127.11	138.7	4				Philippine Islands Region
65	08/06/2016	20:38:54	-0.44	119.94	10	3.7				Minahassa Peninsula, Sulawesi
66	08/06/2016	20:45:39	2.35	126.14	10	3.9				Northern Molucca Sea
67	08/06/2016	22:38:15	1.37	126.31	12.7	4				Northern Molucca Sea
68	08/06/2016	23:43:10	1.29	126.38	10	4.1				Northern Molucca Sea
69	09/06/2016	11:11:49	1.06	124.24	221.4	3.8				Minahassa Peninsula, Sulawesi
70	09/06/2016	11:12:12	1.64	122.63	10	4.3				Minahassa Peninsula, Sulawesi
71	09/06/2016	11:46:53	1.84	121.56	216.3	3.7				Minahassa Peninsula, Sulawesi
72	09/06/2016	19:50:08	7.06	126.87	178.6	4.1				Mindanao, Philippines
73	09/06/2016	23:59:56	-0.26	123.97	60	4.8	0.000	0.002	0.002	Minahassa Peninsula, Sulawesi
74	10/06/2016	07:35:21	6.62	127.11	154.7	4.7				Philippine Islands Region
75	10/06/2016	08:06:18	0.84	121.59	42	2.8				Minahassa Peninsula, Sulawesi
76	10/06/2016	08:24:44	1.35	126.44	10	4.6				Northern Molucca Sea
77	10/06/2016	08:24:44	1.3	126.4	10	4.4				Northern Molucca Sea
78	10/06/2016	15:48:15	0.83	126.66	10	3.4				Northern Molucca Sea
79	10/06/2016	18:19:06	1.93	126.55	10	3.3				Northern Molucca Sea
80	10/06/2016	19:32:37	2.45	127.41	20.3	3.9	0.005	0.002	0.002	Northern Molucca Sea
81	11/06/2016	00:27:29	4.1	126.54	44.9	4.6	0.001	0.001	0.009	Talaud Islands, Indonesia
82	11/06/2016	10:11:38	6.59	124.84	346	4.7				Mindanao, Philippines
83	11/06/2016	17:19:27	-0.14	124.79	24	3.9				Southern Molucca Sea
84	11/06/2016	17:29:58	-0.09	122.62	19	3.4				Minahassa Peninsula, Sulawesi
85	11/06/2016	10:11:37	6.54	125.06	379.6	4.9				Mindanao, Philippines
86	11/06/2016	17:19:26	-0.18	124.77	15.6	4				Southern Molucca Sea
87	11/06/2016	17:29:59	-0.09	122.57	12.3	3.4				Minahassa Peninsula, Sulawesi
88	12/06/2016	01:01:48	0.14	125.78	10	3.6				Northern Molucca Sea
89	12/06/2016	01:15:47	2.44	129.76	270	4.7				Halmahera, Indonesia
90	12/06/2016	01:34:50	0.07	129.57	282	4.8	0.006	0.011	0.014	Halmahera, Indonesia
91	12/06/2016	01:49:58	3.49	128.95	10	4.5				North of Halmahera, Indonesia
92	12/06/2016	04:17:03	3.53	127.42	10	4				Talaud Islands, Indonesia
93	12/06/2016	04:22:04	3.29	127.24	10	4.1				Talaud Islands, Indonesia
94	12/06/2016	04:40:45	3.42	127.51	10	3.6				Talaud Islands, Indonesia
95	12/06/2016	04:56:12	3.32	127.14	10	4.4				Talaud Islands, Indonesia
96	12/06/2016	10:39:40	5.6	127	133.1	4.1				Philippine Islands Region
97	12/06/2016	21:46:52	3.12	126.98	10	3.6				Talaud Islands, Indonesia
98	12/06/2016	21:24:00	1.93	124.19	310.2	3.9				Minahassa Peninsula, Sulawesi
99	12/06/2016	21:43:15	3.21	127.02	10	4				Talaud Islands, Indonesia
100	13/06/2016	07:02:31	-0.09	124.07	125.9	4.5				Southern Molucca Sea
101	13/06/2016	14:55:13	5.55	126.38	85.6	4.7				Mindanao, Philippines
102	13/06/2016	16:44:17	-0.18	124.75	10	4				Southern Molucca Sea
103	13/06/2016	16:59:56	3.47	126.88	10	3.6				Talaud Islands, Indonesia
104	13/06/2016	17:58:59	4.46	128.02	10	4.6				North of Halmahera, Indonesia
105	14/06/2016	16:21:42	-0.1	123.78	115	3.1				Minahassa Peninsula, Sulawesi
106	14/06/2016	18:36:10	0.27	121.87	195.1	4.2				Minahassa Peninsula, Sulawesi
107	14/06/2016	19:06:08	3.92	126.57	52.8	4				Talaud Islands, Indonesia
108	15/06/2016	03:13:14	0.32	126.4	10	3.3				Northern Molucca Sea
109	15/06/2016	03:50:46	0.29	126.34	54	3				Northern Molucca Sea
110	15/06/2016	04:33:04	0.44	123.58	270	4.3				Minahassa Peninsula, Sulawesi
111	15/06/2016	04:41:37	0.13	126.19	10	3.6				Northern Molucca Sea
112	15/06/2016	09:33:42	2.32	127.99	82.8	4.2	0.131	0.067	0.093	Northern Molucca Sea
113	16/06/2016	00:24:41	1.29	126.65	10	3.8	0.005	0.004	0.005	Northern Molucca Sea
114	16/06/2016	01:33:02	3.6	126.83	20	4.2				Talaud Islands, Indonesia
115	16/06/2016	02:49:46	1.75	127.08	90	3.8				Halmahera, Indonesia
116	16/06/2016	17:17:14	1.55	126.41	56.1	3.5				Northern Molucca Sea
117	16/06/2016	19:12:10	2.94	128.06	10	3.9				Halmahera, Indonesia
118	16/06/2016	19:33:23	2.52	127.84	21.7	4.3				Northern Molucca Sea
119	17/06/2016	04:17:01	2.49	127.72	15	3.6				Northern Molucca Sea
120	17/06/2016	04:21:16	0.98	121.63	10	3.9				Minahassa Peninsula, Sulawesi
121	17/06/2016	11:51:12	-0.07	123.13	117	2.8				Minahassa Peninsula, Sulawesi
122	17/06/2016	14:43:30	4.44	129.2	92.9	4.4				North of Halmahera, Indonesia
123	18/06/2016	04:35:10	1.66	126.35	10	4.4				Northern Molucca Sea
124	18/06/2016	06:13:41	1.61	126.33	53.2	3.8				Northern Molucca Sea
125	18/06/2016	07:47:38	0.1	126.89	89.5	4.9	0.047	0.044	0.025	Northern Molucca Sea
126	18/06/2016	15:33:07	0.01	125.25	212.2	3.9				Southern Molucca Sea

127	18/06/2016	17:31:30	5.41	123.95	400	4.1				Mindanao, Philippines
128	18/06/2016	23:05:27	-0.31	124.72	259.7	4.2				Southern Molucca Sea
129	19/06/2016	00:26:21	1.24	122.5	16	2.6				Minahassa Peninsula, Sulawesi
130	19/06/2016	00:37:31	3.61	124.4	319.3	4.4				Celebes Sea
131	19/06/2016	01:42:55	6.82	124.55	10	4.4				Mindanao, Philippines
132	19/06/2016	03:44:42	0.98	126.18	10.2	4.1				Northern Molucca Sea
133	19/06/2016	05:00:12	1.01	126.16	10	5.5	0.205	0.282	0.276	Northern Molucca Sea PGN = Info Gempa Mag:5.1 SR, 19-Jun-16 12:00:12 WIB, Lok:1.03 LU,126.14 BT (121 km Tenggara BITUNG-SULUT), Kedlmn:10 Km ::BMKG
134	19/06/2016	07:58:25	0.27	123.37	156.9	3.8				Minahassa Peninsula, Sulawesi
135	19/06/2016	13:59:21	2.1	127.22	35.8	3.8				Northern Molucca Sea
136	19/06/2016	15:32:35	1.14	126.23	10	3.2				Northern Molucca Sea
137	19/06/2016	16:50:34	1.99	127.15	38.4	4.3				Halmahera, Indonesia
138	19/06/2016	20:37:43	2.06	124.34	283.2	3.3				Celebes Sea
139	20/06/2016	01:00:18	1.26	127.14	125.1	4.7				Halmahera, Indonesia
140	20/06/2016	02:34:16	1.06	127.46	10	3.4				Halmahera, Indonesia
141	20/06/2016	05:16:27	0.93	126.54	10	3.6				Northern Molucca Sea
142	20/06/2016	06:52:53	2.24	124.61	280	4.1				Celebes Sea
143	20/06/2016	11:44:02	1.9	128.49	28	3.5				Halmahera, Indonesia
144	20/06/2016	16:30:38	-0.2	123.94	92.5	4.8	0.001	0.001	0.002	Minahassa Peninsula, Sulawesi
145	21/06/2016	11:46:26	0.45	125.61	10	3.7				Northern Molucca Sea
146	21/06/2016	19:58:46	1.97	127.37	109.8	3.9	0.012	0.009	0.013	Halmahera, Indonesia
147	22/06/2016	11:00:00	0.5	126.95	41.2	5.2	0.166	0.215	0.356	Northern Molucca Sea
148	22/06/2016	17:51:19	2.68	127.98	137.8	3.9				Northern Molucca Sea
149	22/06/2016	19:54:36	3.28	127.87	106.6	4.4				Talaud Islands, Indonesia
150	23/06/2016	13:40:27	-0.17	124.62	10	3.8				Southern Molucca Sea
151	23/06/2016	21:24:48	0.29	123.99	31.9	3.1				Minahassa Peninsula, Sulawesi
152	24/06/2016	00:07:15	1.49	126.59	40	4.6	0.005	0.004	0.005	Northern Molucca Sea
153	24/06/2016	14:41:58	-6.86	126.66	521.5	4.9				Banda Sea
154	24/06/2016	14:43:28	1.44	126.38	7.3	4.4				Northern Molucca Sea
155	24/06/2016	16:29:03	0.31	124.82	131.4	3.5				Minahassa Peninsula, Sulawesi
156	24/06/2016	21:06:10	-0.06	122.97	10	3.7				Minahassa Peninsula, Sulawesi
157	24/06/2016	21:53:32	1.51	127.14	145.7	3.9				Halmahera, Indonesia
158	25/06/2016	01:47:08	-1.88	126.46	10	4.4				Southern Molucca Sea
159	25/06/2016	06:40:29	6.38	126.04	10	5.4				Mindanao, Philippines
160	25/06/2016	09:00:15	-0.5	123.66	10	3.4				Minahassa Peninsula, Sulawesi
161	25/06/2016	12:33:46	2.19	126.21	83.3	3.7				Northern Molucca Sea
162	25/06/2016	14:53:38	1.57	122.97	10	3.5				Minahassa Peninsula, Sulawesi
163	25/06/2016	15:18:13	2.75	127.05	10	4				Northern Molucca Sea
164	25/06/2016	16:02:11	1.57	126.36	67.7	4	0.002	0.003	0.003	Northern Molucca Sea
165	25/06/2016	16:24:51	2.7	126.93	10	3.8				Northern Molucca Sea
166	25/06/2016	18:10:51	-0.55	125.29	10	3				Southern Molucca Sea
167	26/06/2016	03:41:05	-0.16	120.25	485.8	3.6				Minahassa Peninsula, Sulawesi
168	26/06/2016	07:02:57	2.82	128.7	247.4	4.5	0.002	0.001	0.001	Halmahera, Indonesia
169	26/06/2016	07:20:13	2.39	126.34	435	4.1				Northern Molucca Sea
170	26/06/2016	12:04:03	-0.23	123.91	71.6	3.9				Minahassa Peninsula, Sulawesi
171	26/06/2016	14:12:02	-0.01	123.29	214	3.8				Minahassa Peninsula, Sulawesi
172	26/06/2016	15:09:12	2.51	126.09	10	3.7				Northern Molucca Sea
173	26/06/2016	16:21:20	1.74	127.45	173.9	3.3				Halmahera, Indonesia
174	26/06/2016	23:02:53	3.83	128.48	638.8	4.4				North of Halmahera, Indonesia
175	27/06/2016	08:13:34	6.56	125.88	174.3	4.2				Mindanao, Philippines
176	27/06/2016	08:20:06	-0.14	124.77	10	3.8	0.003	0.001	0.001	Southern Molucca Sea
177	27/06/2016	12:46:41	-0.22	124.51	14.3	3.7				Southern Molucca Sea
178	27/06/2016	16:42:12	-0.61	123.42	10	4.2				Minahassa Peninsula, Sulawesi
179	27/06/2016	18:13:00	0.43	123.96	10	3.3				Minahassa Peninsula, Sulawesi
180	27/06/2016	19:08:41	1.23	126.96	30.4	3.6				Northern Molucca Sea
181	28/06/2016	01:20:11	2.11	126.84	10	4.1	0.003	0.001	0.001	Northern Molucca Sea
182	28/06/2016	15:55:36	-0.46	119.55	194.2	3.9				Minahassa Peninsula, Sulawesi
183	28/06/2016	17:23:29	-0.69	124.27	5	3.4				Southern Molucca Sea
184	28/06/2016	18:12:31	-4.96	122.82	10	4.1				Sulawesi, Indonesia
185	28/06/2016	18:13:25	1.04	125.56	88.3	3.1				Northern Molucca Sea
186	28/06/2016	19:28:19	-0.85	128.4	10	4.2				Halmahera, Indonesia
187	28/06/2016	21:35:21	0.77	124.9	5	4.5				Minahassa Peninsula, Sulawesi
188	29/06/2016	04:27:06	-1.9	128.14	63.1	4.3				Halmahera, Indonesia
189	29/06/2016	08:46:40	-3.51	122.03	10	5.1				Sulawesi, Indonesia
190	29/06/2016	14:26:12	2.76	128.36	10	3.6				Halmahera, Indonesia
191	29/06/2016	17:28:40	3.35	126.2	10	4.6				Talaud Islands, Indonesia
192	29/06/2016	20:04:25	4.25	126.7	92.5	3.6				Talaud Islands, Indonesia
193	30/06/2016	10:46:16	1.19	121.75	10	5.3	2.396	4.917	4.892	Minahassa Peninsula, Sulawesi

										PGN = Info Gempa Mag:5.0 SR, 30-Jun-16 17:46:17 WIB, Lok:1.09 LU,121.76 BT (42 km TimurLaut POHUWATO-GORONTALO), Kedlmn:10 Km ::BMKG
194	30/06/2016	11:43:12	0.45	123.65	248.2	5.5				Minahassa Peninsula, Sulawesi PGN = Info Gempa Mag:5.0 SR, 30-Jun-16 18:43:13 WIB, Lok:0.50 LU,123.62 BT (26 km BaratLaut BOLAANGMONGONDOWSEL-SULUT), Kedlmn:228 Km ::BMKG
195	30/06/2016	15:42:09	4.78	128.03	10	4.1				North of Halmahera, Indonesia
196	30/06/2016	18:40:08	-0.67	121.73	10	3.1				Minahassa Peninsula, Sulawesi
197	30/06/2016	20:04:07	6.24	124.89	10	4.3				Mindanao, Philippines

Peta 7. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Juni 2016



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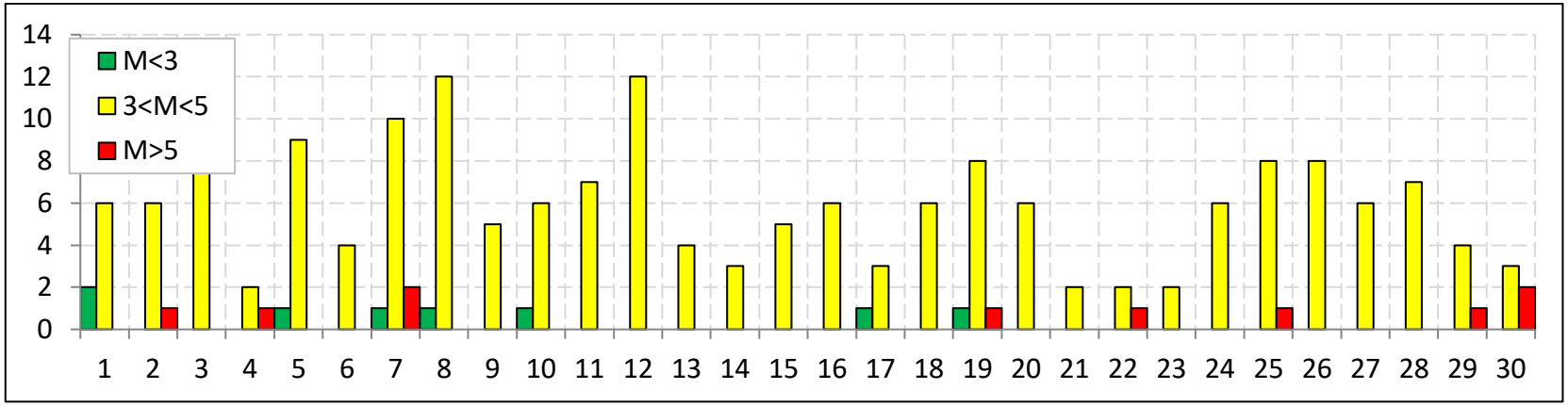
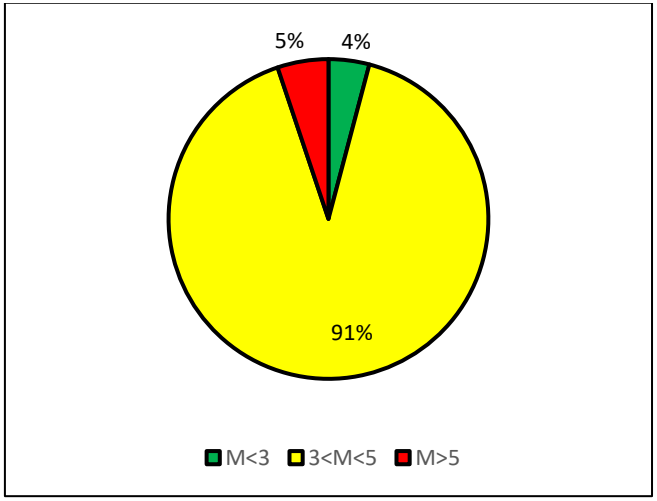
Tabel 12. Rekapitulasi Gempabumi Berdasarkan Magnitudo
Bulan Juni 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	2	6	0	8	0	0
2	0	6	1	7	0	0
3	0	8	0	8	0	0
4	0	2	1	3	0	0
5	1	9	0	10	0	0
6	0	4	0	4	0	0
7	1	10	2	13	1	0
8	1	12	0	13	0	0
9	0	5	0	5	1	0
10	1	6	0	7	0	0
11	0	7	0	7	0	0
12	0	12	0	12	0	0
13	0	4	0	3	0	0
14	0	3	0	3	0	0
15	0	5	0	5	0	0
16	0	6	0	6	0	0
17	1	3	0	4	0	0
18	0	6	0	6	0	0
19	1	8	1	10	1	0
20	0	6	0	6	0	0
21	0	2	0	2	0	0
22	0	2	1	3	1	0
23	0	2	0	2	0	0
24	0	6	0	6	0	0
25	0	8	1	9	0	0
26	0	8	0	8	0	0
27	0	6	0	6	0	0
28	0	7	0	7	0	0
29	0	4	1	5	0	0
30	0	3	2	5	2	0
Jumlah gempa	8	176	10	194	6	0
Jumlah gempa seluruhnya						

Histogram 11. Gempabumi Berdasarkan Magnitudo
Bulan Juni 2016



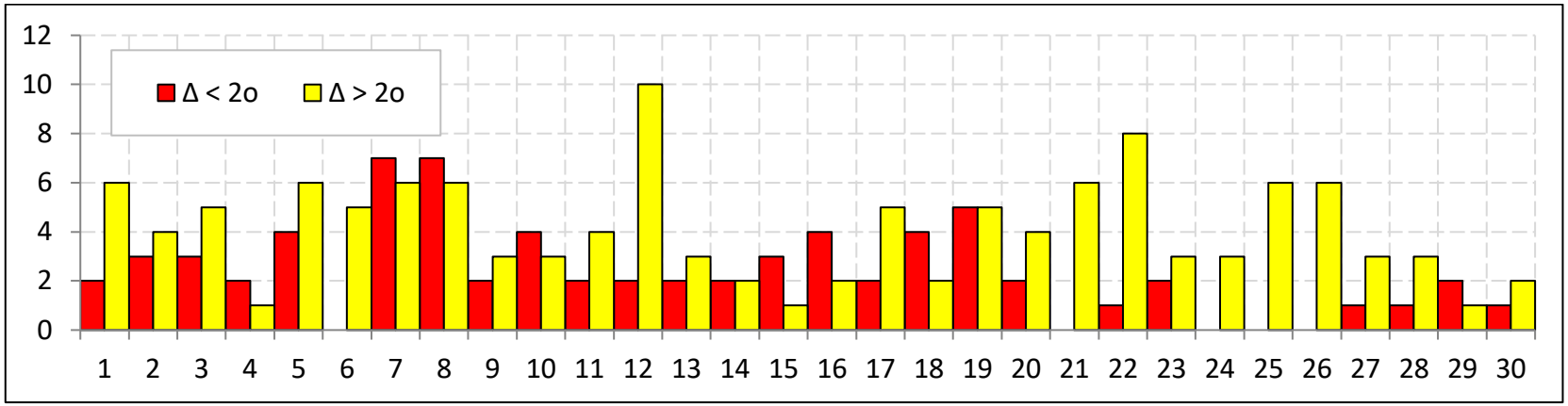
Persentase 13. Gempabumi Berdasarkan Magnitudo
Bulan Juni 2016



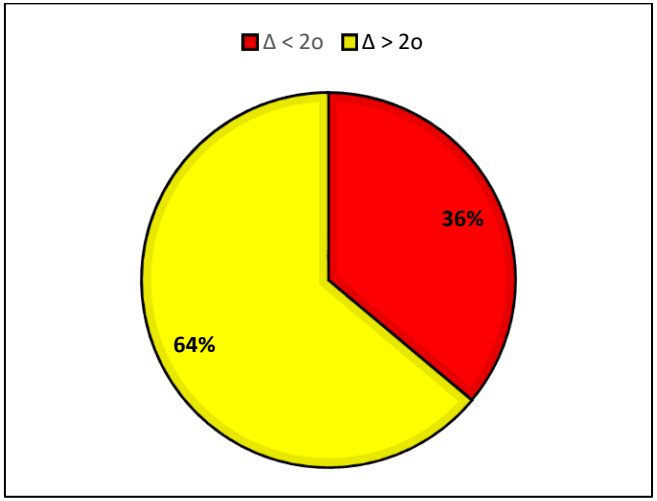
Tabel 13. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan Juni 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/05/2016	2	6	8	-
02/05/2016	3	4	7	-
03/05/2016	3	5	8	-
04/05/2016	2	1	3	-
05/05/2016	4	6	10	-
06/05/2016	0	5	5	-
07/05/2016	7	6	13	-
08/05/2016	7	6	13	-
09/05/2016	2	3	5	-
10/05/2016	4	3	7	-
11/05/2016	2	4	6	-
12/05/2016	2	10	12	-
13/05/2016	2	3	5	-
14/05/2016	2	2	4	-
15/05/2016	3	1	4	-
16/05/2016	4	2	6	-
17/05/2016	2	5	7	-
18/05/2016	4	2	6	-
19/05/2016	5	5	10	-
20/05/2016	2	4	6	-
21/05/2016	0	6	6	-
22/05/2016	1	8	9	-
23/05/2016	2	3	5	-
24/05/2016	0	3	3	-
25/05/2016	0	6	6	-
26/05/2016	0	6	6	-
27/05/2016	1	3	4	-
28/05/2016	1	3	4	-
29/05/2016	2	1	3	-
30/05/2016	1	2	3	-
Jumlah gempa	70	24	194	-
Jumlah gempa seluruhnya				

Histogram 12. Gempabumi Berdasarkan Jarak
Bulan Juni 2016



Persentase 14. Gempabumi Berdasarkan Jarak
Bulan Juni 2016



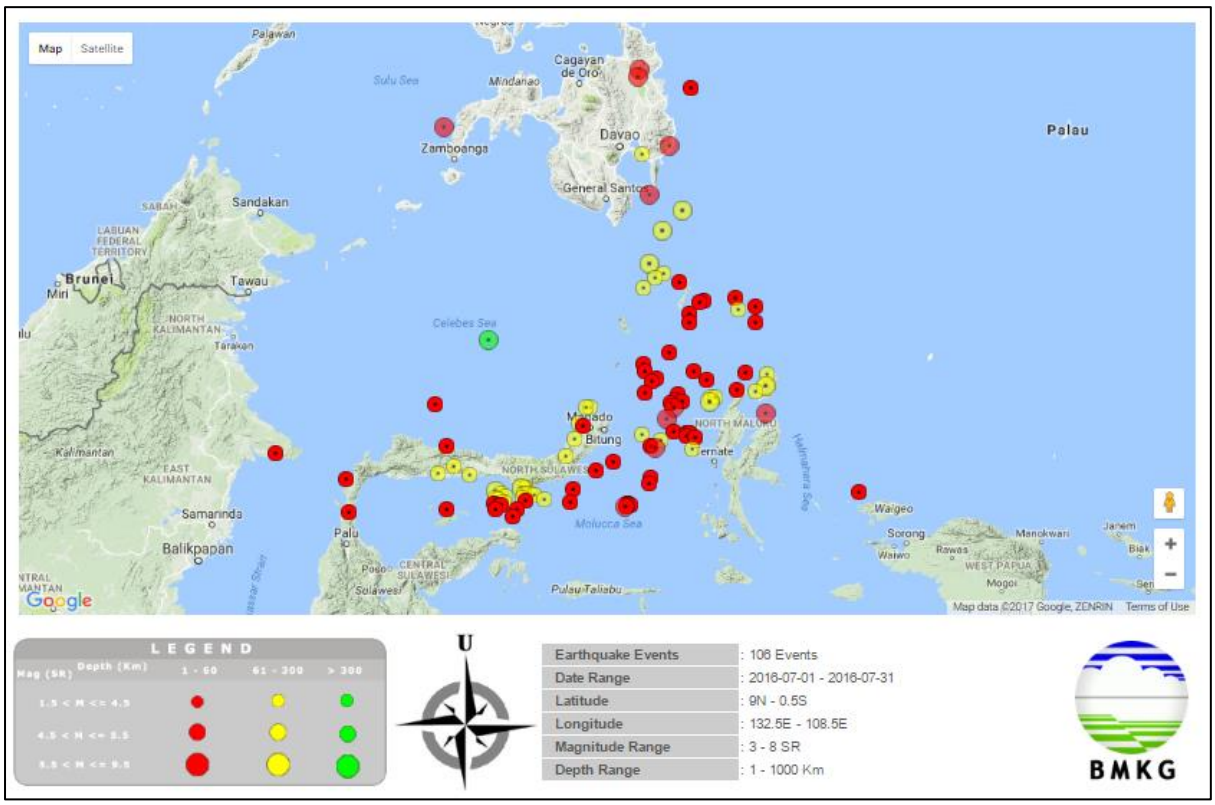
Data Gempabumi Bulan Juli 2016

No	Tanggal	Waktu (UTC)	Episenter		Kedalaman (Km)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/07/2016	03:50:16	-0.26	122.98	29	3.0	-	-	-	Minahassa Peninsula, Sulawesi
2	01/07/2016	06:25:50	1.13	126.82	28	3.7	-	-	-	Northern Molucca Sea
3	01/07/2016	06:48:00	1.10	126.98	16	4.3	0.317	0.468	0.403	Northern Molucca Sea
4	01/07/2016	12:26:35	1.52	122.68	10	2.9	-	-	-	Minahassa Peninsula, Sulawesi
5	01/07/2016	12:33:02	2.82	126.45	24	3.4	-	-	-	Northern Molucca Sea
6	01/07/2016	13:36:33	0.33	121.97	178	2.1	-	-	-	Minahassa Peninsula, Sulawesi
7	01/07/2016	13:47:46	0.84	120.55	10	2.4	-	-	-	Minahassa Peninsula, Sulawesi
8	01/07/2016	17:02:29	0.37	122.19	109	2.5	-	-	-	Minahassa Peninsula, Sulawesi
9	01/07/2016	17:47:32	1.33	124.71	53	4.2	2.769	7.1385	4.690	Minahassa Peninsula, Sulawesi
10	01/07/2016	17:47:48	2.13	128.42	76	4.7	-	-	-	Halmahera, Indonesia
11	02/07/2016	01:22:23	-0.21	123.08	96	3.1	-	-	-	Minahassa Peninsula, Sulawesi
12	02/07/2016	04:56:44	-0.10	123.12	123	3.0	-	-	-	Minahassa Peninsula, Sulawesi
13	02/07/2016	22:25:59	1.96	126.44	10	3.7	0.245	0.172	0.203	Northern Molucca Sea
14	03/07/2016	03:45:12	0.86	126.93	112	3.3	-	-	-	Northern Molucca Sea
15	03/07/2016	05:18:37	1.10	125.78	16	4.0	-	-	-	Northern Molucca Sea
16	03/07/2016	05:32:35	0.38	121.75	136	3.0	-	-	-	Minahassa Peninsula, Sulawesi
17	03/07/2016	10:09:03	3.46	126.87	10	3.7	-	-	-	Talaud Islands, Indonesia
18	03/07/2016	13:13:23	0.38	122.00	163	2.6	-	-	-	Minahassa Peninsula, Sulawesi
19	03/07/2016	14:48:59	2.25	126.11	29	4.0	0.113	0.208	0.186	Northern Molucca Sea
20	03/07/2016	15:18:42	0.36	122.74	28	2.9	-	-	-	Minahassa Peninsula, Sulawesi
21	04/07/2016	12:16:40	2.07	127.83	18	4.5	0.278	0.249	0.310	Northern Molucca Sea; Pusat gempa berada dilaut 64km Baratlaut HalmaheraUTara-MALUT, MALUKU UTARA; dirasakan di Galela (3 MMI)
22	04/07/2016	14:55:09	0.07	123.54	151	4.1	-	-	-	Minahassa Peninsula, Sulawesi
23	04/07/2016	20:33:07	2.02	125.98	10	3.7	-	-	-	Talaud Islands, Indonesia
24	05/07/2016	04:39:25	1.80	127.29	102	4.9	0.319	0.593	0.689	Halmahera, Indonesia
25	05/07/2016	05:23:08	4.84	125.93	99	4.3	-	-	-	Talaud Islands, Indonesia
26	05/07/2016	07:39:51	0.73	120.68	10	4.4	-	-	-	Minahassa Peninsula, Sulawesi
27	05/07/2016	08:52:55	-0.25	125.60	18	3.8	-	-	-	Southern Molucca Sea
28	05/07/2016	09:21:24	-0.24	125.62	10	4.0	-	-	-	Southern Molucca Sea
29	05/07/2016	10:52:08	-0.28	125.61	21	4.1	-	-	-	Southern Molucca Sea
30	05/07/2016	11:18:05	-0.31	125.59	48	4.4	-	-	-	Southern Molucca Sea
31	05/07/2016	11:48:55	-0.33	125.55	43	4.6	-	-	-	Southern Molucca Sea
32	05/07/2016	19:31:45	2.05	128.21	187	4.4	-	-	-	Halmahera, Indonesia
33	06/07/2016	02:10:02	0.53	122.06	66	3.8	-	-	-	Minahassa Peninsula, Sulawesi
34	06/07/2016	06:10:26	1.21	126.55	10	4.3	0.2645	0.246	0.271	Northern Molucca Sea
35	06/07/2016	15:51:07	1.09	121.73	10	2.3	-	-	-	Minahassa Peninsula, Sulawesi
36	06/07/2016	16:04:20	-0.33	122.94	13	2.7	-	-	-	Minahassa Peninsula, Sulawesi
37	06/07/2016	21:00:48	7.01	126.48	58	5.1	-	-	-	Mindanao, Philippines
38	07/07/2016	02:42:38	-0.27	123.04	53	4.5	0.194	0.483	0.304	Minahassa Peninsula, Sulawesi
39	07/07/2016	13:44:09	-0.37	123.35	10	3.3	-	-	-	Minahassa Peninsula, Sulawesi
40	07/07/2016	23:51:58	3.85	127.09	41	4.0	-	-	-	Talaud Islands, Indonesia
41	08/07/2016	07:21:38	1.72	124.86	223	4.3	-	-	-	Minahassa Peninsula, Sulawesi
42	08/07/2016	15:23:22	0.26	120.62	10	3.5	-	-	-	Minahassa Peninsula, Sulawesi
43	08/07/2016	23:16:50	8.53	125.86	51	5.3	-	-	-	Mindanao, Philippines
44	09/07/2016	06:20:39	-0.03	121.76	169	2.3	-	-	-	Minahassa Peninsula, Sulawesi
45	09/07/2016	06:51:53	4.15	125.94	134	4.3	-	-	-	Talaud Islands, Indonesia
46	09/07/2016	07:27:40	5.27	125.94	111	4.7	-	-	-	Mindanao, Philippines
47	09/07/2016	10:14:58	0.73	125.94	198	3.4	-	-	-	Minahassa Peninsula, Sulawesi
48	09/07/2016	15:51:43	1.41	125.94	177	3.5	-	-	-	Minahassa Peninsula, Sulawesi
49	10/07/2016	05:17:50	4.36	125.94	172	4.3	-	-	-	Talaud Islands, Indonesia
50	10/07/2016	05:27:57	1.81	125.94	31	4.3	-	-	-	Northern Molucca Sea
51	10/07/2016	05:37:43	8.39	125.94	38	4.8	-	-	-	Mindanao, Philippines
52	10/07/2016	05:44:58	1.45	125.94	16	2.8	-	-	-	Minahassa Peninsula, Sulawesi
53	10/07/2016	11:28:45	1.94	125.94	87	4.1	-	-	-	Halmahera, Indonesia
54	10/07/2016	13:06:29	1.06	125.94	65	3.0	-	-	-	Northern Molucca Sea
55	11/07/2016	07:38:17	-0.20	125.94	113	2.7	-	-	-	Minahassa Peninsula, Sulawesi
56	11/07/2016	16:18:36	0.43	125.94	27	3.2	-	-	-	Minahassa Peninsula, Sulawesi
57	11/07/2016	22:56:10	3.95	125.94	29	4.4	-	-	-	Talaud Islands, Indonesia
58	12/07/2016	07:49:39	1.77	125.94	18	3.4	-	-	-	Minahassa Peninsula, Sulawesi
59	12/07/2016	09:39:12	-0.24	125.94	15	3.2	-	-	-	Minahassa Peninsula, Sulawesi
60	12/07/2016	11:54:25	3.35	125.90	21	4.0	-	-	-	Talaud Islands, Indonesia

61	12/07/2016	14:14:59	1.89	125.94	10	2.8	-	-	-	Minahassa Peninsula, Sulawesi
62	12/07/2016	16:25:11	1.46	125.94	31	4.9	-	-	-	Northern Molucca Sea
63	12/07/2016	17:29:52	5.68	125.94	93	4.6	-	-	-	Mindanao, Philippines
64	12/07/2016	18:47:03	3.10	126.43	10	3.5	-	-	-	Talaud Islands, Indonesia
65	12/07/2016	20:35:40	0.50	126.64	27	3.8	0.101	0.095	0.107	Northern Molucca Sea
66	12/07/2016	23:04:17	3.44	125.94	23	3.9	-	-	-	North of Halmahera, Indonesia
67	13/07/2016	06:53:28	0.81	125.94	70	2.4	-	-	-	Minahassa Peninsula, Sulawesi
68	13/07/2016	09:13:06	1.56	125.94	55	4.6	0.130	0.063	0.117	Halmahera, Indonesia
69	13/07/2016	12:17:36	0.35	125.94	103	3.0	-	-	-	Minahassa Peninsula, Sulawesi
70	13/07/2016	19:37:32	0.06	125.94	30	3.9	-	-	-	Minahassa Peninsula, Sulawesi
71	13/07/2016	23:42:26	-0.17	125.94	11	2.8	-	-	-	Minahassa Peninsula, Sulawesi
72	14/07/2016	16:25:20	1.17	125.94	70	3.5	-	-	-	Northern Molucca Sea
73	14/07/2016	21:35:27	4.62	125.94	105	4.7	-	-	-	Talaud Islands, Indonesia
74	15/07/2016	04:21:56	2.31	125.94	38	3.7	-	-	-	Northern Molucca Sea
75	15/07/2016	04:32:45	1.81	127.00	93	3.9	0.045	0.039	0.037	Halmahera, Indonesia
76	15/07/2016	06:25:53	0.32	121.70	19	2.5	-	-	-	Minahassa Peninsula, Sulawesi
77	15/07/2016	07:54:02	0.91	125.94	10	2.8	-	-	-	Minahassa Peninsula, Sulawesi
78	15/07/2016	09:55:39	-0.35	125.94	26	3.0	-	-	-	Minahassa Peninsula, Sulawesi
79	15/07/2016	10:08:30	-0.04	125.94	128	2.9	-	-	-	Minahassa Peninsula, Sulawesi
80	16/07/2016	08:12:59	3.89	125.94	37	4.3	-	-	-	Talaud Islands, Indonesia
81	16/07/2016	15:35:46	-0.20	125.94	14	3.7	-	-	-	Southern Molucca Sea
82	16/07/2016	15:58:44	2.61	125.94	12	4.0	-	-	-	Talaud Islands, Indonesia
83	16/07/2016	16:01:36	3.05	125.94	493	4.5	-	-	-	*Celebes Sea*
84	16/07/2016	18:35:17	1.87	125.94	22	4.0	-	-	-	Northern Molucca Sea
85	16/07/2016	22:25:55	1.68	125.94	43	4.9	0.069	0.090	0.083	Northern Molucca Sea
86	17/07/2016	04:12:29	-0.17	125.94	10	3.0	-	-	-	Minahassa Peninsula, Sulawesi
87	17/07/2016	06:56:58	-0.11	125.94	138	4.3	-	-	-	Minahassa Peninsula, Sulawesi
88	17/07/2016	07:29:09	4.26	125.94	13	4.4	0.205	0.111	0.134	Talaud Islands, Indonesia
89	17/07/2016	07:57:33	2.27	125.94	10	3.5	-	-	-	Northern Molucca Sea
90	17/07/2016	08:46:37	-0.17	125.94	236	2.4	-	-	-	Minahassa Peninsula, Sulawesi
91	17/07/2016	08:56:59	-0.25	125.94	10	2.6	-	-	-	Minahassa Peninsula, Sulawesi
92	17/07/2016	10:22:35	3.62	125.94	10	3.6	-	-	-	Talaud Islands, Indonesia
93	17/07/2016	10:54:08	0.60	125.94	90	2.6	-	-	-	Minahassa Peninsula, Sulawesi
94	17/07/2016	14:51:55	-0.43	125.94	10	3.1	-	-	-	Minahassa Peninsula, Sulawesi
95	18/07/2016	04:05:40	0.61	125.94	29	3.7	-	-	-	Northern Molucca Sea
96	18/07/2016	11:22:36	0.47	125.94	74	2.8	-	-	-	Minahassa Peninsula, Sulawesi
97	18/07/2016	15:47:02	4.44	125.94	93	4.5	0.029	0.030	0.028	Talaud Islands, Indonesia
98	19/07/2016	04:46:26	-0.13	125.94	85	3.7	-	-	-	Minahassa Peninsula, Sulawesi
99	19/07/2016	12:13:51	-0.15	125.94	104	3.6	0.031	0.077	0.087	Minahassa Peninsula, Sulawesi
100	19/07/2016	14:22:47	6.87	125.94	63	4.1	-	-	-	Mindanao, Philippines
101	19/07/2016	23:52:50	0.28	125.94	10	4.1	-	-	-	Northern Molucca Sea
102	20/07/2016	03:58:31	0.00	125.94	174	5.2	-	-	-	Minahassa Peninsula, Sulawesi; Pusat gempa berada di 69 km BaratDaya Gorontalo, GORONTALO; dirasakan di Gorontalo (3 MMI) PGN = Info Gempa Mag:5.2 SR, 20-Jul-16 10:58:32 WIB, Lok:0.06 LS,122.90 BT (69 km BaratDaya GORONTALO-GORONTALO), Kedlmn:154 Km ::BMKG
103	21/07/2016	02:57:27	2.45	125.94	10	3.7	-	-	-	Northern Molucca Sea
104	21/07/2016	05:45:26	0.09	125.94	27	2.6	-	-	-	Northern Molucca Sea
105	21/07/2016	06:50:56	0.92	125.94	27	3.6	-	-	-	Northern Molucca Sea
106	21/07/2016	07:19:49	-0.28	125.94	10	3.7	-	-	-	Southern Molucca Sea
107	21/07/2016	07:32:27	1.83	125.94	10	3.0	-	-	-	Northern Molucca Sea
108	21/07/2016	15:34:50	0.25	125.94	45	3.5	0.176	0.125	0.144	Minahassa Peninsula, Sulawesi
109	21/07/2016	17:46:38	2.53	126.02	10	4.3	-	-	-	Northern Molucca Sea
110	22/07/2016	04:01:56	3.76	125.94	10	4.4	-	-	-	North of Halmahera, Indonesia
111	22/07/2016	11:26:57	-0.03	125.94	150	2.9	-	-	-	Minahassa Peninsula, Sulawesi
112	22/07/2016	15:52:34	-0.22	125.94	27	2.9	-	-	-	Minahassa Peninsula, Sulawesi
113	22/07/2016	19:46:35	2.43	125.94	10	4.3	0.092	0.049	0.087	Halmahera, Indonesia
114	22/07/2016	20:57:35	2.46	128.07	107	3.9	-	-	-	Halmahera, Indonesia
115	23/07/2016	01:46:55	-0.02	125.94	18	3.1	-	-	-	Irian Jaya Region, Indonesia
116	23/07/2016	07:27:45	0.87	125.94	10	4.6	-	-	-	Northern Molucca Sea
117	23/07/2016	11:26:45	1.98	125.94	10	3.9	-	-	-	Northern Molucca Sea
118	23/07/2016	21:30:06	1.19	125.94	20	4.4	0.174	0.140	0.102	Northern Molucca Sea
119	23/07/2016	23:53:53	-0.36	125.94	10	4.3	-	-	-	Minahassa Peninsula, Sulawesi
120	24/07/2016	06:49:02	0.33	124.08	184	3.6	-	-	-	Southern Molucca Sea
121	24/07/2016	04:30:06	1.16	126.84	18	4.6	-	-	-	Halmahera, Indonesia; Pusat gempa berada dilaut 86 km BaratDaya Halmahera Barat,

										Malut; dirasakan di Ternate (2 MMI).
122	24/07/2016	17:14:20	8.20	125.94	48	4.5	-	-	-	Mindanao, Philippines
123	24/07/2016	20:47:52	1.20	126.80	30	3.7	-	-	-	Northern Molucca Sea
124	24/07/2016	22:24:25	3.80	126.60	10	3.7	-	-	-	Talaud Islands, Indonesia
125	25/07/2016	00:31:23	-0.16	125.94	64	3.8	-	-	-	Minahassa Peninsula, Sulawesi
126	25/07/2016	01:22:48	-0.04	125.94	99	3.6	-	-	-	Minahassa Peninsula, Sulawesi
127	25/07/2016	01:26:06	2.45	125.94	25	3.4	-	-	-	Talaud Islands, Indonesia
128	25/07/2016	03:09:51	0.03	125.94	165	2.4	-	-	-	Minahassa Peninsula, Sulawesi
129	25/07/2016	04:33:06	1.33	125.94	12	2.9	-	-	-	Minahassa Peninsula, Sulawesi
130	25/07/2016	05:54:56	2.39	125.94	220	4.3	0.339	0.194	0.338	Halmahera, Indonesia
131	25/07/2016	15:05:38	7.49	125.94	19	4.8	-	-	-	Mindanao, Philippines
132	25/07/2016	16:39:59	4.33	124.97	10	3.9	-	-	-	Celebes Sea
133	25/07/2016	16:54:26	0.40	124.27	10	4.1	-	-	-	Southern Molucca Sea
134	25/07/2016	18:28:34	3.74	126.20	89	4.0	-	-	-	Talaud Islands, Indonesia
135	25/07/2016	19:15:40	0.31	125.94	163	2.4	-	-	-	Minahassa Peninsula, Sulawesi
136	25/07/2016	20:16:39	0.15	121.66	45	4.3	-	-	-	Minahassa Peninsula, Sulawesi
137	26/07/2016	14:29:29	8.31	126.03	9.5	5.1	0.111	0.064	0.058	Northern Molucca Sea
138	27/07/2016	9:53:34	1.09	124.52	218	3.8	-	-	-	Minahassa Peninsula, Sulawesi
139	27/07/2016	18:49:53	3.71	127.88	162	4.1	0.317	0.468	0.403	Talaud Islands, Indonesia
140	27/07/2016	19:16:52	1.72	124.77	220	4.3	-	-	-	Minahassa Peninsula, Sulawesi
141	28/07/2016	0:36:10	0.94	121.93	19	3.1	-	-	-	Minahassa Peninsula, Sulawesi
142	28/07/2016	1:49:33	-0.22	122.86	26	2.9	-	-	-	Minahassa Peninsula, Sulawesi
143	28/07/2016	23:39:30	-0.05	123.49	123	3.6	-	-	-	Minahassa Peninsula, Sulawesi
144	28/07/2016	23:56:23	1.94	127.4	89	3.9	-	-	-	Halmahera, Indonesia
145	29/07/2016	8:29:27	0.03	123.45	147	5.3	2.769	7.138	4.690	Minahassa Peninsula, Sulawesi; Pusat gempa berada di laut 63 km barat daya BolaangMongondowSel, Sulawesi Utara; dirasakan di Gorontalo, Puhowato, Limboto (2 MMI) PGN = Info Gempa Mag:5.4 SR, 29-Jul-16 15:29:27 WIB, Lok:0.04 LS,123.48 BT (63 km BaratDaya BOLAANGMONGONDOWSEL-SULUT), Kedlmn:127 Km::BMKG
146	29/07/2016	15:58:32	-0.06	123.72	125	3.4	-	-	-	Minahassa Peninsula, Sulawesi
147	29/07/2016	16:34:39	-0.27	119.86	10	2.9	-	-	-	Minahassa Peninsula, Sulawesi
148	29/07/2016	17:35:22	0.77	118.44	24	3.3	-	-	-	Borneo
149	29/07/2016	19:44:34	1.18	126.81	41	4.5	0.245	0.172	0.203	Northern Molucca Sea
150	29/07/2016	22:36:26	0.16	126.04	10	3.5	-	-	-	Northern Molucca Sea
151	30/07/2016	5:25:25	-0.1	122.85	10	2.7	-	-	-	Minahassa Peninsula, Sulawesi
152	30/07/2016	5:47:13	0.54	121.11	73	2.5	-	-	-	Minahassa Peninsula, Sulawesi
153	30/07/2016	6:59:11	1.18	126.87	34	3.9	-	-	-	Northern Molucca Sea
154	30/07/2016	7:12:20	1.4	121.93	10	2.6	-	-	-	Minahassa Peninsula, Sulawesi
155	30/07/2016	10:45:04	-0.05	123.04	146	3.7	0.113	0.208	0.186	Minahassa Peninsula, Sulawesi
156	30/07/2016	21:03:16	6.01	126.06	28	4.9	0.086	0.066	0.064	Mindanao, Philippines
157	31/07/2016	21:41:53	-0.5	123.28	12	3.8	0.279	0.249	0.310	Minahassa Peninsula, Sulawesi

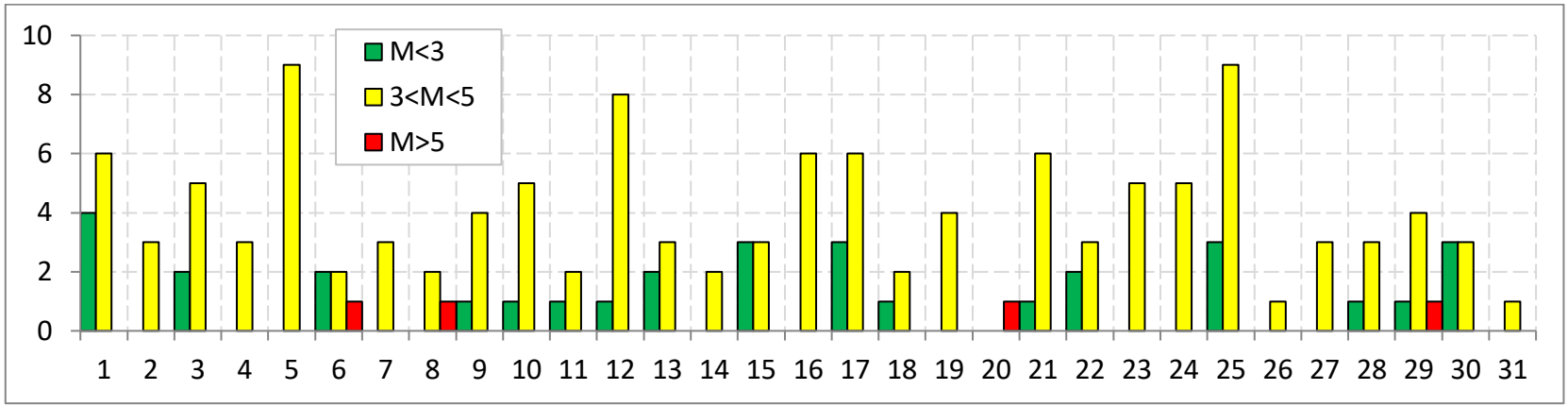
Peta 8. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Juli 2016



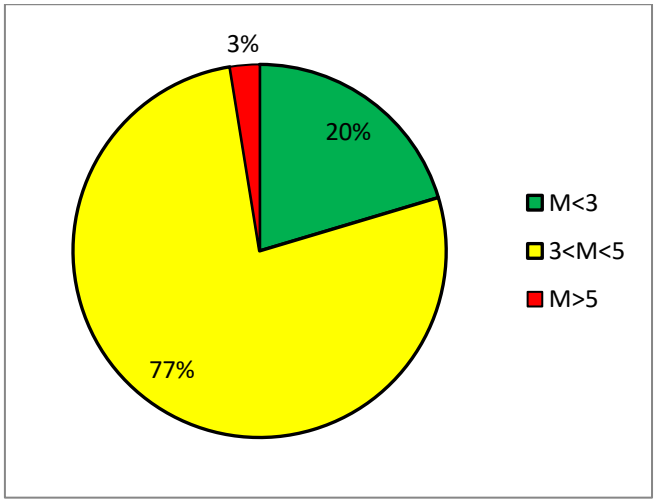
Tabel 14. Rekapitulasi Gempabumi Berdasarkan Magnitudo
Bulan Juli 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	4	6	0	10	0	0
2	0	3	0	3	0	0
3	2	5	0	7	0	0
4	0	3	0	3	1	0
5	0	9	0	9	0	0
6	2	2	1	5	0	0
7	0	3	0	3	0	0
8	0	2	1	3	0	0
9	1	4	0	5	0	0
10	1	5	0	6	0	0
11	1	2	0	3	0	0
12	1	8	0	9	0	0
13	2	3	0	5	0	0
14	0	2	0	2	0	0
15	3	3	0	6	0	0
16	0	6	0	6	0	0
17	3	6	0	9	0	0
18	1	2	0	3	0	0
19	0	4	0	4	0	0
20	0	0	1	1	1	0
21	1	6	0	7	0	0
22	2	3	0	5	0	0
23	0	5	0	5	0	0
24	0	5	0	5	1	0
25	3	9	0	12	0	0
26	0	1	0	1	0	0
27	0	3	0	3	0	0
28	1	3	0	4	0	0
29	1	4	1	6	1	0
30	3	3	0	6	0	0
31	0	1	0	1	0	0
Jumlah gempa	32	121	4	157	4	0
Jumlah gempa seluruhnya						

Histogram 13. Gempabumi Berdasarkan Magnitudo
Bulan Juli 2016



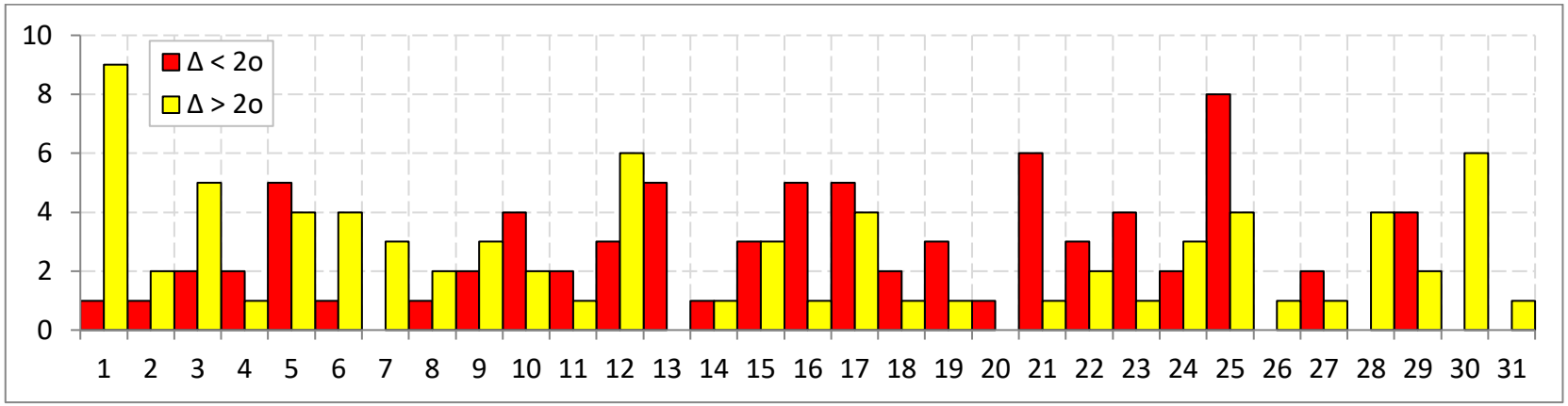
Persentase 15. Gempabumi Berdasarkan Magnitudo
Bulan Juli 2016



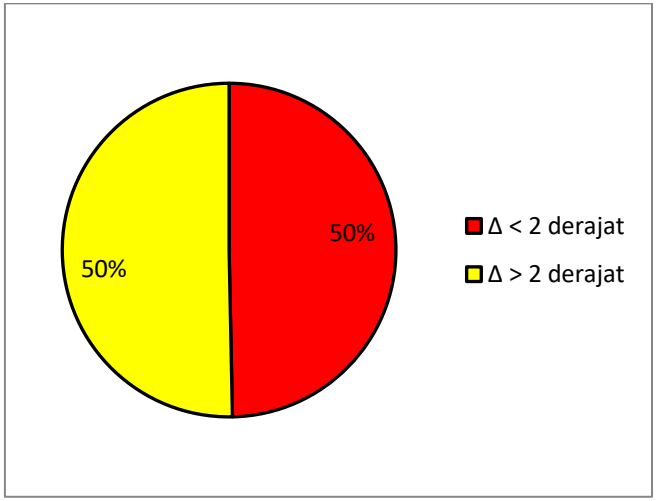
Tabel 15. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan Juli 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/07/2016	1	9	10	-
02/07/2016	1	2	3	-
03/07/2016	2	5	7	-
04/07/2016	2	1	3	-
05/07/2016	5	4	9	-
06/07/2016	1	4	5	-
07/07/2016	0	3	3	-
08/07/2016	1	2	3	-
09/07/2016	2	3	5	-
10/07/2016	4	2	6	-
11/07/2016	2	1	3	-
12/07/2016	3	6	9	-
13/07/2016	5	0	5	-
14/07/2016	1	1	2	-
15/07/2016	3	3	6	-
16/07/2016	5	1	6	-
17/07/2016	5	4	9	-
18/07/2016	2	1	3	-
19/07/2016	3	1	4	
20/07/2016	1	0	1	-
21/07/2016	6	1	7	-
22/07/2016	3	2	5	-
23/07/2016	4	1	5	-
24/07/2016	2	3	5	-
25/07/2016	8	4	12	-
26/07/2016	0	1	1	-
27/07/2016	2	1	3	-
28/07/2016	0	4	4	-
29/07/2016	4	2	6	-
30/07/2016	0	6	6	-
31/07/2016	0	1	1	
Jumlah gempa	78	79	157	-
Jumlah gempa seluruhnya				

Histogram 14. Gempabumi Berdasarkan Jarak
Bulan Juli 2016



Persentase 16. Gempabumi Berdasarkan Jarak
Bulan Juli 2016



Data Gempabumi Bulan Agustus 2016

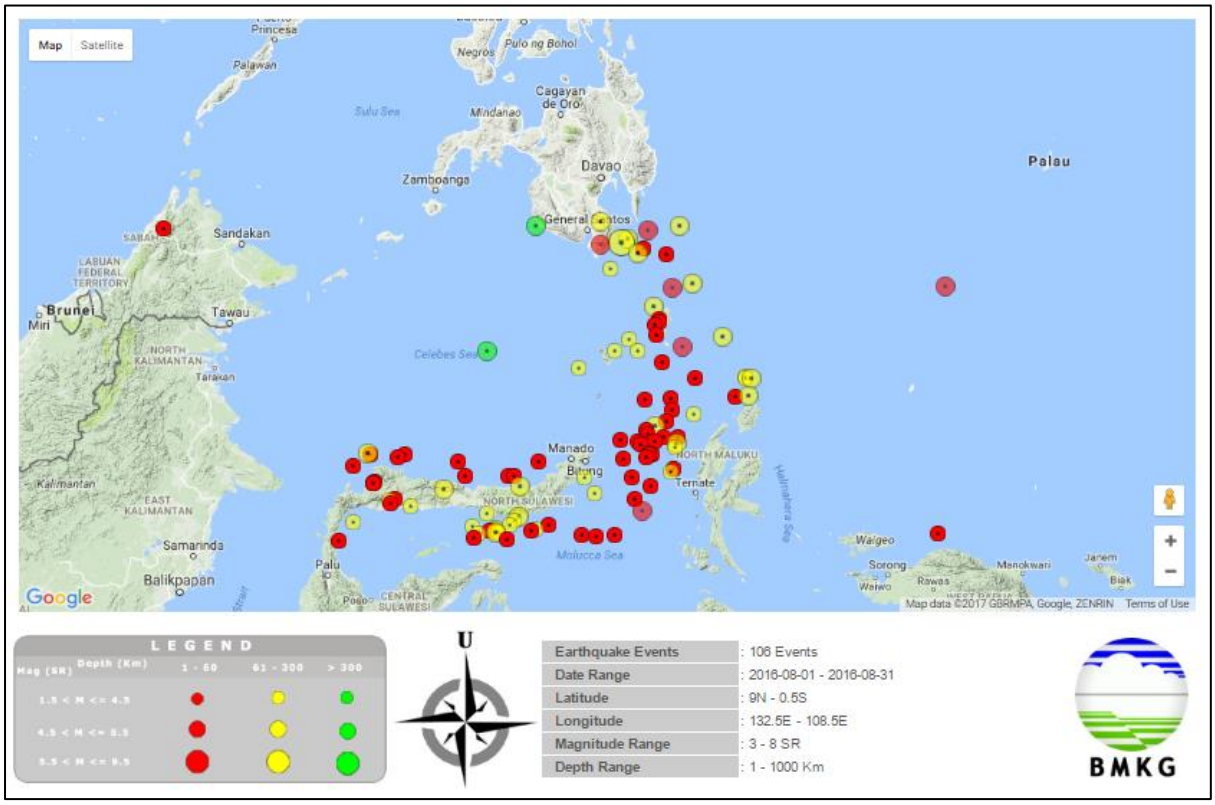
NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (Km)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/08/2016	01:13:22	3.46	123.13	497	4.7	-	-	-	Celebes Sea
2	01/08/2016	20:15:44	-0.15	121.73	12	2.9	-	-	-	Minahassa Peninsula, Sulawesi
3	01/08/2016	05:18:52	2.62	126.3	10	4.2	0.00027	0.00016	0.00015	Northern Molucca Sea
4	01/08/2016	18:20:36	2.06	126.7	10	3.6	-	-	-	Northern Molucca Sea
5	01/08/2016	21:38:20	0.81	125.38	80	3.6	-	-	-	Northern Molucca Sea
6	02/08/2016	01:40:31	-0.16	124.03	20	3.7	-	-	-	Southern Molucca Sea
7	02/08/2016	13:04:16	3.68	126.66	10	3.8	-	-	-	Talaud Islands, Indonesia
8	02/08/2016	13:35:04	2.98	127.33	10	4.2	-	-	-	Northern Molucca Sea
9	02/08/2016	06:39:37	-0.27	125.34	12	4.1	-	-	-	Southern Molucca Sea
10	02/08/2016	13:35:07	2.96	127.37	48	4.2	-	-	-	Northern Molucca Sea
11	02/08/2016	21:13:51	1.39	126.42	46	3.7	-	-	-	Northern Molucca Sea
12	02/08/2016	21:41:47	0.27	122.25	120	2.2	-	-	-	Minahassa Peninsula, Sulawesi
13	02/08/2016	21:43:32	3.55	127.1	21	4.6	-	-	-	Talaud Islands, Indonesia
14	03/08/2016	08:03:09	1.1	126.92	15	3.2	-	-	-	Northern Molucca Sea
15	03/08/2016	10:16:30	1.14	120.68	10	2.6	-	-	-	Minahassa Peninsula, Sulawesi
16	03/08/2016	10:30:23	1.74	127.01	11	3.9	-	-	-	Halmahera, Indonesia
17	03/08/2016	19:08:34	1.31	125.91	51	4	-	-	-	Northern Molucca Sea
18	03/08/2016	22:03:03	-0.07	122.82	121	3	-	-	-	Minahassa Peninsula, Sulawesi
19	04/08/2016	00:39:58	-0.25	125.07	21	3.7	-	-	-	Southern Molucca Sea
20	04/08/2016	05:33:07	0.2	123.13	181	3	-	-	-	Minahassa Peninsula, Sulawesi
21	04/08/2016	11:49:46	0.23	126.29	58	4.8	0.00038	0.00035	0.00054	Northern Molucca Sea
22	05/08/2016	00:02:12	5.91	126.42	10	4.7	-	-	-	Mindanao, Philippines
23	05/08/2016	08:26:45	1.19	122.6	7	2.7	-	-	-	Minahassa Peninsula, Sulawesi
24	05/08/2016	13:17:03	2.97	128.41	199	4.3	-	-	-	Halmahera, Indonesia
25	05/08/2016	13:57:34	0.69	122.2	10	3.6	-	-	-	Minahassa Peninsula, Sulawesi
26	05/08/2016	17:58:08	3.76	127.92	73	4.6	0.00005	0.00006	0.00005	Talaud Islands, Indonesia
27	05/08/2016	18:04:01	0.9	124.13	10	3.7	-	-	-	Southern Molucca Sea
28	05/08/2016	23:20:02	1.55	126.07	8.7	3.9	-	-	-	Northern Molucca Sea
29	06/08/2016	00:56:44	-0.21	132.32	10	3.3	-	-	-	Irian Jaya Region, Indonesia
30	06/08/2016	03:29:28	1.74	126.74	30	3.8	0.00037	0.00019	0.00023	Northern Molucca Sea
31	06/08/2016	09:08:23	6.1	125.44	83	5.3	-	-	-	Mindanao, Philippines
32	06/08/2016	14:21:52	2.23	127.34	74	3.8	-	-	-	Northern Molucca Sea
33	06/08/2016	20:54:10	1.16	120.41	10	3.6	-	-	-	Minahassa Peninsula, Sulawesi
34	07/08/2016	02:43:11	0.5	121.19	39	2.7	-	-	-	Minahassa Peninsula, Sulawesi
35	07/08/2016	14:03:03	3.82	126.58	11	3.6	0.00002	0.00001	0.00001	Talaud Islands, Indonesia
36	07/08/2016	14:50:16	1.44	126.42	15	3.5	-	-	-	Northern Molucca Sea
37	07/08/2016	14:56:40	4.09	126.64	29	4	-	-	-	Talaud Islands, Indonesia
38	07/08/2016	16:12:03	3.16	125.01	245	4	-	-	-	Talaud Islands, Indonesia
39	07/08/2016	17:18:19	0.06	123.67	108	4.1	-	-	-	Minahassa Peninsula, Sulawesi
40	07/08/2016	18:38:14	1.35	121.32	19	3.7	-	-	-	Minahassa Peninsula, Sulawesi
41	07/08/2016	22:01:07	0.13	122.26	153	2.8	-	-	-	Minahassa Peninsula, Sulawesi
42	07/08/2016	22:25:29	1.89	126.38	17	3.8	-	-	-	Northern Molucca Sea
43	08/08/2016	01:05:57	0.41	121.81	190	2.5	-	-	-	Minahassa Peninsula, Sulawesi
44	08/08/2016	04:36:48	0.36	121.96	175	2.8	-	-	-	Minahassa Peninsula, Sulawesi

45	08/08/2016	17:17:53	0.12	123.75	117.6	2.8	-	-	-	Minahassa Peninsula, Sulawesi
46	08/08/2016	17:27:03	0.57	124.13	10	3.9	0.00019	0.00009	0.00009	Southern Molucca Sea
47	08/08/2016	11:10:02	-0.4	123.49	10	2.8	-	-	-	Minahassa Peninsula, Sulawesi
48	08/08/2016	11:35:56	-0.19	123.07	10	2.6	-	-	-	Minahassa Peninsula, Sulawesi
49	09/08/2016	05:00:39	1.65	126.54	25	3.3	-	-	-	Northern Molucca Sea
50	09/08/2016	08:50:36	1.39	121.46	13	3.2	-	-	-	Minahassa Peninsula, Sulawesi
51	09/08/2016	10:19:40	0.65	122.25	93	4.7	*0.00146*	*0.00248*	*0.00233*	*Minahassa Peninsula, Sulawesi. Pusat gempa berada 16km tenggara Boalemo-Gorontalo; dirasakan di Gorontalo II SIG-BMKG (II-III MMI)*
52	09/08/2016	11:27:40	0.1	123.78	140	4.9	-	-	-	Minahassa Peninsula, Sulawesi
53	09/08/2016	15:09:01	2.08	126.8	53	3.6	-	-	-	Northern Molucca Sea
54	09/08/2016	19:32:12	5.2	126.22	135.3	4.3	-	-	-	Mindanao, Philippines
55	09/08/2016	19:32:08	5.59	126.31	35	4.5	-	-	-	Mindanao, Philippines
56	10/08/2016	03:23:14	-0.12	123.27	132	4.3	-	-	-	Minahassa Peninsula, Sulawesi
57	10/08/2016	03:58:15	0.32	121.91	173	2.7	-	-	-	Minahassa Peninsula, Sulawesi
58	10/08/2016	04:06:59	5.59	125.87	130	5.6	0.00044	0.00058	0.00050	Mindanao, Philippines
59	10/08/2016	08:17:47	5.63	125.43	53	5.1	-	-	-	Mindanao, Philippines
60	10/08/2016	15:07:47	0.2	122.65	108	2.5	-	-	-	Minahassa Peninsula, Sulawesi
61	10/08/2016	15:38:48	-0.05	124.37	33	3.8	-	-	-	Southern Molucca Sea
62	10/08/2016	20:34:33	4.75	126.91	50	4.8	-	-	-	Talaud Islands, Indonesia
63	10/08/2016	21:52:55	2.91	128.52	222	4.7	-	-	-	Halmahera, Indonesia
64	11/08/2016	00:31:55	1.39	120.76	10	3.4	-	-	-	Minahassa Peninsula, Sulawesi
65	11/08/2016	01:06:26	1.38	120.69	64	4.6	*0.00012*	*0.00025*	*0.00018*	*Minahassa Peninsula, Sulawesi. Pusat gempa berada 53km Timur Laut TOLI-TOLI SULTENG; dirasakan di Toli-toli II SIG BMKG (III-IV MMI)*
66	11/08/2016	01:38:42	1.28	121.27	10	2.1	-	-	-	Minahassa Peninsula, Sulawesi
67	11/08/2016	17:31:42	0.53	122.5	141.5	3.2	-	-	-	Minahassa Peninsula, Sulawesi
68	11/08/2016	05:08:55	0.56	121.82	180	2.5	-	-	-	Minahassa Peninsula, Sulawesi
69	11/08/2016	05:17:19	0.95	123.55	11	3	-	-	-	Minahassa Peninsula, Sulawesi
70	11/08/2016	07:39:35	1.71	122.57	10	2.4	-	-	-	Minahassa Peninsula, Sulawesi
71	11/08/2016	20:07:19	5.45	126.78	10	4.4	-	-	-	Mindanao, Philippines
72	12/08/2016	12:00:45	-0.03	122.4	111	2.4	-	-	-	Minahassa Peninsula, Sulawesi
73	12/08/2016	18:58:15	-0.13	123.06	121	2.5	-	-	-	Minahassa Peninsula, Sulawesi
74	12/08/2016	21:35:48	0.4	121.15	10	4.1	0.00028	0.00042	0.00036	Minahassa Peninsula, Sulawesi
75	13/08/2016	08:19:39	-0.21	123.3	99	4.6	*0.00013*	*0.00049*	*0.00034*	*Minahassa Peninsula, Sulawesi. Pusat gempa berada 88km BaratDaya Bonebolango-Gorontalo; dirasakan di Gorontalo I SIG-BMKG (II-III MMI)*
76	14/08/2016	04:47:29	2.56	128.19	10	4.2	-	-	-	Halmahera, Indonesia
77	14/08/2016	05:46:04	0.76	126.47	10	3.1	-	-	-	Northern Molucca Sea
78	14/08/2016	09:16:55	0.72	123.79	269	4.7	-	-	-	Minahassa Peninsula, Sulawesi
79	14/08/2016	14:29:00	1.61	127	117	5	-	-	-	Northern Molucca Sea

										PGN = Info Gempa Mag:5.2 SR, 14-Aug-16 21:29:01 WIB, Lok:1.58 LU,126.92 BT (79 km BaratLaut HALMAHERABARAT-MALUT), Kedlmn:64 Km ::BMKG
80	14/08/2016	17:29:54	4.03	126.54	42	3.2	-	-	-	Talaud Islands, Indonesia
81	15/08/2016	05:28:14	5.76	126	101	4.8	0.00006	0.00008	0.00007	Mindanao, Philippines
82	15/08/2016	10:45:23	0.15	125.61	20	3.6	-	-	-	Southern Molucca Sea
83	15/08/2016	12:46:25	-0.17	123.31	149	3.5	-	-	-	Minahassa Peninsula, Sulawesi
84	15/08/2016	15:35:20	1.4	126.49	33	4.1	-	-	-	Northern Molucca Sea
85	16/08/2016	07:18:45	0.95	123.69	10	3.6	0.00000	0.00001	0.00001	Minahassa Peninsula, Sulawesi
86	17/08/2016	00:00:20	0.28	121.95	164	2.2	-	-	-	Minahassa Peninsula, Sulawesi
87	17/08/2016	01:11:44	-0.18	123.36	87	4.1	0.00089	0.00099	0.00011	Minahassa Peninsula, Sulawesi
88	17/08/2016	07:13:01	4.38	126.52	99	4.6	-	-	-	Talaud Islands, Indonesia
89	17/08/2016	18:50:22	1	123.7	415	3.6	-	-	-	Minahassa Peninsula, Sulawesi
90	17/08/2016	23:52:17	0.77	122.54	10	2.4	-	-	-	Minahassa Peninsula, Sulawesi
91	18/08/2016	00:02:44	-0.2	122.57	10	2.7	-	-	-	Minahassa Peninsula, Sulawesi
92	18/08/2016	04:43:41	0.34	121.56	130	3.4	-	-	-	Minahassa Peninsula, Sulawesi
93	18/08/2016	10:16:53	5.47	126.21	95	4.6	-	-	-	Mindanao, Philippines
94	18/08/2016	11:34:13	1.32	120.69	7.1	3.2	-	-	-	Minahassa Peninsula, Sulawesi
95	18/08/2016	16:34:13	0.85	121.77	32	1.9	-	-	-	Minahassa Peninsula, Sulawesi
96	18/08/2016	20:10:15	6	127.04	105	4.7	0.00003	0.00004	0.0005	Philippine Islands Region
97	18/08/2016	20:22:27	1.24	124.19	12	3.3	-	-	-	Minahassa Peninsula, Sulawesi
98	19/08/2016	01:28:47	0.01	120.39	69	3.5	-	-	-	Minahassa Peninsula, Sulawesi
99	19/08/2016	04:33:12	0.85	120.84	10	4.3	0.00003	0.00068	0.00008	Minahassa Peninsula, Sulawesi
100	19/08/2016	06:15:51	0.15	122.44	133	2.3	-	-	-	Minahassa Peninsula, Sulawesi
101	19/08/2016	08:24:10	-0.25	123.15	10	2.8	-	-	-	Minahassa Peninsula, Sulawesi
102	19/08/2016	09:48:52	0.81	120.82	10	3	-	-	-	Minahassa Peninsula, Sulawesi
103	19/08/2016	12:09:43	0.41	121.97	168	2.4	-	-	-	Minahassa Peninsula, Sulawesi
104	19/08/2016	13:18:59	-0.29	122.85	20	3.9	-	-	-	Minahassa Peninsula, Sulawesi
105	19/08/2016	21:06:06	0.97	122.69	44	4.1	-	-	-	Minahassa Peninsula, Sulawesi
106	20/08/2016	10:35:23	1.8	126.4	10	4.2	-	-	-	Northern Molucca Sea
107	20/08/2016	14:12:37	0.37	122.01	173	2.4	-	-	-	Minahassa Peninsula, Sulawesi
108	20/08/2016	14:16:20	-0.48	127.02	15	2.8	-	-	-	Halmahera, Indonesia
109	20/08/2016	21:37:52	0.39	119.6	101	2.6	-	-	-	Minahassa Peninsula, Sulawesi
110	21/08/2016	03:26:01	1.67	126.48	10	3.8	-	-	-	Northern Molucca Sea
111	21/08/2016	10:16:41	1.03	129.11	17.5	4.1	-	-	-	Halmahera, Indonesia
112	21/08/2016	14:58:45	0.26	128.98	750	3.4	0.00002	0.00002	0.00003	Halmahera, Indonesia
113	21/08/2016	16:00:50	-0.2	122.86	80	2.5	-	-	-	Minahassa Peninsula, Sulawesi
114	22/08/2016	05:08:41	0.46	121.12	78	3.4	-	-	-	Minahassa Peninsula, Sulawesi
115	22/08/2016	13:38:13	0.93	125.11	77	3	-	-	-	Northern Molucca Sea
116	22/08/2016	13:45:01	1.33	126.39	13	3.7	0.00009	0.00024	0.00018	Northern Molucca Sea
117	23/08/2016	03:38:27	1.68	125.85	55	4	0.00012	0.00024	0.00025	Northern Molucca Sea
118	23/08/2016	05:27:21	1.54	126.95	99	4.4	-	-	-	Northern Molucca Sea

119	23/08/2016	16:19:18	0.62	125.31	66	3.4	-	-	-	Northern Molucca Sea
120	23/08/2016	18:59:49	3.5	126.19	100	4.3	-	-	-	Talaud Islands, Indonesia
121	24/08/2016	02:53:28	1.26	122.53	14	3.1	-	-	-	Minahassa Peninsula, Sulawesi
122	24/08/2016	04:16:50	6	124.11	523	4.4	-	-	-	Mindanao, Philippines
123	24/08/2016	07:52:57	0.72	121.39	54	2.6	-	-	-	Minahassa Peninsula, Sulawesi
124	24/08/2016	09:47:01	1.94	126.55	61	4.6	0.00023	0.00071	0.00071	Northern Molucca Sea
125	24/08/2016	21:00:55	1.32	120.75	10	2.8	-	-	-	Minahassa Peninsula, Sulawesi
126	25/08/2016	04:53:27	2.95	128.39	218	4.4	-	-	-	Halmahera, Indonesia
127	25/08/2016	07:12:27	4.84	127.31	152	4.8	-	-	-	Talaud Islands, Indonesia
128	25/08/2016	14:05:48	0.27	121.69	78	2.2	-	-	-	Minahassa Peninsula, Sulawesi
129	25/08/2016	14:16:06	3.73	126.01	127	3.9	-	-	-	Talaud Islands, Indonesia
130	25/08/2016	15:38:09	2.55	126.87	24	3.4	-	-	-	Northern Molucca Sea
131	25/08/2016	16:24:22	2.5	126.36	10	3.2	-	-	-	Northern Molucca Sea
132	26/08/2016	01:39:36	6	116.54	10	4.5	-	-	-	Borneo
133	26/08/2016	02:20:50	2.56	128.45	226	4.6	-	-	-	Halmahera, Indonesia
134	26/08/2016	03:37:03	0.52	122.05	85	2.7	-	-	-	Minahassa Peninsula, Sulawesi
135	26/08/2016	03:45:46	-0.2	122.94	138	3.9	-	-	-	Minahassa Peninsula, Sulawesi
136	26/08/2016	08:45:28	0.5	121.24	28	3.9	-	-	-	Minahassa Peninsula, Sulawesi
137	26/08/2016	18:25:05	-0.15	123.18	29	3.2	-	-	-	Minahassa Peninsula, Sulawesi
138	26/08/2016	21:26:16	-0.1	123.3	132	3.9	-	-	-	Minahassa Peninsula, Sulawesi
139	27/08/2016	10:41:40	-0.12	122.81	119	2.5	-	-	-	Minahassa Peninsula, Sulawesi
140	27/08/2016	18:03:19	-0.37	120.12	10	4	0.00018	0.00003	0.00039	Minahassa Peninsula, Sulawesi
141	28/08/2016	03:54:29	-0.44	119.91	10	2.4	-	-	-	Minahassa Peninsula, Sulawesi
142	28/08/2016	06:11:03	0.49	126.13	10	3.4	-	-	-	Northern Molucca Sea
143	28/08/2016	16:37:32	3.5	125.72	143	3.6	-	-	-	Talaud Islands, Indonesia
144	28/08/2016	17:19:53	-0.25	125.73	10	4.3	-	-	-	Southern Molucca Sea
145	28/08/2016	18:41:38	3.28	126.7	10	4.4	0.00022	0.00026	0.00031	Talaud Islands, Indonesia
146	28/08/2016	22:11:17	-0.04	123.59	115	3.3	-	-	-	Minahassa Peninsula, Sulawesi
147	29/08/2016	08:55:01	0.73	126.84	30	4.6	-	-	-	Southern Molucca Sea
148	29/08/2016	14:51:44	-0.12	124.12	72	3.5	-	-	-	Southern Molucca Sea
149	29/08/2016	17:21:46	1.61	126.26	10	4.1	0.00001	0.00001	0.00001	Northern Molucca Sea
150	29/08/2016	21:21:53	5.16	125.63	173	4.5	-	-	-	Mindanao, Philippines
151	29/08/2016	23:15:02	1.65	126.21	10	4.2	-	-	-	Northern Molucca Sea
152	30/08/2016	06:18:30	0.81	120.82	10	4.2	0.00008	0.00010	0.00012	Minahassa Peninsula, Sulawesi
153	30/08/2016	11:51:54	0.33	121.91	184	2.4	-	-	-	Minahassa Peninsula, Sulawesi
154	30/08/2016	15:36:37	1.04	126.88	261	3.3	-	-	-	Northern Molucca Sea
155	31/08/2016	00:56:54	-0.09	122.54	10	2.7	-	-	-	Minahassa Peninsula, Sulawesi
156	31/08/2016	02:58:16	1.09	120.72	31	2.9	-	-	-	Minahassa Peninsula, Sulawesi
157	31/08/2016	06:15:01	2.32	126.91	26	3.4	-	-	-	Northern Molucca Sea
158	31/08/2016	07:01:53	0.83	121.67	31	2	-	-	-	Minahassa Peninsula, Sulawesi
159	31/08/2016	12:53:48	0.16	122.53	94.6	2.8	-	-	-	Minahassa Peninsula, Sulawesi
160	31/08/2016	17:52:47	-0.34	123.54	26	3.3	-	-	-	Minahassa Peninsula, Sulawesi
161	31/08/2016	18:06:43	0.92	126.08	10	3.2	-	-	-	Northern Molucca Sea
162	31/08/2016	20:46:58	3.86	126.96	44	3.6	0.00039	0.00014	0.00018	Talaud Islands, Indonesia

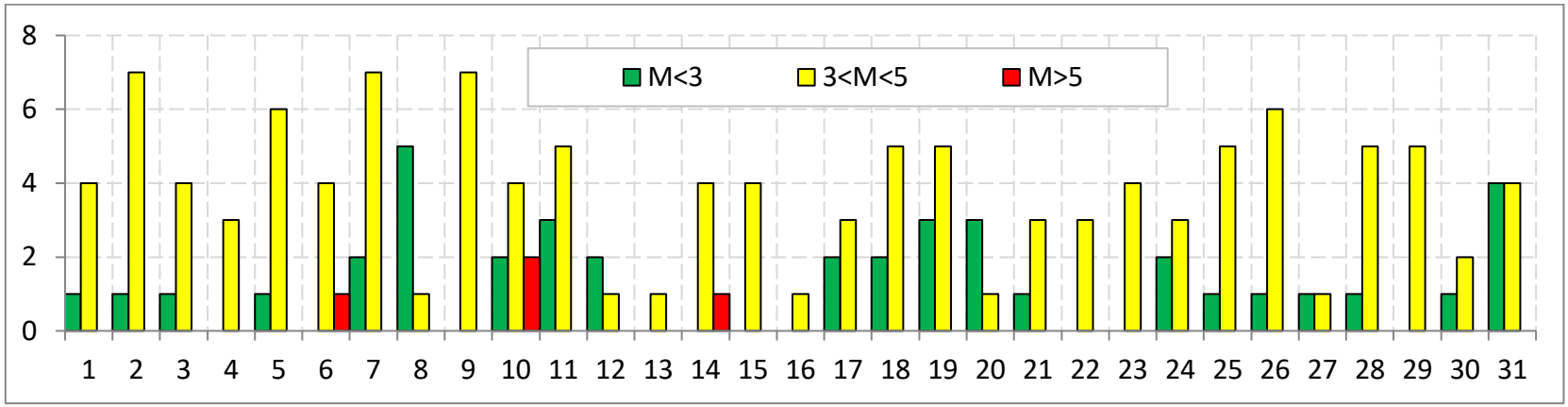
Peta 9. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Agustus 2016



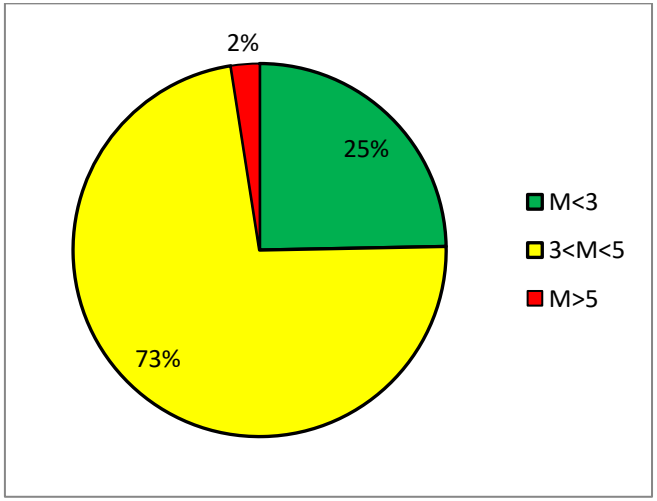
Tabel 16. Rekapitulasi Gempabumi Berdasarkan Magnitudo
Bulan Agustus 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	1	4	0	5	0	0
2	1	7	0	8	0	0
3	1	4	0	5	0	0
4	0	3	0	3	0	0
5	1	6	0	7	0	0
6	0	4	1	5	0	0
7	2	7	0	9	0	0
8	5	1	0	6	0	0
9	0	7	0	7	1	0
10	2	4	2	8	0	0
11	3	5	0	8	1	0
12	2	1	0	3	0	0
13	0	1	0	1	1	0
14	0	4	1	5	0	0
15	0	4	0	4	0	0
16	0	1	0	1	0	0
17	2	3	0	5	0	0
18	2	5	0	7	0	0
19	3	5	0	8	0	0
20	3	1	0	4	0	0
21	1	3	0	4	0	0
22	0	3	0	3	0	0
23	0	4	0	4	0	0
24	2	3	0	5	0	0
25	1	5	0	6	0	0
26	1	6	0	7	0	0
27	1	1	0	2	0	0
28	1	5	0	6	0	0
29	0	5	0	5	0	0
30	1	2	0	3	0	0
31	4	4	0	8	0	0
Jumlah gempa	40	118	4	162	3	0
Jumlah gempa seluruhnya						

Histogram 15. Gempabumi Berdasarkan Magnitudo
Bulan Agustus 2016



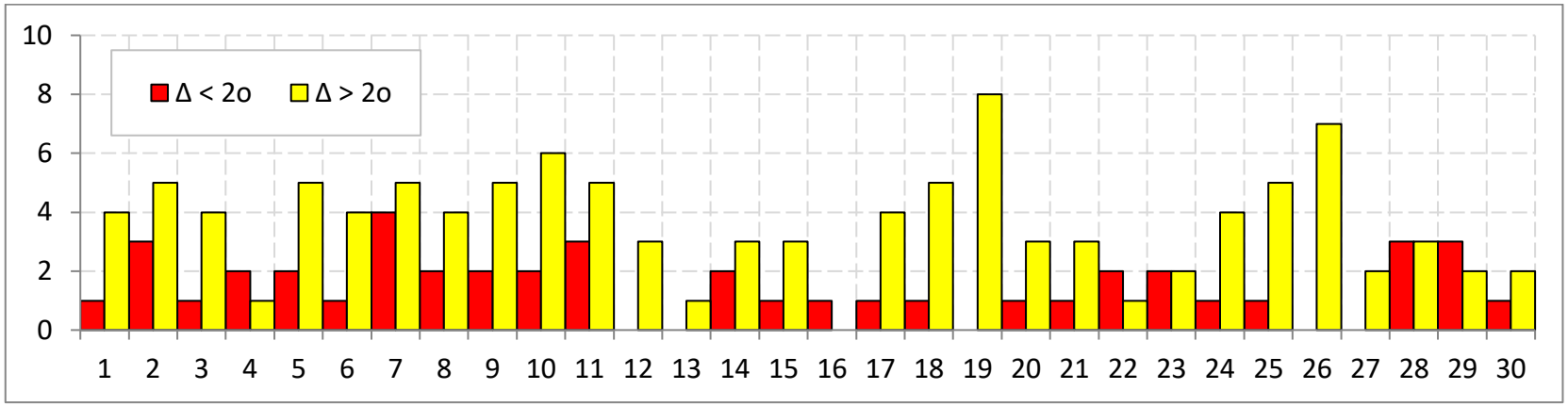
Persentase 17. Gempabumi Berdasarkan Magnitudo
Bulan Agustus 2016



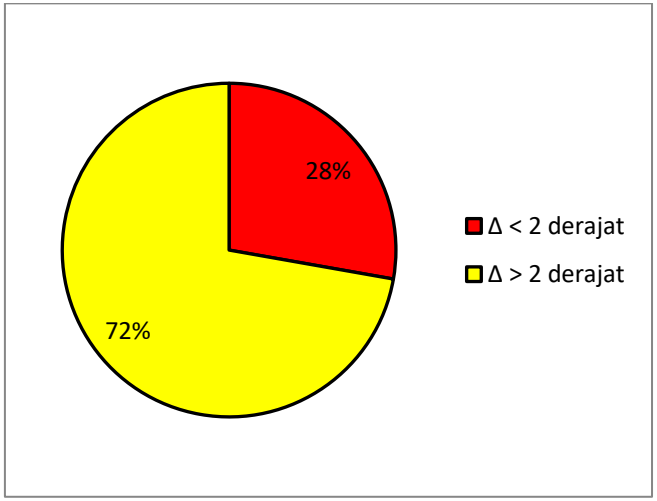
Tabel 17. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan Agustus 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/08/2016	1	4	5	-
02/08/2016	3	5	8	-
03/08/2016	1	4	5	-
04/08/2016	2	1	3	-
05/08/2016	2	5	7	-
06/08/2016	1	4	5	-
07/08/2016	4	5	9	-
08/08/2016	2	4	6	-
09/08/2016	2	5	7	-
10/08/2016	2	6	8	-
11/08/2016	3	5	8	-
12/08/2016	0	3	3	-
13/08/2016	0	1	1	-
14/08/2016	2	3	5	-
15/08/2016	1	3	4	-
16/08/2016	1	0	1	-
17/08/2016	1	4	5	-
18/08/2016	1	5	6	-
19/08/2016	0	8	8	-
20/08/2016	1	3	4	-
21/08/2016	1	3	4	-
22/08/2016	2	1	3	-
23/08/2016	2	2	4	-
24/08/2016	1	4	5	-
25/08/2016	1	5	6	-
26/08/2016	0	7	7	-
27/08/2016	0	2	2	-
28/08/2016	3	3	6	-
29/08/2016	3	2	5	-
30/08/2016	1	2	3	-
31/08/2016	1	8	9	
Jumlah gempa	45	117	162	-
Jumlah gempa seluruhnya				

Histogram 16. Gempabumi Berdasarkan Jarak
Bulan Agustus 2016



Persentase 18. Gempabumi Berdasarkan Jarak
Bulan Agustus 2016



Data Gempabumi Bulan September 2016

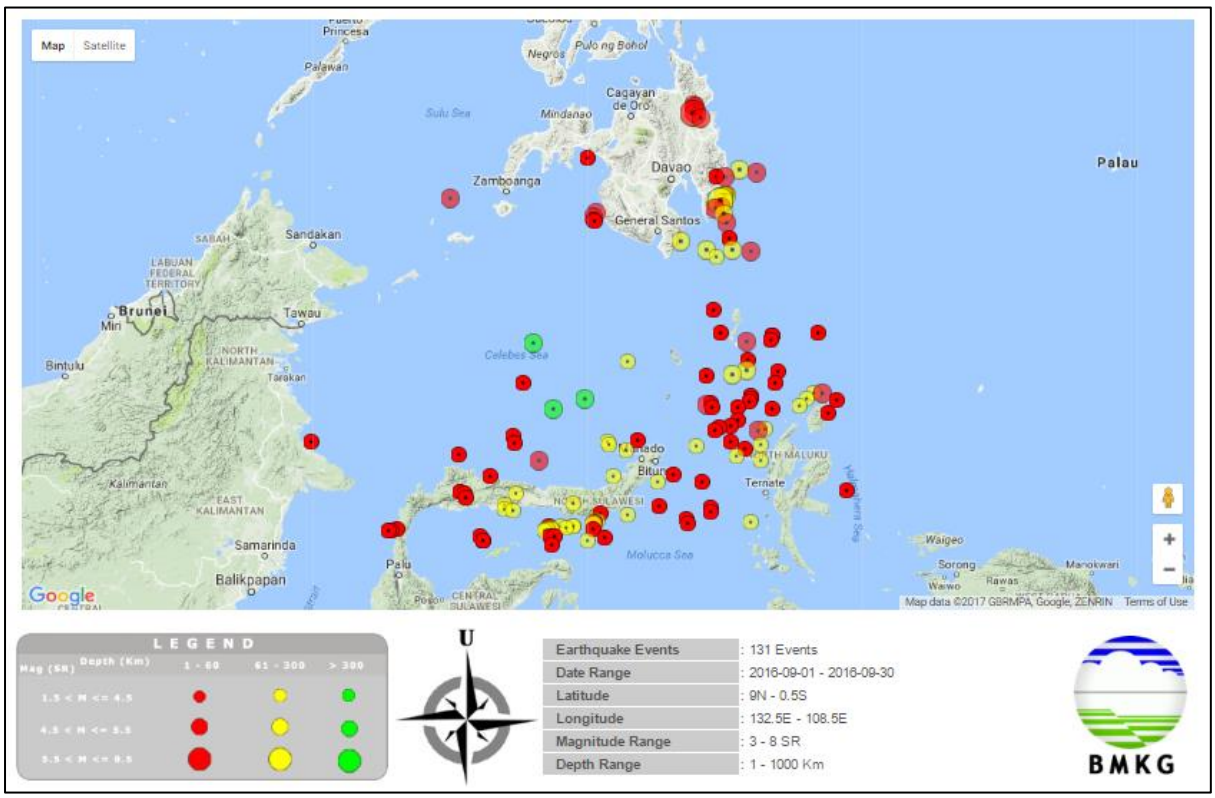
NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (KM)	MAG (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/09/2016	00:42:31	0.82	120.84	10	2.4				Minahassa Peninsula, Sulawesi
2	01/09/2016	00:53:07	3.83	127.53	16	4.5				Talaud Islands, Indonesia
3	01/09/2016	01:42:38	0.34	125.19	10	3.5				Northern Molucca Sea
4	01/09/2016	08:08:22	1.48	121.37	16	2.7				Minahassa Peninsula, Sulawesi
5	01/09/2016	08:27:32	3.01	126.71	67	4.9				Talaud Islands, Indonesia
6	01/09/2016	12:11:09	-0.22	122.83	11	2.5				Minahassa Peninsula, Sulawesi
7	02/09/2016	00:46:39	-0.36	123.75	120	4.2				Minahassa Peninsula, Sulawesi
8	02/09/2016	02:14:18	-0.2	122.97	140	2.7				Minahassa Peninsula, Sulawesi
9	02/09/2016	04:07:36	0.68	129.05	10	3.2				Halmahera, Indonesia
10	02/09/2016	05:46:32	2.37	126.82	10	4.1				Northern Molucca Sea
11	02/09/2016	08:39:19	6.21	123.85	10	4.8				Mindanao, Philippines
12	02/09/2016	09:11:55	1.67	118.09	27	3.5				Borneo
13	02/09/2016	11:38:03	-0.14	122.92	10	2.4				Minahassa Peninsula, Sulawesi
14	02/09/2016	11:56:51	6.16	123.89	10	4.5				Mindanao, Philippines
15	02/09/2016	12:02:52	6.29	123.92	16	5				Mindanao, Philippines
16	02/09/2016	14:52:10	7.45	123.73	10	4				Mindanao, Philippines
17	02/09/2016	14:58:59	0.61	122.51	10	1.5				Minahassa Peninsula, Sulawesi
18	02/09/2016	15:31:37	0.35	121.51	110	2.1				Minahassa Peninsula, Sulawesi
19	02/09/2016	15:48:10	0.36	121.89	176	2				Minahassa Peninsula, Sulawesi
20	02/09/2016	18:43:51	6.19	123.85	11	4.5				Mindanao, Philippines
21	02/09/2016	21:39:26	-0.07	123.46	125	3.7				Minahassa Peninsula, Sulawesi
22	03/09/2016	00:32:21	1.39	121.09	10	3				Minahassa Peninsula, Sulawesi
23	03/09/2016	01:05:53	0.85	121.28	10	1.9				Minahassa Peninsula, Sulawesi
24	03/09/2016	06:37:02	-0.06	122.94	10	3				Minahassa Peninsula, Sulawesi
25	03/09/2016	10:49:59	-0.14	122.84	10	2.8				Minahassa Peninsula, Sulawesi
26	03/09/2016	12:13:53	2.48	127.04	11	3.7				Northern Molucca Sea
27	03/09/2016	17:14:52	2.5	123.69	397	4.1				Celebes Sea
28	03/09/2016	21:48:06	2.35	127.51	29	3.8				Northern Molucca Sea
29	04/09/2016	02:38:16	8.24	125.89	50	5.7				Mindanao, Philippines
30	04/09/2016	07:54:44	8.34	125.91	52	5				Mindanao, Philippines
31	04/09/2016	15:16:24	1.5	124.54	217	3.4				Minahassa Peninsula, Sulawesi
32	04/09/2016	15:17:48	4.36	126.32	39	4.2				Talaud Islands, Indonesia
33	04/09/2016	15:27:30	8.44	125.93	24	4.7				Mindanao, Philippines
34	04/09/2016	16:27:01	1.24	122.74	12	4.7				Minahassa Peninsula, Sulawesi
35	04/09/2016	17:43:36	0.39	123.46	257	3.9				Minahassa Peninsula, Sulawesi
36	04/09/2016	18:22:49	0.6	121.71	189	2.2				Minahassa Peninsula, Sulawesi
37	05/09/2016	06:14:11	3.67	126.98	52	5.3				Talaud Islands, Indonesia PGN = Info Gempa Mag:5.2 SR, 05-Sep-16 13:14:09 WIB, Lok:3.95 LU,126.98 BT (30 km Tenggara KEP-TALAUD-SULUT), Kedlmn:42 Km ::BMKG
38	05/09/2016	07:06:46	0.33	121.5	136	2.1				Minahassa Peninsula, Sulawesi
39	06/09/2016	06:14:20	0.02	127.07	114	3.7				Halmahera, Indonesia
40	06/09/2016	13:18:51	1.71	127.12	10	2.8				Halmahera, Indonesia
41	06/09/2016	15:14:33	5.82	126.64	24	4.5				Mindanao, Philippines
42	07/09/2016	04:54:26	8.47	125.92	52	4.9				Mindanao, Philippines
43	07/09/2016	09:30:52	2.59	127.07	28	3.6				Northern Molucca Sea
44	07/09/2016	12:02:50	2.87	127.57	10	3.8				Northern Molucca Sea
45	07/09/2016	12:58:54	2.52	128.85	10	3.8				Halmahera, Indonesia
46	07/09/2016	15:44:53	6.58	120.93	56	4.9				Sulu Archipelago, Philippines
47	07/09/2016	17:28:50	3.89	128.47	32	3.7				North of Halmahera, Indonesia
48	08/09/2016	01:45:43	0.48	122.12	92	2				Minahassa Peninsula, Sulawesi
49	08/09/2016	03:26:37	0.83	125.18	64	4.3				Northern Molucca Sea

50	08/09/2016	04:00:53	0.62	122.3	61	2.8				Minahassa Peninsula, Sulawesi
51	08/09/2016	20:01:35	1.89	126.34	10	4				Northern Molucca Sea
52	08/09/2016	20:48:23	-0.24	122.91	27	2.2				Minahassa Peninsula, Sulawesi
53	09/09/2016	07:40:03	3.82	127.52	36	4.1				Talaud Islands, Indonesia
54	09/09/2016	09:07:26	3.73	127.49	22	4.1				Talaud Islands, Indonesia
55	09/09/2016	15:27:31	-0.08	123.86	96	4.8				Minahassa Peninsula, Sulawesi
56	09/09/2016	15:48:42	1.96	126.42	11	3.1				Northern Molucca Sea
57	09/09/2016	16:21:09	-0.13	123.87	52	3.4				Minahassa Peninsula, Sulawesi
58	09/09/2016	16:32:32	0.04	123.95	76	3.1				Minahassa Peninsula, Sulawesi
59	10/09/2016	02:26:56	1.87	127.24	31	4.7				Halmahera, Indonesia
60	10/09/2016	09:41:12	1.78	122.21	21	3.2				Minahassa Peninsula, Sulawesi
61	10/09/2016	16:29:12	5.53	126.7	102	5				Mindanao, Philippines
62	10/09/2016	21:20:07	0.3	122.05	166	3.4				Minahassa Peninsula, Sulawesi
63	11/09/2016	11:33:51	-0.3	124.1	33	3.7				Southern Molucca Sea
64	11/09/2016	19:20:30	3.01	126.17	20	3.8				Talaud Islands, Indonesia
65	12/09/2016	00:32:10	1.65	126.68	21	4.5				Northern Molucca Sea
66	12/09/2016	13:24:29	0.06	122.86	96	2.5				Minahassa Peninsula, Sulawesi
67	12/09/2016	13:28:56	-0.12	122.89	132	3.1				Minahassa Peninsula, Sulawesi
68	12/09/2016	14:10:47	-0.13	123.01	133	3.6				Minahassa Peninsula, Sulawesi
69	12/09/2016	15:30:33	1.59	124.17	299	3.4				Minahassa Peninsula, Sulawesi
70	12/09/2016	15:43:26	1.37	120.21	10	2.9				Minahassa Peninsula, Sulawesi
71	12/09/2016	18:47:56	0.84	126.09	10	4				Northern Molucca Sea
72	12/09/2016	18:55:09	2.4	128.08	145	3.3				Halmahera, Indonesia
73	12/09/2016	23:01:13	1.65	124.16	294	4.1				Minahassa Peninsula, Sulawesi
74	14/09/2016	09:03:11	-0.33	122.98	19	2.7				Minahassa Peninsula, Sulawesi
75	14/09/2016	13:05:26	2.11	126.82	10	3.7				Northern Molucca Sea
76	14/09/2016	14:25:03	0.33	121.48	127	2.4				Minahassa Peninsula, Sulawesi
77	14/09/2016	15:54:49	-0.06	121.98	22	2.6				Minahassa Peninsula, Sulawesi
78	14/09/2016	16:37:47	1.94	127.36	92	3.5				Halmahera, Indonesia
79	14/09/2016	19:29:14	2.54	128.23	152	4.2				Halmahera, Indonesia
80	15/09/2016	04:15:56	-0.28	123.07	15	3				Minahassa Peninsula, Sulawesi
81	15/09/2016	07:26:00	1.28	127.28	139	4.1				Halmahera, Indonesia
82	15/09/2016	07:48:35	0.75	121.23	50	2.4				Minahassa Peninsula, Sulawesi
83	15/09/2016	20:21:21	0.32	126.25	27	3.2				Northern Molucca Sea
84	15/09/2016	20:57:01	-0.35	122.91	60	2.8				Minahassa Peninsula, Sulawesi
85	16/09/2016	06:10:54	-0.34	121.68	11	2.6				Minahassa Peninsula, Sulawesi
86	16/09/2016	06:15:12	-0.28	121.55	12	3.2				Minahassa Peninsula, Sulawesi
87	16/09/2016	07:50:47	5.73	125.65	202	5.5				Mindanao, Philippines PGN = Info Gempa Mag:5.3 SR, 16-Sep-16 14:50:49 WIB, Lok:5.51 LU,125.69 BT (198 km BaratLaut KEP-TALAUD-SULUT), Kedlmn:179 Km ::BMKG
88	16/09/2016	08:31:01	0.31	122.04	174	2.2				Minahassa Peninsula, Sulawesi
89	16/09/2016	16:10:18	5.43	126.37	131	4				Mindanao, Philippines
90	16/09/2016	18:06:49	3.09	127.65	19	4.2				Talaud Islands, Indonesia
91	16/09/2016	19:49:12	1.51	126.95	35	3.3				Northern Molucca Sea
92	16/09/2016	21:11:54	1.58	125.96	95	4.1				Northern Molucca Sea
93	16/09/2016	23:04:23	3.31	124.57	272	4.3				Celebes Sea
94	17/09/2016	05:32:00	2.55	127.07	25	4.1				Northern Molucca Sea
95	17/09/2016	12:17:28	2.31	123.03	433	4.3				Celebes Sea
96	17/09/2016	13:52:24	-0.1	122.98	109	3.9				Minahassa Peninsula, Sulawesi
97	18/09/2016	00:32:14	-0.33	123.11	18	2.9				Minahassa Peninsula, Sulawesi
98	18/09/2016	01:26:05	8.21	126.07	51	4.8				Mindanao, Philippines
99	18/09/2016	03:18:37	-0.21	122.89	72	2.9				Minahassa Peninsula, Sulawesi
100	18/09/2016	05:54:15	2.63	128.56	54	5				Halmahera, Indonesia
101	18/09/2016	10:24:56	1.34	122.57	130	2.3				Minahassa Peninsula, Sulawesi
102	18/09/2016	13:35:01	0.63	121.14	53	4.1				Minahassa Peninsula, Sulawesi

103	18/09/2016	17:21:38	0.8	122.35	62	2.4				Minahassa Peninsula, Sulawesi
104	18/09/2016	17:40:16	0.24	126.25	10	3				Northern Molucca Sea
105	18/09/2016	22:11:26	-0.13	122.93	133	3.2				Minahassa Peninsula, Sulawesi
106	19/09/2016	00:07:11	0.5	121.47	114	2.4				Minahassa Peninsula, Sulawesi
107	19/09/2016	02:23:54	-0.35	121.61	10	3.3				Minahassa Peninsula, Sulawesi
108	19/09/2016	02:43:53	-0.35	121.6	10	3.5				Minahassa Peninsula, Sulawesi
109	19/09/2016	07:56:52	2.24	128.66	10	4.3				Halmahera, Indonesia
110	19/09/2016	13:19:37	0.03	123.85	99	3.3				Minahassa Peninsula, Sulawesi
111	20/09/2016	01:45:04	0.52	121.24	31	3				Minahassa Peninsula, Sulawesi
112	20/09/2016	23:22:18	2.66	128.37	207	3.9				Halmahera, Indonesia
113	21/09/2016	02:20:09	5.51	127.07	59	4.9				Philippine Islands Region
114	21/09/2016	06:16:31	0.61	121.2	35	2.7				Minahassa Peninsula, Sulawesi
115	21/09/2016	06:32:05	0.6	121.21	20	3.8				Minahassa Peninsula, Sulawesi
116	21/09/2016	21:14:51	3.34	127.02	38	3.8				Talaud Islands, Indonesia
117	21/09/2016	22:35:45	0.97	121.74	16	3				Minahassa Peninsula, Sulawesi
118	22/09/2016	02:37:17	-0.2	122.84	80	2.8				Minahassa Peninsula, Sulawesi
119	22/09/2016	06:20:14	-0.1	123.31	130	3.5				Minahassa Peninsula, Sulawesi
120	22/09/2016	09:38:05	0.43	120.62	69	2.7				Minahassa Peninsula, Sulawesi
121	22/09/2016	13:13:29	6.73	126.59	10	4.4				Mindanao, Philippines
122	22/09/2016	14:16:36	0.03	123.89	13	3.2				Minahassa Peninsula, Sulawesi
123	22/09/2016	16:48:52	1.59	127.28	122	3.5				Halmahera, Indonesia
124	23/09/2016	01:54:26	3.64	122.62	532	4.2				Celebes Sea
125	23/09/2016	05:25:36	1.69	124.75	10	4				Minahassa Peninsula, Sulawesi
126	23/09/2016	08:37:22	2.85	122.41	10	3.2				Celebes Sea
127	23/09/2016	11:46:31	-0.01	122.81	10	2.5				Minahassa Peninsula, Sulawesi
128	23/09/2016	13:51:18	2.44	126.26	21	4.1				Northern Molucca Sea
129	23/09/2016	19:50:30	7.07	126.38	33	4.4				Mindanao, Philippines
130	23/09/2016	22:47:30	1.15	123.56	142	2.6				Minahassa Peninsula, Sulawesi
131	23/09/2016	22:53:12	6.47	126.47	76	6.4				Mindanao, Philippines
132	23/09/2016	23:18:09	6.11	126.59	10	4.8				Mindanao, Philippines
133	23/09/2016	23:32:50	7.18	126.84	127	4.8				Mindanao, Philippines
134	23/09/2016	23:45:39	6.51	126.53	69	5.1				Mindanao, Philippines
135	24/09/2016	03:16:46	6.49	126.5	10	4.5				Mindanao, Philippines
136	24/09/2016	06:21:56	6.28	126.54	92	4.9				Mindanao, Philippines
137	24/09/2016	06:55:34	5.55	126.16	82	4.8				Mindanao, Philippines
138	24/09/2016	08:48:59	7.03	126.55	10	5.3				Mindanao, Philippines
139	24/09/2016	10:12:42	7.11	127.2	10	4.9				Philippine Islands Region
140	24/09/2016	11:34:08	1.62	122.24	10	3.1				Minahassa Peninsula, Sulawesi
141	24/09/2016	15:30:56	-0.45	123.01	48	3.5				Minahassa Peninsula, Sulawesi
142	24/09/2016	16:34:02	6.38	126.34	27	4.8				Mindanao, Philippines
143	25/09/2016	02:56:44	0.27	122.21	165	4				Minahassa Peninsula, Sulawesi
144	25/09/2016	05:31:35	6.64	126.53	81	4.8				Mindanao, Philippines
145	25/09/2016	13:15:50	-0.21	122.9	76	2.3				Minahassa Peninsula, Sulawesi
146	25/09/2016	15:09:58	0.37	122.04	150	2.9				Minahassa Peninsula, Sulawesi
147	25/09/2016	19:30:54	0.09	125.77	26	4.4				Northern Molucca Sea
148	25/09/2016	19:37:35	0	125.78	10	3.9				Southern Molucca Sea
149	26/09/2016	08:30:00	0.29	121.84	175	2				Minahassa Peninsula, Sulawesi
150	26/09/2016	09:18:48	1.4	121.95	10	2.4				Minahassa Peninsula, Sulawesi
151	26/09/2016	17:33:39	-0.16	122.86	123	3.4				Minahassa Peninsula, Sulawesi
152	26/09/2016	17:44:52	1.21	127	12	2.8				Halmahera, Indonesia
153	26/09/2016	18:44:08	0.6	122.26	75	3.2				Minahassa Peninsula, Sulawesi
154	26/09/2016	19:00:30	0.37	126.05	93	2.6				Northern Molucca Sea
155	26/09/2016	20:06:41	-0.05	123.11	94	2.5				Minahassa Peninsula, Sulawesi
156	27/09/2016	03:29:51	-0.08	123.45	130	3.1				Minahassa Peninsula, Sulawesi
157	27/09/2016	04:41:50	0.95	124.26	75	3.7				Minahassa Peninsula, Sulawesi
158	27/09/2016	05:50:41	-0.09	123.18	142	2.7				Minahassa Peninsula, Sulawesi
159	27/09/2016	08:28:10	0.19	124.01	16	3				Minahassa Peninsula, Sulawesi

160	27/09/2016	13:19:35	3.1	126.98	70	4.8				Talaud Islands, Indonesia
161	27/09/2016	14:19:03	1.99	126.67	24	4.1				Northern Molucca Sea
162	27/09/2016	15:03:40	-0.12	119.83	10	3.2				Minahassa Peninsula, Sulawesi
163	27/09/2016	15:17:50	-0.15	119.72	10	3				Minahassa Peninsula, Sulawesi
164	27/09/2016	15:22:26	-0.15	119.67	10	3.2				Minahassa Peninsula, Sulawesi
165	27/09/2016	17:59:00	2.39	126.16	34	4.6				Northern Molucca Sea
166	28/09/2016	04:01:47	6.65	126.57	70	4.8				Mindanao, Philippines
167	28/09/2016	04:19:34	0.58	121.62	70	2.4				Minahassa Peninsula, Sulawesi
168	28/09/2016	04:53:50	1.41	121.3	10	2.8				Minahassa Peninsula, Sulawesi
169	28/09/2016	18:21:16	0.38	122.05	175	4				Minahassa Peninsula, Sulawesi
170	28/09/2016	23:52:03	-0.41	122.98	10	2.7				Minahassa Peninsula, Sulawesi
171	29/09/2016	20:42:51	1.36	126.79	92	3.6				Northern Molucca Sea
172	29/09/2016	21:28:57	3.9	126.46	25	4.2				Talaud Islands, Indonesia
173	30/09/2016	04:07:20	2.37	126.3	19	3.7				Northern Molucca Sea
174	30/09/2016	07:58:09	-0.07	123.19	142	3				Minahassa Peninsula, Sulawesi
175	30/09/2016	11:16:35	1	125.5	33	3.9				Northern Molucca Sea
176	30/09/2016	11:24:30	0.17	124.55	68	3.2				Minahassa Peninsula, Sulawesi
177	30/09/2016	13:10:56	0.54	121.97	170	2.3				Minahassa Peninsula, Sulawesi
178	30/09/2016	22:42:27	-0.26	122.97	14	3.1				Minahassa Peninsula, Sulawesi

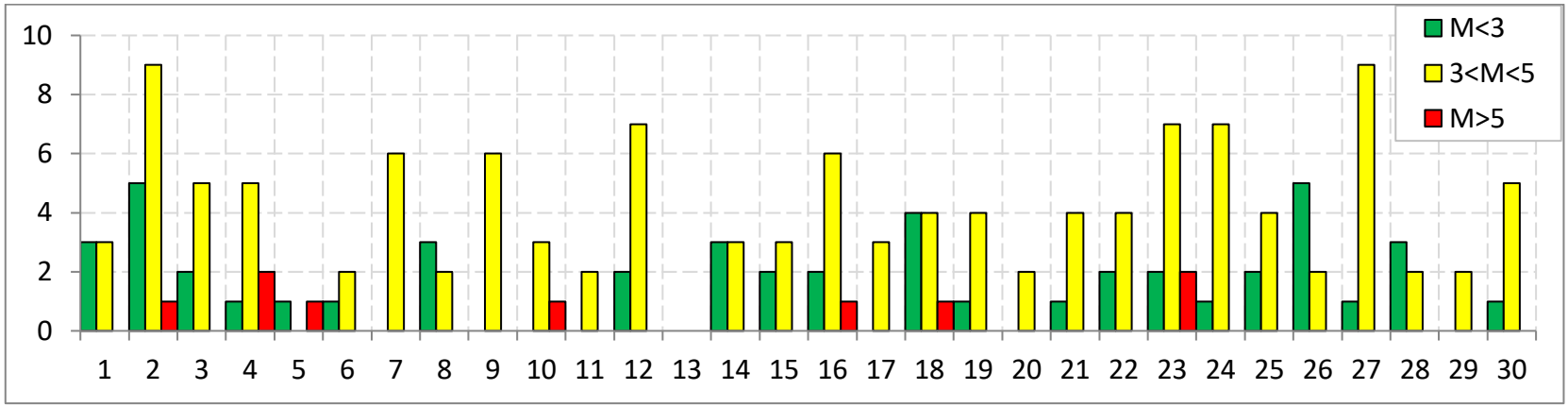
Peta 10. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan September 2016



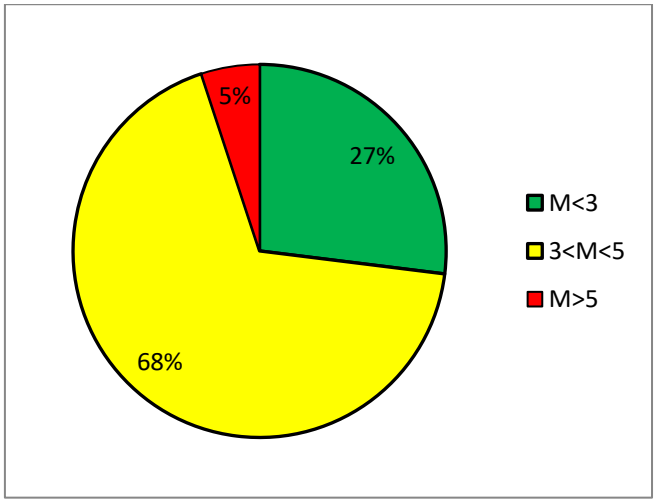
Tabel 18. Rekapitulasi Gempabumi Berdasarkan Magnitudo Bulan September 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	3	3	0	6	0	0
2	5	9	1	15	0	0
3	2	5	0	7	0	0
4	1	5	2	8	1	0
5	1	0	1	2	0	0
6	1	2	0	3	0	0
7	0	6	0	6	0	0
8	3	2	0	5	0	0
9	0	6	0	6	0	0
10	0	3	1	4	0	0
11	0	2	0	2	0	0
12	2	7	0	9	0	0
13	0	0	0	0	0	0
14	3	3	0	6	0	0
15	2	3	0	5	0	0
16	2	6	1	9	0	0
17	0	3	0	3	0	0
18	4	4	1	9	1	0
19	1	4	0	5	0	0
20	0	2	0	2	0	0
21	1	4	0	5	0	0
22	2	4	0	6	0	0
23	2	7	2	11	1	0
24	1	7	0	8	0	0
25	2	4	0	6	0	0
26	5	2	0	7	0	0
27	1	9	0	10	0	0
28	3	2	0	5	0	0
29	0	2	0	2	0	0
30	1	5	0	6	0	0
Jumlah gempa	48	121	9	178	3	0
Jumlah gempa seluruhnya						

Histogram 17. Gempabumi Berdasarkan Magnitudo
Bulan September 2016



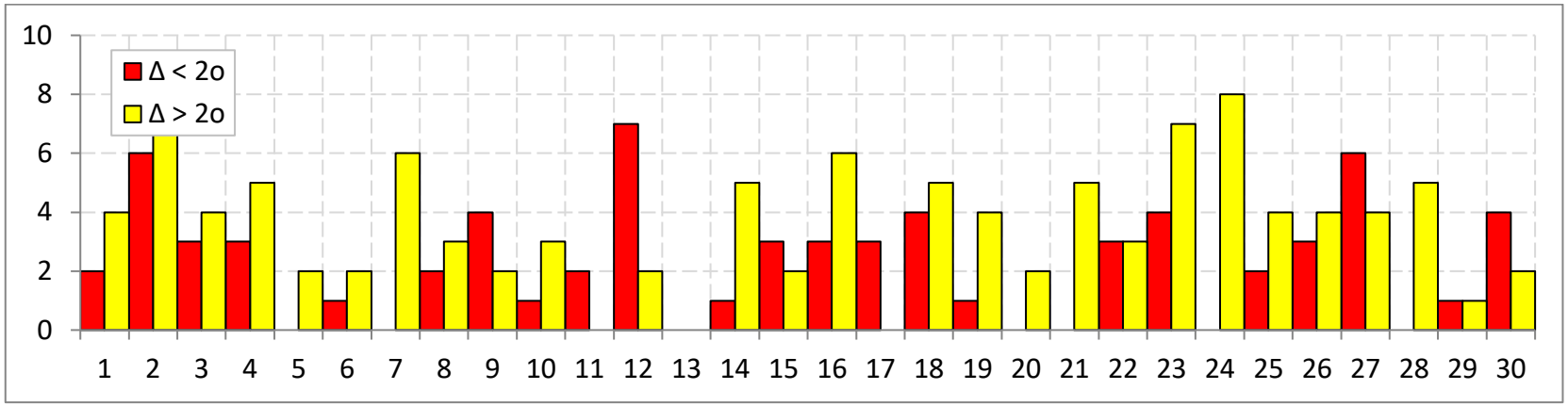
Persentase 19. Gempabumi Berdasarkan Magnitudo
Bulan September 2016



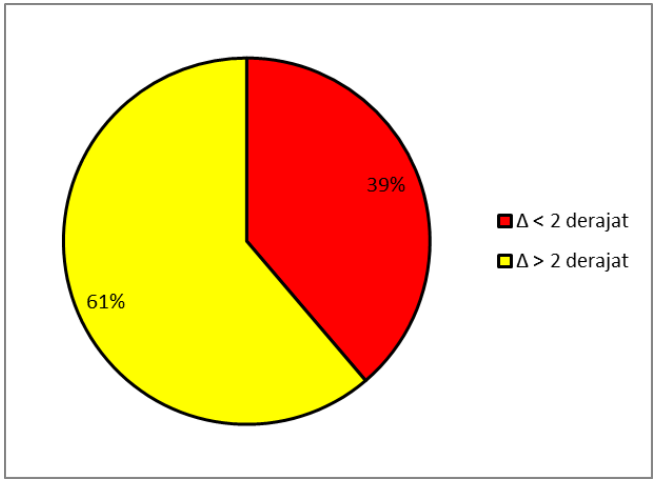
Tabel 19. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan September 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/08/2016	2	4	6	-
02/08/2016	6	9	15	-
03/08/2016	3	4	7	-
04/08/2016	3	5	8	-
05/08/2016	0	2	2	-
06/08/2016	1	2	3	-
07/08/2016	0	6	6	-
08/08/2016	2	3	5	-
09/08/2016	4	2	6	-
10/08/2016	1	3	4	-
11/08/2016	2	0	2	-
12/08/2016	7	2	9	-
13/08/2016	0	0	0	-
14/08/2016	1	5	6	-
15/08/2016	3	2	5	-
16/08/2016	3	6	9	-
17/08/2016	3	0	3	-
18/08/2016	4	5	9	-
19/08/2016	1	4	5	-
20/08/2016	0	2	2	-
21/08/2016	0	5	5	-
22/08/2016	3	3	6	-
23/08/2016	4	7	11	-
24/08/2016	0	8	8	-
25/08/2016	2	4	6	-
26/08/2016	3	4	7	-
27/08/2016	6	4	10	-
28/08/2016	0	5	5	-
29/08/2016	1	1	2	-
30/08/2016	4	2	6	-
Jumlah gempa	69	109	178	-
Jumlah gempa seluruhnya				

Histogram 18. Gempabumi Berdasarkan Jarak
Bulan September 2016



Persentase 20. Gempabumi Berdasarkan Jarak
Bulan September 2016



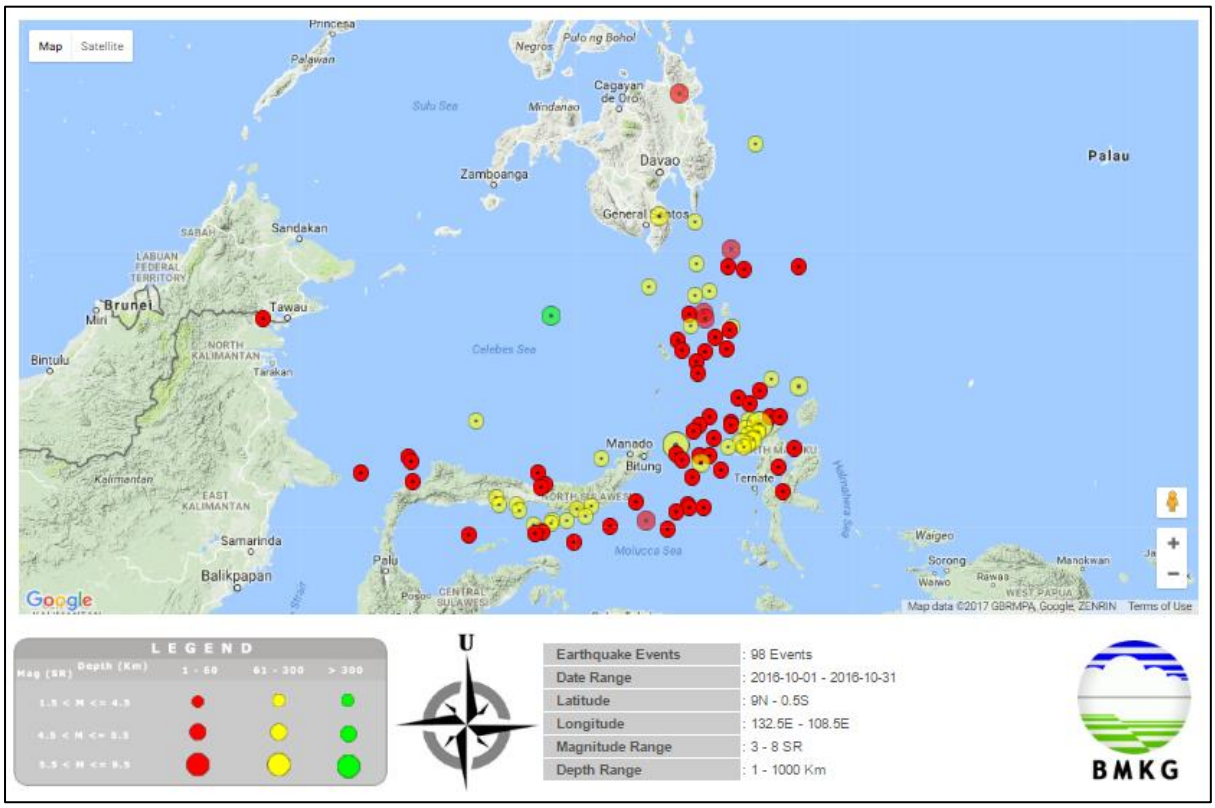
Data Gempabumi Bulan Oktober 2016

NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (KM)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/10/2016	00:23:40	0.96	122.45	48	2.0	-	-	-	Minahassa Peninsula, Sulawesi
2	01/10/2016	02:12:39	0.15	125.80	10	3.4	-	-	-	Northern Molucca Sea
3	01/10/2016	11:26:08	2.06	127.90	10	3.6	0.0147	0.0139	0.0134	Northern Molucca Sea
4	01/10/2016	12:32:25	1.11	127.30	10	3.4	-	-	-	Halmahera, Indonesia
5	01/10/2016	17:18:46	1.97	121.72	191	4.4	-	-	-	Minahassa Peninsula, Sulawesi
6	01/10/2016	18:16:31	3.83	126.88	59	3.3	-	-	-	Talaud Islands, Indonesia
7	01/10/2016	19:08:37	1.43	128.20	10	3.4	-	-	-	Halmahera, Indonesia
8	01/10/2016	20:23:56	-0.04	123.07	145	2.7	-	-	-	Minahassa Peninsula, Sulawesi
9	01/10/2016	20:32:17	0.36	121.48	147	2.7	-	-	-	Minahassa Peninsula, Sulawesi
10	02/10/2016	01:32:53	3.40	126.39	30	3.1	-	-	-	Talaud Islands, Indonesia
11	02/10/2016	08:00:35	-0.32	121.57	10	3.4	-	-	-	Minahassa Peninsula, Sulawesi
12	02/10/2016	08:09:34	-0.34	121.58	11	2.6	-	-	-	Minahassa Peninsula, Sulawesi
13	02/10/2016	10:44:58	0.94	121.28	8	3.2	-	-	-	Minahassa Peninsula, Sulawesi
14	02/10/2016	16:23:10	1.45	126.83	95	4.0	-	-	-	Northern Molucca Sea
15	02/10/2016	17:22:06	-0.16	124.45	33	3.9	-	-	-	Southern Molucca Sea
16	03/10/2016	02:41:05	4.63	126.45	63	4.5	-	-	-	Talaud Islands, Indonesia
17	03/10/2016	07:02:15	1.22	124.27	257	3.9	-	-	-	Minahassa Peninsula, Sulawesi
18	03/10/2016	15:15:22	2.44	127.04	10	3.2	-	-	-	Northern Molucca Sea
19	03/10/2016	18:00:30	0.98	126.70	39	3.4	-	-	-	Northern Molucca Sea
20	04/10/2016	04:41:15	3.45	126.81	10	3.4	-	-	-	Talaud Islands, Indonesia
21	04/10/2016	08:36:44	-0.04	123.11	138	2.6	-	-	-	Minahassa Peninsula, Sulawesi
22	04/10/2016	12:42:00	0.28	121.37	148	2.3	-	-	-	Minahassa Peninsula, Sulawesi
23	05/10/2016	10:20:35	2.95	126.24	34	3.6	-	-	-	Northern Molucca Sea
24	05/10/2016	12:07:36	6.53	125.65	213	3.9	-	-	-	Mindanao, Philippines
25	05/10/2016	13:12:36	1.18	125.92	11	3.8	0.0169	0.0320	0.0523	Northern Molucca Sea
26	05/10/2016	16:38:18	4.67	125.88	117	4.0	-	-	-	Talaud Islands, Indonesia
27	06/10/2016	04:12:24	1.61	127.35	138	3.7	-	-	-	Halmahera, Indonesia
28	06/10/2016	06:24:06	1.19	122.61	11	2.9	-	-	-	Minahassa Peninsula, Sulawesi
29	06/10/2016	06:56:39	1.27	122.63	11	1.9	-	-	-	Minahassa Peninsula, Sulawesi
30	06/10/2016	20:45:18	-0.23	123.03	65	4.0	-	-	-	Minahassa Peninsula, Sulawesi
31	07/10/2016	03:37:17	0.34	124.98	29	4.2	-	-	-	Minahassa Peninsula, Sulawesi
32	07/10/2016	05:07:28	0.23	126.06	27	4.0	-	-	-	Northern Molucca Sea
33	07/10/2016	05:19:46	0.93	122.97	20	3.0	-	-	-	Minahassa Peninsula, Sulawesi
34	07/10/2016	05:34:31	4.14	126.06	11	3.8	-	-	-	Talaud Islands, Indonesia
35	07/10/2016	10:33:14	-0.35	122.05	12	2.8	-	-	-	Minahassa Peninsula, Sulawesi
36	07/10/2016	16:17:32	1.52	127.12	100	5.0	0.1129	0.0852	0.0911	Halmahera, Indonesia; Pusat gempa berada di laut 55km BaratLaut HalmaheraBarat, MALUT; dirasakan di Ternate Utara (2 MMI). PGN = Info Gempa Mag:5.0 SR, 07-Oct-16 23:17:31 WIB, Lok:1.52 LU,127.12 BT (55 km BaratLaut HALMAHERABARAT-MALUT), Kedlmn:100 Km ::BMKG
37	08/10/2016	00:17:01	0.28	122.18	127	3.2	-	-	-	Minahassa Peninsula, Sulawesi
38	08/10/2016	05:03:24	0.97	123.45	38	2.8	-	-	-	Minahassa Peninsula, Sulawesi
39	08/10/2016	05:09:11	-0.28	123.06	31	3.0	-	-	-	Minahassa Peninsula, Sulawesi
40	08/10/2016	13:15:44	5.10	128.27	10	4.3	-	-	-	East of Philippine Islands
41	08/10/2016	13:47:07	-0.09	123.09	111	2.4	-	-	-	Minahassa Peninsula, Sulawesi
42	08/10/2016	19:26:10	1.29	126.26	24	3.4	0.0110	0.0088	0.0087	Northern Molucca Sea
43	08/10/2016	22:41:01	-0.08	123.11	137	2.5	-	-	-	Minahassa Peninsula, Sulawesi
44	09/10/2016	01:31:42	1.09	122.66	40	2.9	-	-	-	Minahassa Peninsula, Sulawesi
45	09/10/2016	02:10:55	0.79	120.17	10	2.9	-	-	-	Minahassa Peninsula, Sulawesi
46	09/10/2016	08:07:29	-0.24	122.93	90	2.7	-	-	-	Minahassa Peninsula, Sulawesi
47	09/10/2016	10:39:28	8.47	125.60	73	4.9	-	-	-	Mindanao, Philippines
48	09/10/2016	11:44:58	1.85	127.45	143	3.2	-	-	-	Halmahera, Indonesia
49	09/10/2016	13:13:02	3.94	127.52	83	4.1	-	-	-	Talaud Islands, Indonesia
50	09/10/2016	14:46:27	1.80	127.49	133	5.8	0.4162	0.5401	0.6710	Halmahera, Indonesia; Pusat gempa berada di laut 52 km BaratLaut HalmaheraBarat, Malut; dirasakan di Tondano & Bitung (4 MMI) di Manado & Kotamobagu (3 MMI). PGN = Info Gempa Mag:6.2 SR, 09-Oct-16 21:46:27 WIB, Lok:1.79

										LU,127.41 BT (52 km BaratLaut HALMAHERABARAT-MALUT), Kedlmn:117 Km ::BMKG
51	09/10/2016	16:18:04	3.61	125.82	37	3.3	-	-	-	Talaud Islands, Indonesia
52	09/10/2016	16:28:06	1.78	127.45	120	3.4	-	-	-	Halmahera, Indonesia
53	10/10/2016	08:29:32	4.07	123.24	537	4.5	-	-	-	Celebes Sea
54	10/10/2016	09:52:25	5.43	126.90	49	4.6	-	-	-	Mindanao, Philippines
55	10/10/2016	13:58:10	1.11	121.33	8	2.6	-	-	-	Minahassa Peninsula, Sulawesi
56	11/10/2016	03:41:49	5.10	126.85	27	4.2	-	-	-	Mindanao, Philippines
57	11/10/2016	06:42:48	0.79	120.07	10	2.9	-	-	-	Minahassa Peninsula, Sulawesi
58	11/10/2016	10:12:08	1.81	127.20	10	3.2	-	-	-	Halmahera, Indonesia
59	11/10/2016	17:30:03	0.04	123.94	106	3.4	-	-	-	Minahassa Peninsula, Sulawesi
60	11/10/2016	20:11:00	0.88	121.44	11	1.8	-	-	-	Minahassa Peninsula, Sulawesi
61	11/10/2016	20:20:38	3.68	126.58	11	3.5	-	-	-	Talaud Islands, Indonesia
62	11/10/2016	20:23:38	1.62	126.55	23	3.7	0.0790	0.0059	0.0076	Northern Molucca Sea
63	12/10/2016	03:16:02	8.58	125.86	33	5.1	-	-	-	Mindanao, Philippines
64	12/10/2016	19:50:57	-0.18	122.95	88	3.6	0.0053	0.0029	0.0031	Minahassa Peninsula, Sulawesi
65	13/10/2016	06:02:18	3.17	126.20	17	4.3	-	-	-	Talaud Islands, Indonesia
66	13/10/2016	06:26:35	0.67	122.43	40	2.6	-	-	-	Minahassa Peninsula, Sulawesi
67	13/10/2016	10:36:42	0.42	122.12	175	3.0	-	-	-	Minahassa Peninsula, Sulawesi
68	13/10/2016	12:50:12	0.70	123.13	10	3.2	-	-	-	Minahassa Peninsula, Sulawesi
69	13/10/2016	14:24:31	4.99	126.56	148	3.8	-	-	-	Talaud Islands, Indonesia
70	13/10/2016	16:42:44	1.51	122.63	42	3.2	-	-	-	Minahassa Peninsula, Sulawesi
71	13/10/2016	19:15:36	1.05	127.86	10	3.4	-	-	-	Halmahera, Indonesia
72	13/10/2016	20:12:26	0.15	122.46	24	2.1	-	-	-	Minahassa Peninsula, Sulawesi
73	13/10/2016	20:18:46	4.03	126.39	47	5.4	0.0126	0.0221	0.0179	Talaud Islands, Indonesia PGN = Info Gempa Mag:5.2 SR, 14-Oct-16 03:18:45 WIB, Lok:4.17 LU,126.43 BT (34 km BaratLaut KEP-TALAUD-SULUT), Kedlmn:46 Km ::BMKG
74	14/10/2016	01:21:05	-0.03	123.20	142	2.8	-	-	-	Minahassa Peninsula, Sulawesi
75	14/10/2016	04:04:58	5.17	126.21	127	4.2	-	-	-	Mindanao, Philippines
76	14/10/2016	04:51:37	-0.11	122.88	146	4.3	-	-	-	Minahassa Peninsula, Sulawesi
77	14/10/2016	11:48:40	1.74	127.47	110	4.1	0.0191	0.0165	0.0180	Halmahera, Indonesia
78	14/10/2016	13:47:21	0.53	122.48	87	2.4	-	-	-	Minahassa Peninsula, Sulawesi
79	14/10/2016	15:54:56	1.80	127.42	114	3.5	-	-	-	Halmahera, Indonesia
80	14/10/2016	19:03:50	2.84	127.73	113	3.7	-	-	-	Northern Molucca Sea
81	14/10/2016	20:52:06	6.11	125.44	107	4.8	-	-	-	Mindanao, Philippines
82	14/10/2016	22:58:31	0.92	119.36	10	3.9	-	-	-	Minahassa Peninsula, Sulawesi
83	14/10/2016	23:40:15	2.06	126.46	29	3.6	-	-	-	Northern Molucca Sea
84	15/10/2016	01:21:29	4.70	125.23	84	4.0	-	-	-	Talaud Islands, Indonesia
85	15/10/2016	04:49:47	-0.15	122.93	117	2.8	-	-	-	Minahassa Peninsula, Sulawesi
86	15/10/2016	07:49:36	0.94	121.68	25	2.6	-	-	-	Minahassa Peninsula, Sulawesi
87	15/10/2016	18:03:32	0.45	122.08	164	2.0	-	-	-	Minahassa Peninsula, Sulawesi
88	15/10/2016	19:32:03	6.02	126.16	139	4.4	-	-	-	Mindanao, Philippines
89	16/10/2016	05:09:58	0.86	124.99	80	3.9	-	-	-	Minahassa Peninsula, Sulawesi
90	16/10/2016	16:34:37	1.71	127.25	111	3.8	-	-	-	Halmahera, Indonesia
91	16/10/2016	17:26:51	1.72	122.61	37	2.2	-	-	-	Minahassa Peninsula, Sulawesi
92	16/10/2016	17:27:18	1.96	126.91	10	3.0	-	-	-	Northern Molucca Sea
93	16/10/2016	20:16:26	0.65	123.05	10	3.0	-	-	-	Minahassa Peninsula, Sulawesi
94	16/10/2016	20:30:24	3.93	126.07	73	4.3	0.0144	0.0136	0.0147	Talaud Islands, Indonesia
95	16/10/2016	21:02:11	1.61	121.76	10	3.3	-	-	-	Minahassa Peninsula, Sulawesi
96	17/10/2016	05:11:30	4.53	126.18	96	4.2	-	-	-	Talaud Islands, Indonesia
97	17/10/2016	08:56:48	0.27	124.05	81	3.1	-	-	-	Minahassa Peninsula, Sulawesi
98	18/10/2016	03:27:09	1.22	122.81	10	2.6	-	-	-	Minahassa Peninsula, Sulawesi
99	18/10/2016	07:45:10	0.24	122.80	10	3.2	-	-	-	Minahassa Peninsula, Sulawesi
100	18/10/2016	16:00:16	1.19	121.34	13	2.9	-	-	-	Minahassa Peninsula, Sulawesi
101	18/10/2016	17:01:48	1.77	126.13	29	3.8	-	-	-	Northern Molucca Sea
102	19/10/2016	04:54:52	1.09	126.28	65	5.0	-	-	-	Northern Molucca Sea
103	19/10/2016	17:16:21	3.88	126.93	74	4.2	-	-	-	Talaud Islands, Indonesia
104	19/10/2016	17:58:00	2.08	127.68	12	4.3	-	-	-	Northern Molucca Sea
105	19/10/2016	20:40:25	-0.10	123.24	127	3.3	-	-	-	Minahassa Peninsula, Sulawesi
106	20/10/2016	02:02:18	6.30	125.90	10	4.3	-	-	-	Mindanao, Philippines
107	20/10/2016	02:45:38	6.27	126.90	155	4.5	-	-	-	Mindanao, Philippines
108	20/10/2016	08:15:05	3.42	125.90	23	3.5	-	-	-	Talaud Islands, Indonesia
109	20/10/2016	08:38:34	1.52	127.25	131	4.5	-	-	-	Halmahera, Indonesia
110	20/10/2016	10:39:26	2.60	127.50	18	3.9	-	-	-	Northern Molucca Sea
111	20/10/2016	11:36:32	0.52	122.07	154	2.2	-	-	-	Minahassa Peninsula, Sulawesi
112	21/10/2016	04:50:34	1.29	126.46	44	4.3	-	-	-	Northern Molucca Sea
113	21/10/2016	05:44:58	0.16	122.60	118	3.1	-	-	-	Minahassa Peninsula, Sulawesi
114	21/10/2016	09:19:10	1.46	127.16	115	4.1	-	-	-	Halmahera, Indonesia

115	21/10/2016	10:34:16	4.13	126.35	42	4.7	-	-	-	Talaud Islands, Indonesia
116	21/10/2016	16:10:53	1.94	127.29	96	4.9	-	-	-	Halmahera, Indonesia PGN = Info Gempa Mag:5.2 SR, 21-Oct-16 23:10:53 WIB, Lok:1.97 LU,127.25 BT (78 km BaratLaut HALMAHERABARAT-MALUT), Kedlmn:42 Km ::BMKG
117	22/10/2016	11:51:21	4.07	117.38	12	4.5	-	-	-	Borneo
118	22/10/2016	18:30:37	0.25	124.13	90	2.8	-	-	-	Minahassa Peninsula, Sulawesi
119	23/10/2016	08:21:52	1.05	121.16	10	2.2	-	-	-	Minahassa Peninsula, Sulawesi
120	23/10/2016	08:46:36	2.34	127.27	29	3.9	-	-	-	Northern Molucca Sea
121	23/10/2016	11:21:42	-0.97	127.25	10	2.8	-	-	-	Halmahera, Indonesia
122	23/10/2016	13:06:40	0.38	122.08	168	2.3	-	-	-	Minahassa Peninsula, Sulawesi
123	23/10/2016	21:25:57	1.85	127.20	76	4.5	-	-	-	Halmahera, Indonesia
124	24/10/2016	01:59:30	0.56	127.95	10	3.2	-	-	-	Halmahera, Indonesia
125	24/10/2016	09:07:29	-0.18	121.44	14	2.6	-	-	-	Minahassa Peninsula, Sulawesi
126	24/10/2016	10:15:21	2.89	128.40	10	4.6	-	-	-	Halmahera, Indonesia
127	24/10/2016	13:46:35	3.15	129.69	360	4.3	-	-	-	North of Halmahera, Indonesia
128	24/10/2016	14:03:00	-0.22	125.60	17	3.2	-	-	-	Southern Molucca Sea
129	24/10/2016	16:54:06	1.59	122.99	10	2.4	-	-	-	Minahassa Peninsula, Sulawesi
130	24/10/2016	17:43:15	0.12	122.79	111	2.5	-	-	-	Minahassa Peninsula, Sulawesi
131	24/10/2016	21:43:09	-0.02	125.24	10	4.3	-	-	-	Southern Molucca Sea
132	25/10/2016	08:24:34	1.58	127.34	147	4.6	-	-	-	Halmahera, Indonesia
133	26/10/2016	13:36:46	2.65	128.27	150	4.8	-	-	-	Halmahera, Indonesia
134	26/10/2016	18:55:47	0.37	122.10	158	2.1	-	-	-	Minahassa Peninsula, Sulawesi
135	26/10/2016	19:34:41	1.25	120.34	10	3.1	-	-	-	Minahassa Peninsula, Sulawesi
136	27/10/2016	03:53:08	1.16	120.40	13	3.6	-	-	-	Minahassa Peninsula, Sulawesi
137	27/10/2016	06:30:58	-0.03	123.57	138	3.9	-	-	-	Minahassa Peninsula, Sulawesi
138	27/10/2016	08:17:51	1.38	125.78	82	5.8	1.4386	1.4185	2.1680	Northern Molucca Sea; Pusat gempa berada di laut 75km Tenggara Bitung, SULUT; dirasakan di Manado, Bitung, Tondano, Kotamobagu, Boltim, Tagulandang (4 MMI) di Tahuna & Melonguane (3 MMI). PGN = Info Gempa Mag:6.1 SR, 27-Oct-16 15:17:49 WIB, Lok:1.32 LU,125.79 BT (75 km Tenggara BITUNG-SULUT), Kedlmn:10 Km::BMKG
139	27/10/2016	12:08:27	5.60	126.91	95	4.2	-	-	-	Mindanao, Philippines
140	27/10/2016	15:57:00	-0.31	122.93	10	3.2	-	-	-	Minahassa Peninsula, Sulawesi
141	27/10/2016	18:08:08	1.31	125.79	26	3.5	-	-	-	Northern Molucca Sea
142	27/10/2016	20:17:35	0.31	121.63	113	2.5	-	-	-	Minahassa Peninsula, Sulawesi
143	27/10/2016	23:48:21	0.84	126.10	10	4.3	0.03167	0.0416	0.0452	Northern Molucca Sea
144	28/10/2016	16:51:32	1.89	126.25	19	3.8	-	-	-	Northern Molucca Sea
145	28/10/2016	03:04:30	0.31	121.83	26	2.1	-	-	-	Minahassa Peninsula, Sulawesi
146	28/10/2016	00:39:15	-0.05	123.26	149	3.3	-	-	-	Minahassa Peninsula, Sulawesi
147	29/10/2016	02:08:24	0.29	122.53	103	4.0	-	-	-	Minahassa Peninsula, Sulawesi
148	29/10/2016	07:31:52	0.21	123.77	118	3.5	-	-	-	Minahassa Peninsula, Sulawesi
149	29/10/2016	09:27:05	0.28	126.03	10	3.9	-	-	-	Northern Molucca Sea
150	30/10/2016	03:03:34	0.76	120.42	10	3.1	-	-	-	Minahassa Peninsula, Sulawesi
151	30/10/2016	20:13:55	0.23	126.35	39	4.4	-	-	-	Northern Molucca Sea
152	30/10/2016	22:02:44	1.89	126.91	10	3.1	-	-	-	Northern Molucca Sea
153	30/10/2016	23:03:30	-0.57	123.31	10	3.6	-	-	-	Minahassa Peninsula, Sulawesi
154	31/10/2016	01:08:19	-0.53	123.23	10	4.7	-	-	-	Minahassa Peninsula, Sulawesi
155	31/10/2016	06:27:16	0.25	122.22	151	2.1	-	-	-	Minahassa Peninsula, Sulawesi
156	31/10/2016	06:36:24	0.10	122.65	111	1.9	-	-	-	Minahassa Peninsula, Sulawesi
157	31/10/2016	12:16:11	-0.48	123.71	10	4.0	-	-	-	Minahassa Peninsula, Sulawesi
158	31/10/2016	13:59:40	5.04	127.16	10	4.1	-	-	-	Philippine Islands Region
159	31/10/2016	14:06:50	0.78	122.48	96	2.4	-	-	-	Minahassa Peninsula, Sulawesi
160	31/10/2016	16:25:56	7.60	127.39	68	4.5	-	-	-	Philippine Islands Region
161	31/10/2016	16:35:33	1.12	127.12	17	2.2	-	-	-	Halmahera, Indonesia
162	31/10/2016	22:27:06	1.23	126.47	30	3.5	-	-	-	Northern Molucca Sea

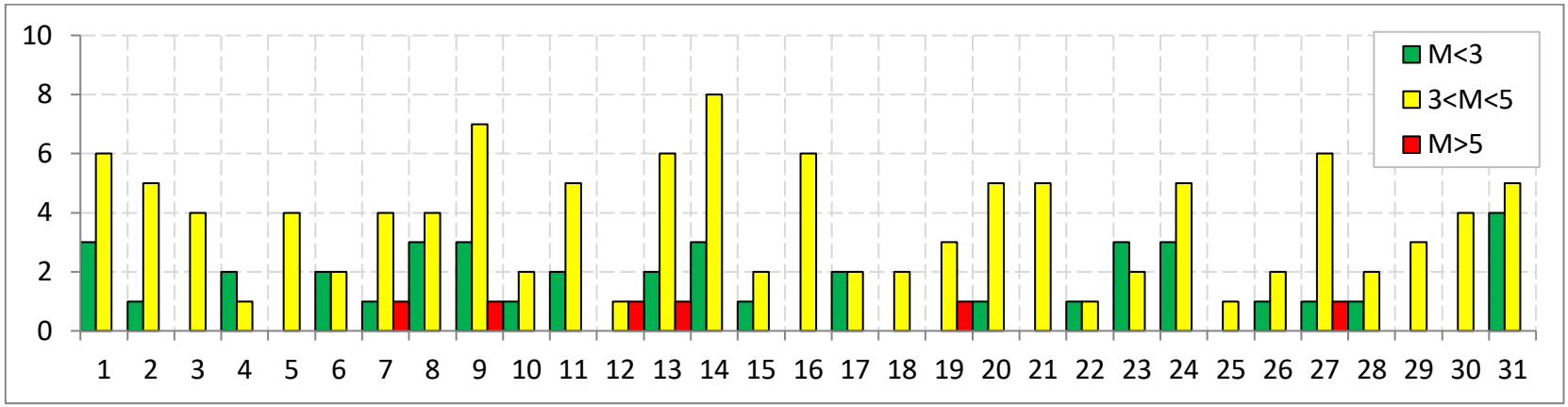
Peta 11. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Oktober 2016



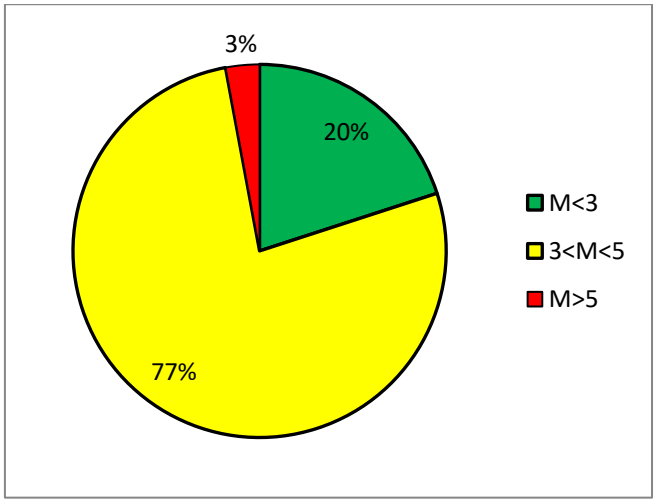
Tabel 20. Rekapitulasi Gempabumi Berdasarkan Magnitudo Bulan Oktober 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	3	6	0	9	0	0
2	1	5	0	6	0	0
3	0	4	0	4	0	0
4	2	1	0	3	0	0
5	0	4	0	4	0	0
6	2	2	0	4	0	0
7	1	4	1	6	1	0
8	3	4	0	7	0	0
9	3	7	1	11	1	0
10	1	2	0	3	0	0
11	2	5	0	7	0	0
12	0	1	1	2	0	0
13	2	6	1	9	0	0
14	3	8	0	11	0	0
15	1	2	0	3	0	0
16	0	6	0	6	0	0
17	2	2	0	4	0	0
18	0	2	0	2	0	0
19	0	3	1	4	0	0
20	1	5	0	6	0	0
21	0	5	0	5	0	0
22	1	1	0	2	0	0
23	3	2	0	5	0	0
24	3	5	0	8	0	0
25	0	1	0	1	0	0
26	1	2	0	3	0	0
27	1	6	1	8	1	0
28	1	2	0	3	0	0
29	0	3	0	3	0	0
30	0	4	0	4	0	0
31	4	5	0	9	0	0
Jumlah gempa	41	115	6	162	3	0
Jumlah gempa seluruhnya						

Histogram 19. Gempabumi Berdasarkan Magnitudo
Bulan Oktober 2016



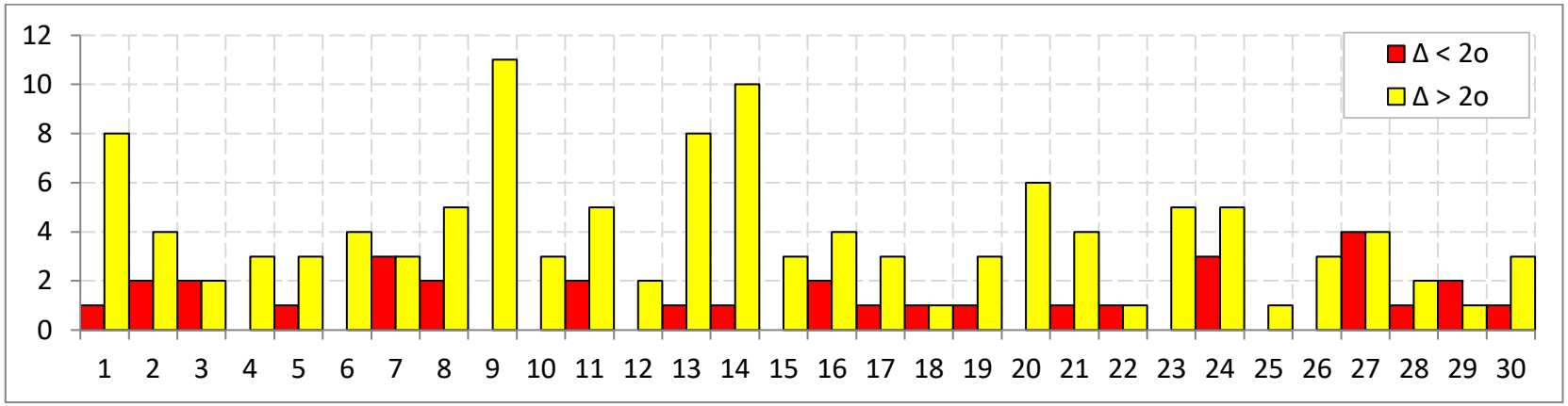
Persentase 21. Gempabumi Berdasarkan Magnitudo
Bulan Oktober 2016



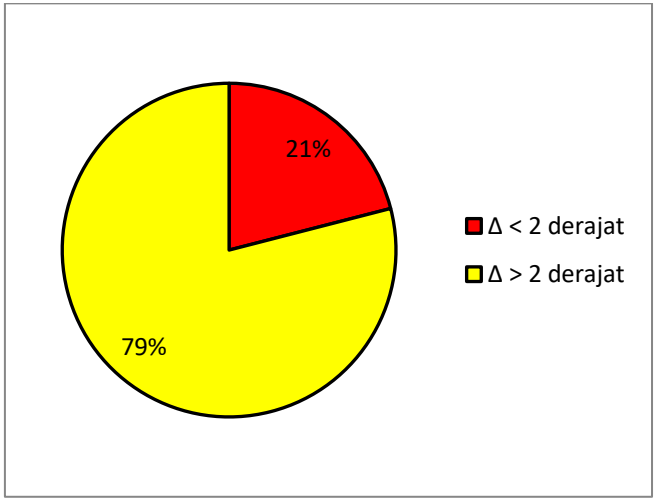
Tabel 21. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan Oktober 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/10/2016	1	8	9	-
02/10/2016	2	4	6	-
03/10/2016	2	2	4	-
04/10/2016	0	3	3	-
05/10/2016	1	3	4	-
06/10/2016	0	4	4	-
07/10/2016	3	3	6	-
08/10/2016	2	5	7	-
09/10/2016	0	11	11	-
10/10/2016	0	3	3	-
11/10/2016	2	5	7	-
12/10/2016	0	2	2	-
13/10/2016	1	8	9	-
14/10/2016	1	10	11	-
15/10/2016	0	3	3	-
16/10/2016	2	4	6	-
17/10/2016	1	3	4	-
18/10/2016	1	1	2	-
19/10/2016	1	3	4	-
20/10/2016	0	6	6	-
21/10/2016	1	4	5	-
22/10/2016	1	1	2	-
23/10/2016	0	5	5	-
24/10/2016	3	5	8	-
25/10/2016	0	1	1	-
26/10/2016	0	3	3	-
27/10/2016	4	4	8	-
28/10/2016	1	2	3	-
29/10/2016	2	1	3	-
30/10/2016	1	3	4	-
31/10/2016	1	8	9	
Jumlah gempa	34	128	162	-
Jumlah gempa seluruhnya				

Histogram 20. Gempabumi Berdasarkan Jarak
Bulan Oktober 2016



Persentase 22. Gempabumi Berdasarkan Jarak
Bulan Oktober 2016



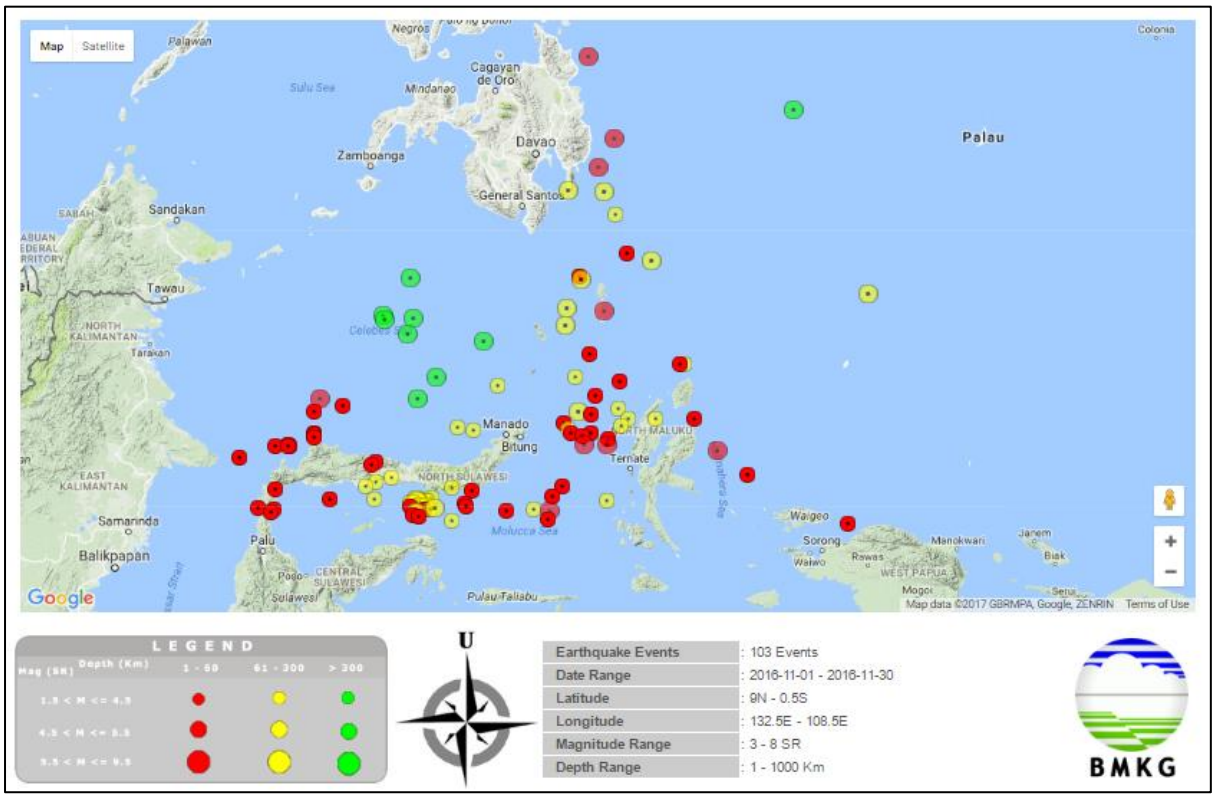
Data Gempabumi Bulan Nopember 2016

NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (Km)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	2016-11-01	12:53:36	0.729	121.974	75.8	2.8				Minahassa Peninsula
2	2016-11-01	18:26:08	3.761	125.7	10	3.9				Talaud Islands
3	2016-11-01	18:50:03	2.223	120.672	10	3.6				Celebes Sea
4	2016-11-01	20:23:04	-0.166	122.889	9.7	3.1				Minahassa Peninsula Peninsula
5	2016-11-02	03:23:20	0.251	121.407	60	2.7				Minahassa Peninsula
6	2016-11-02	05:46:50	2.072	123.003	422.3	4.5				Celebes Sea
7	2016-11-02	14:16:51	1.741	126.599	10	3.7				Northern Molucca Sea
8	2016-11-02	20:14:35	1.195	121.332	4.7	2.3				Minahassa Peninsula
9	2016-11-03	04:07:48	0.053	123.25	136.5	2.8				Minahassa Peninsula
10	2016-11-03	15:21:10	5.896	126.033	174.8	4.8				Mindanao
11	2016-11-03	16:33:25	-0.2625	122.873	10	2.9				Minahassa Peninsula
12	2016-11-03	16:44:32	3.644	122.314	580.7	4.4				Celebes Sea
13	2016-11-03	22:12:00	1.304	124.186	260	4.4				Minahassa Peninsula
14	2016-11-04	00:52:17	-0.1751	122.787	23	2.7				Minahassa Peninsula
15	2016-11-04	12:12:04	-0.056	123.048	105.5	2.6				Minahassa Peninsula
16	2016-11-04	17:23:16	1.124	126.958	28.7	4.7	0.0145	0.0272	0.0274	Northern Molucca Sea
17	2016-11-04	20:54:29	0.632	122.23	92	2.4				Minahassa Peninsula
18	2016-11-04	23:31:21	0.967	122.048	10	2.8				Minahassa Peninsula
19	2016-11-05	12:10:35	2.394	121.436	10	3.6				Celebes Sea
20	2016-11-05	14:31:39	6.267	126.985	77.6	5				Mindanao
21	2016-11-05	18:32:56	1.813	128.758	10	4				Halmahera
22	2016-11-06	13:41:00	1.289	126.37	15	4				Northern Molucca Sea
23	2016-11-06	21:48:26	-0.5996	123.203	10	3.3				Minahassa Peninsula
24	2016-11-07	03:26:30	1.841	127.366	130	4.1	0.0678	0.0437	0.0305	Halmahera
25	2016-11-07	07:29:49	3.839	126.006	137.2	4.5	0.0207	0.0259	0.0305	Talaud Islands
26	2016-11-07	15:14:40	-0.3464	121.552	1.4	2.6				Minahassa Peninsula
27	2016-11-07	15:44:35	0.716	126.782	12.7	3.8				Northern Molucca Sea
28	2016-11-07	18:16:48	-0.1657	123.4	101.7	4.4				Minahassa Peninsula
29	2016-11-07	20:09:02	0.219	120.253	19	3.9				Minahassa Peninsula
30	2016-11-07	21:03:52	-0.6689	120.916	10	3.3				Minahassa Peninsula
31	2016-11-07	23:07:08	0.902	126.118	10	3.6				Northern Molucca Sea
32	2016-11-08	08:35:19	0.814	120.017	10	3.7				Minahassa Peninsula
33	2016-11-08	13:48:34	-0.2502	121.854	6.8	2.7				Minahassa Peninsula
34	2016-11-08	14:07:01	1.024	119.749	10	3.1				Celebes Sea
35	2016-11-08	15:31:16	4.99	127.282	116.8	4.1				Talaud Islands
36	2016-11-08	18:00:58	5.802	126.987	109.3	4.4				Mindanao
37	2016-11-08	20:03:58	1.401	123.8	300.5	3.6				Minahassa Peninsula
38	2016-11-09	05:37:18	1.645	127.071	10	3.8	0.0237	0.0157	0.0170	Halmahera
39	2016-11-09	06:52:48	-0.6812	123.567	10	3.8				Minahassa Peninsula
40	2016-11-09	10:40:22	-0.0824	120.141	10	3.1				Minahassa Peninsula
41	2016-11-09	10:50:50	-0.2251	123.008	74.1	3.2				Minahassa Peninsula
42	2016-11-09	14:13:40	3.488	126.387	152.7	3.5				Talaud Islands
43	2016-11-09	17:33:36	4.848	125.995	10	3.9				Talaud Islands
44	2016-11-10	02:21:34	-0.1087	123.169	104.8	3.9				Minahassa Peninsula
45	2016-11-10	10:27:03	-0.2723	123.056	49	3.4				Minahassa Peninsula
46	2016-11-10	17:37:41	4.822	125.719	10	3.9				Talaud Islands
47	2016-11-11	08:28:07	2.985	126.647	10	4.5				Northern Molucca Sea
48	2016-11-11	13:37:27	2.944	126.623	10	4.4				Northern Molucca Sea
49	2016-11-11	21:01:23	2.389	127.214	27.7	3.9				Northern Molucca Sea
50	2016-11-12	10:49:42	-0.3195	124.465	10	3.9	0.0185	0.0118	0.0166	Southern Molucca Sea
51	2016-11-12	19:56:42	2.091	126.12	10	3.5				Northern Molucca Sea
52	2016-11-13	05:54:15	0.349	122.139	224.2	3.3				Minahassa Peninsula
53	2016-11-13	18:01:34	2.763	128.41	10	3.9				Halmahera
54	2016-11-14	05:42:36	0.107	124.095	25	4				Minahassa Peninsula
55	2016-11-14	06:53:05	-0.0582	123.066	139	4.4				Minahassa Peninsula
56	2016-11-14	10:22:45	0.069	123.962	119.3	3.6				Minahassa Peninsula
57	2016-11-14	12:18:22	1.404	126.041	10	3.6	0.0292	0.0309	0.0326	Northern Molucca Sea
58	2016-11-14	15:45:06	-0.124	123.413	80.1	3.3				Minahassa Peninsula
59	2016-11-14	19:12:56	3.556	127.705	206.7	3.6				Talaud Islands
60	2016-11-14	19:45:39	0.987	127.045	133.1	3				Halmahera
61	2016-11-14	20:59:59	0.281	122.4	110.6	2.4				Minahassa Peninsula
62	2016-11-14	21:52:16	0.381	122.207	185.3	3.5				Minahassa Peninsula
63	2016-11-15	00:53:51	0.861	121.06	17.3	2.4				Minahassa Peninsula
64	2016-11-15	06:04:54	0.429	122.555	64.7	3.1				Minahassa Peninsula

65	2016-11-15	06:24:11	0.011	123.23	133.9	3.1				Minahassa Peninsula
66	2016-11-15	22:46:39	-0.5532	125.158	10	3.8				Southern Molucca Sea
67	2016-11-16	01:06:24	2.413	128.23	448.1	4.5				Halmahera
68	2016-11-16	12:22:37	1.167	120.908	12.8	2.8				Minahassa Peninsula
69	2016-11-16	14:24:24	3.257	122.894	505.9	4				Celebes Sea
70	2016-11-17	04:10:14	1.473	120.909	10	3.7				Minahassa Peninsula
71	2016-11-17	04:49:45	2.8	128.443	57.6	4				Halmahera
72	2016-11-17	12:49:14	2.259	128.258	181.8	3.6				Halmahera
73	2016-11-17	14:07:51	1.025	129.247	21.2	4.6				Halmahera
74	2016-11-18	02:53:39	0.017	125.794	10	3.9	0.0560	-0.0204	0.0324	Northern Molucca Sea
75	2016-11-18	21:46:17	-0.0695	123.281	147.1	3.9				Minahassa Peninsula
76	2016-11-19	01:53:30	1.686	126.257	10	4.8	0.0565	0.0805	0.0933	Northern Molucca Sea
77	2016-11-19	03:55:19	-0.1173	124.077	95.7	4.2				Southern Molucca Sea
78	2016-11-19	15:09:13	1.376	127.023	10	3.1				Halmahera
79	2016-11-19	17:36:27	3.459	126.042	60.3	5.3	0.0242	0.0355	0.0368	Talaud Islands PGN = Info Gempa Mag:5.2 SR, 20-Nov-16 00:36:27 WIB, Lok:3.41 LU,126.06 BT (68 km Tenggara KEP-SANGIHE-SULUT), Kedlmn:34 Km::BMKG
80	2016-11-19	19:31:02	4.986	127.905	60	4.6				Talaud Islands
81	2016-11-19	21:43:29	0.065	122.2	241.1	4.2				Minahassa Peninsula
82	2016-11-19	23:01:12	3.702	123.009	562	4.9				Celebes Sea
83	2016-11-20	02:32:16	0.214	125.958	10	3.8				Northern Molucca Sea
84	2016-11-20	20:39:18	0.004	121.198	12.2	3				Minahassa Peninsula
85	2016-11-20	23:11:37	1.214	126.207	10	3.9				Northern Molucca Sea
86	2016-11-21	13:00:19	0.326	121.764	149.6	2.4				Minahassa Peninsula
87	2016-11-21	16:29:30	-0.9831	128.724	10	3.9				Halmahera
88	2016-11-21	23:47:55	-0.181	122.955	91.1	3.1				Minahassa Peninsula
89	2016-11-22	12:15:52	0.798	122.21	10	3.3				Minahassa Peninsula
90	2016-11-22	12:41:44	0.715	122.202	2.3	1.9				Minahassa Peninsula
91	2016-11-22	17:41:32	-0.3136	122.998	54.7	3				Minahassa Peninsula
92	2016-11-22	20:38:48	1.502	128.109	142.6	3.7				Halmahera
93	2016-11-22	23:16:49	-0.1239	122.892	108.7	2.7				Minahassa Peninsula
94	2016-11-23	11:37:31	1.704	125.92	74.1	3.7				Northern Molucca Sea
95	2016-11-23	12:40:53	-0.4581	119.79	10	3.2				Minahassa Peninsula
96	2016-11-23	15:22:46	1.06	126.35	10	4.3				Northern Molucca Sea
97	2016-11-23	17:17:32	4.464	126.429	86.7	5				Talaud Islands PGN = Info Gempa Mag:5.0 SR, 24-Nov-16 00:17:34 WIB, Lok:4.35 LU,126.39 BT (49 km BaratLaut KEP-TALAUD-SULUT), Kedlmn:62 Km ::BMKG
98	2016-11-23	23:56:41	-0.1406	122.529	37.5	2.9				Minahassa Peninsula
99	2016-11-24	06:35:57	-0.0537	123.332	146.5	3.1				Minahassa Peninsula
100	2016-11-24	15:29:51	4.692	127.424	67.6	4.1				Talaud Islands
101	2016-11-24	19:49:26	-0.0337	126.964	120	3.2				Southern Molucca Sea
102	2016-11-25	08:01:25	-0.2048	123.83	133	3.4				Minahassa Peninsula
103	2016-11-25	13:49:57	-0.7925	128.122	10	3.4				Halmahera
104	2016-11-25	13:57:14	3.457	125.951	29.3	4.2				Talaud Islands
105	2016-11-25	16:44:23	-0.0738	123.217	129.9	2.7				Minahassa Peninsula
106	2016-11-25	18:37:05	0.564	120.923	44.6	2.4				Minahassa Peninsula
107	2016-11-25	20:14:18	1.342	125.834	24	3.8				Northern Molucca Sea
108	2016-11-26	04:54:28	7.748	127.524	10	4.8				Philippine
109	2016-11-26	07:38:26	0.835	122.153	50.3	2.6				Minahassa Peninsula
110	2016-11-26	07:55:53	6.863	126.387	129.2	4.6				Mindanao
111	2016-11-26	12:42:27	1.475	120.873	10	4.3				Minahassa Peninsula
112	2016-11-26	19:01:29	-0.1888	121.575	1.6	2.8				Minahassa Peninsula
113	2016-11-26	19:14:52	0.047	123.348	132.3	2.5				Minahassa Peninsula
114	2016-11-26	21:14:26	5.31	123.113	650.1	4.1				Mindanao
115	2016-11-27	05:33:18	2.315	126.164	10	4.1				Northern Molucca Sea
116	2016-11-27	05:41:48	2.156	120.875	10	4.6				Celebes Sea
117	2016-11-27	08:46:40	0.58	129.842	10	4				Halmahera
118	2016-11-27	13:36:53	4.543	126.347	62.7	4.2				Talaud Islands
119	2016-11-27	14:02:48	1.937	128.793	10	3.4				Halmahera
120	2016-11-27	14:30:10	-0.0673	123.003	125	2.9				Minahassa Peninsula
121	2016-11-27	15:01:47	-0.0814	123.452	125.1	3.1				Minahassa Peninsula
122	2016-11-27	19:36:17	-0.0102	123.121	150.4	3.1				Minahassa Peninsula
123	2016-11-27	21:41:03	1.206	124.87	172.7	3.3				Minahassa Peninsula
124	2016-11-29	03:53:52	-0.2714	125.753	10	5				Southern Molucca Sea

125	2016-11-29	10:25:47	-0.1619	123.095	12	3.9				Minahassa Peninsula
126	2016-11-29	14:59:53	-0.324	123.146	52.6	3.6				Minahassa Peninsula
127	2016-11-30	06:40:10	2.818	123.348	463.9	4.9				Celebes Sea
128	2016-11-30	15:59:18	1.506	127.222	108.1	4				Halmahera
129	2016-11-30	17:08:29	3.211	124.409	346.9	4.4				Celebes Sea

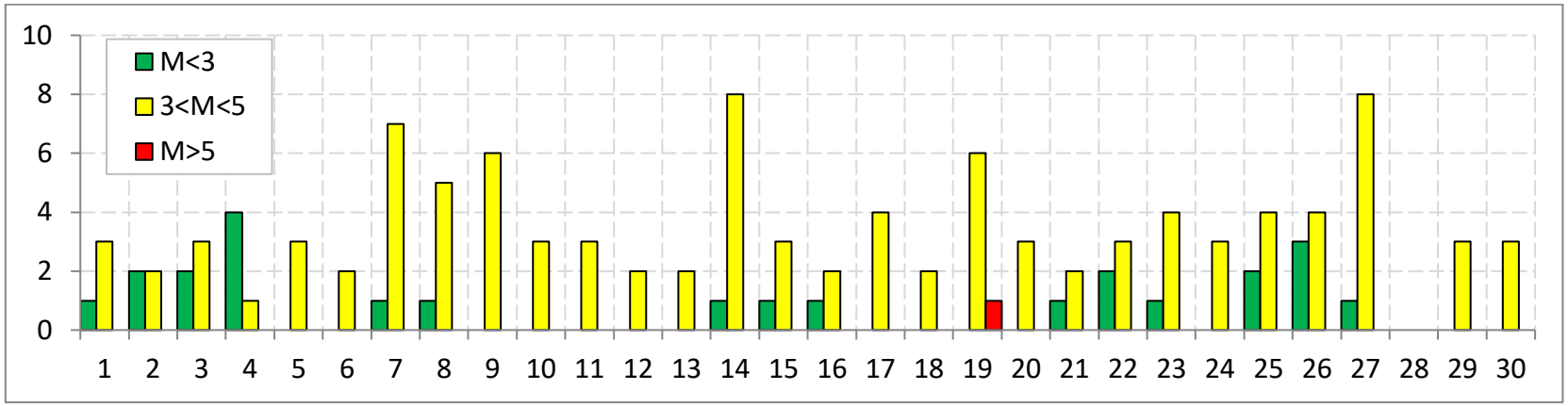
Peta 12. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Nopember 2016



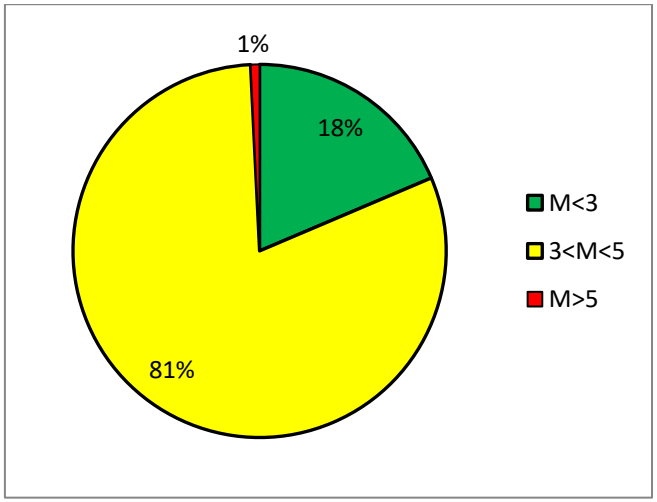
Tabel 22. Rekapitulasi Gempabumi Berdasarkan Magnitudo Bulan Nopember 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	1	3	0	4	0	0
2	2	2	0	4	0	0
3	2	3	0	5	0	0
4	4	1	0	5	0	0
5	0	3	0	3	0	0
6	0	2	0	2	0	0
7	1	7	0	8	0	0
8	1	5	0	6	0	0
9	0	6	0	6	0	0
10	0	3	0	3	0	0
11	0	3	0	3	0	0
12	0	2	0	2	0	0
13	0	2	0	2	0	0
14	1	8	0	9	0	0
15	1	3	0	4	0	0
16	1	2	0	3	0	0
17	0	4	0	4	0	0
18	0	2	0	2	0	0
19	0	6	1	7	0	0
20	0	3	0	3	0	0
21	1	2	0	3	0	0
22	2	3	0	5	0	0
23	1	4	0	5	0	0
24	0	3	0	3	0	0
25	2	4	0	6	0	0
26	3	4	0	7	0	0
27	1	8	0	9	0	0
28	0	0	0	0	0	0
29	0	3	0	3	0	0
30	0	3	0	3	0	0
Jumlah gempa	24	104	1	129	0	0
Jumlah gempa seluruhnya						

Histogram 21. Gempabumi Berdasarkan Magnitudo
Bulan Nopember 2016



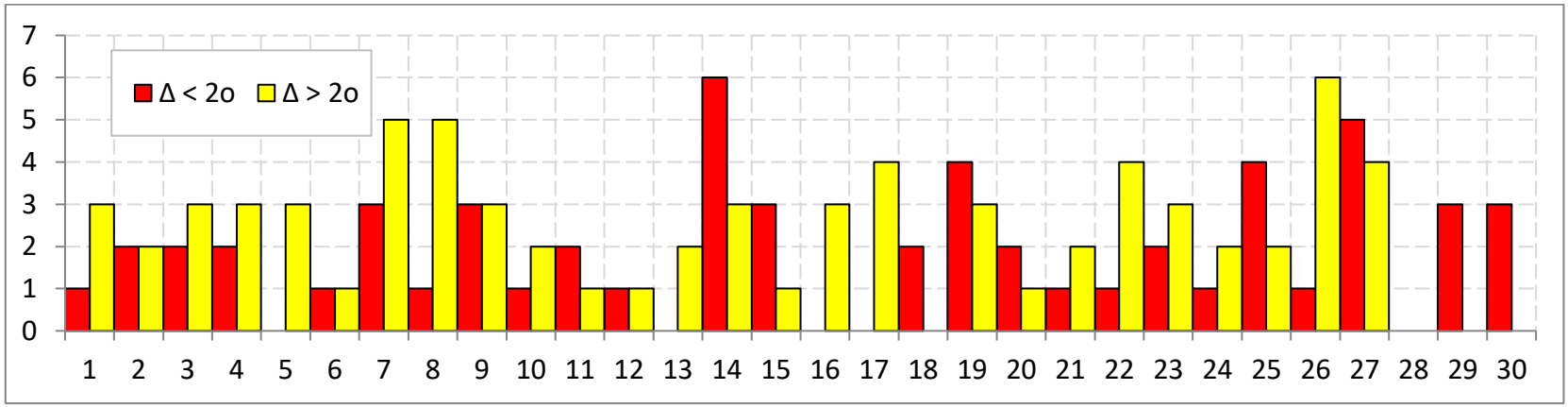
Persentase 23. Gempabumi Berdasarkan Magnitudo
Bulan Nopember 2016



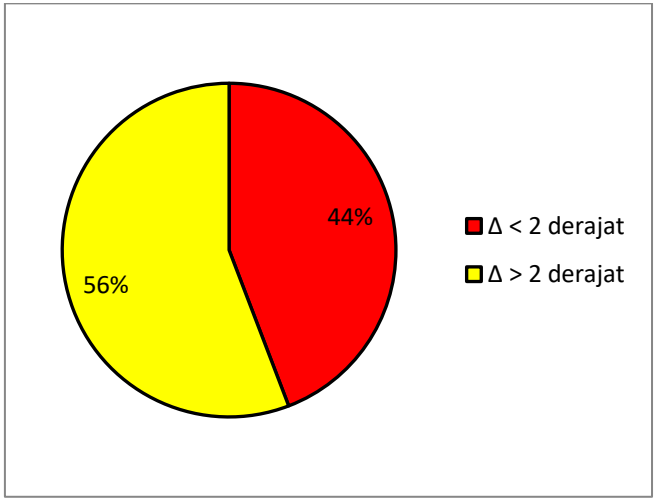
Tabel 23. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan Nopember 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/11/2016	1	3	4	-
02/11/2016	2	2	4	-
03/11/2016	2	3	5	-
04/11/2016	2	3	5	-
05/11/2016	0	3	3	-
06/11/2016	1	1	2	-
07/11/2016	3	5	8	-
08/11/2016	1	5	6	-
09/11/2016	3	3	6	-
10/11/2016	1	2	3	-
11/11/2016	2	1	3	-
12/11/2016	1	1	2	-
13/11/2016	0	2	2	-
14/11/2016	6	3	9	-
15/11/2016	3	1	4	-
16/11/2016	0	3	3	-
17/11/2016	0	4	4	-
18/11/2016	2	0	2	-
19/11/2016	4	3	7	-
20/11/2016	2	1	3	-
21/11/2016	1	2	3	-
22/11/2016	1	4	5	-
23/11/2016	2	3	5	-
24/11/2016	1	2	3	-
25/11/2016	4	2	6	-
26/11/2016	1	6	7	-
27/11/2016	5	4	9	-
28/11/2016	0	0	0	-
29/11/2016	3	0	3	-
30/11/2016	3	0	3	-
Jumlah gempa	57	72	129	-
Jumlah gempa seluruhnya				

Histogram 22. Gempabumi Berdasarkan Jarak
Bulan Nopember 2016



Persentase 24. Gempabumi Berdasarkan Jarak
Bulan Nopember 2016



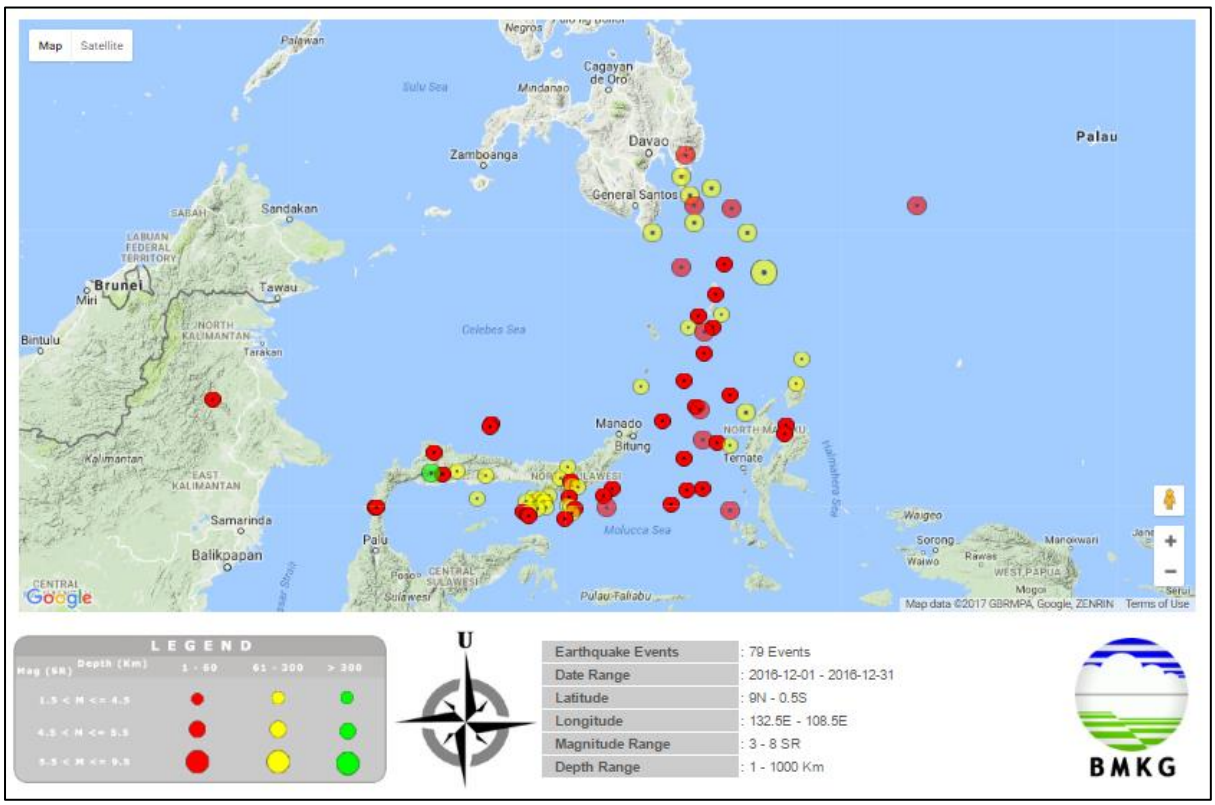
Data Gempabumi Bulan Desember 2016

NO	Tanggal	Waktu (UTC)	Episenter		Kedalaman (Km)	Mag (SR)	PGA (gals)			Wilayah
			Lintang	Bujur			X	Y	Z	
1	01/12/2016	00:44:25	1.07	121.4	10	2.6				Minahassa Peninsula, Sulawesi
2	01/12/2016	09:37:30	4.15	126.8	28	4.3				Talaud Islands, Indonesia
3	01/12/2016	14:20:04	-0.2	123.8	82	4				Minahassa Peninsula, Sulawesi
4	01/12/2016	16:15:14	-0.2	123.9	80	3.9				Minahassa Peninsula, Sulawesi
5	01/12/2016	17:18:56	5.58	126.4	124	4.6	0.072	0.065	0.068	Mindanao, Philippines
6	02/12/2016	02:58:03	-0.1	123	149	3.6				Minahassa Peninsula, Sulawesi
7	02/12/2016	03:40:22	2.29	125.3	148	4.2				Talaud Islands, Indonesia
8	02/12/2016	04:57:21	-0.1	125.9	15	3.6				Southern Molucca Sea
9	02/12/2016	08:10:50	-0.3	122.9	10	2.4				Minahassa Peninsula, Sulawesi
10	02/12/2016	20:05:26	0.3	122.5	102	2.2	0.059	0.061	0.785	Minahassa Peninsula, Sulawesi
11	03/12/2016	02:18:37	5.37	127.5	103	4.6				Philippine Islands Region
12	03/12/2016	02:24:21	5.93	130.9	57	4.8				East of Philippine Islands
13	03/12/2016	07:31:07	0.28	122.2	130	2.5				Minahassa Peninsula, Sulawesi
14	04/12/2016	03:29:57	-0.3	127.1	49	4.6				Halmahera, Indonesia
15	04/12/2016	05:24:07	4.49	127.8	164	5.6				Talaud Islands, Indonesia PGN = Info Gempa Mag:5.6 SR, 04-Dec-16 12:24:09 WIB, Lok:4.33 LU,127.67 BT (110 km TimurLaut KEP-TALAUD-SULUT), Kedlmn:124 Km ::BMKG
16	04/12/2016	12:55:53	0.54	122	167	2.2				Minahassa Peninsula, Sulawesi
17	04/12/2016	21:04:43	0.43	120.2	62	2.7				Minahassa Peninsula, Sulawesi
18	05/12/2016	07:55:22	1.47	122.2	11	3.3				Minahassa Peninsula, Sulawesi
19	05/12/2016	10:26:04	-0.3	122.9	29	3.3				Minahassa Peninsula, Sulawesi
20	05/12/2016	15:38:41	6.94	126.2	50	4.6				Mindanao, Philippines
21	06/12/2016	02:16:54	-0.2	122.7	21	2.7				Minahassa Peninsula, Sulawesi
22	06/12/2016	02:41:42	1.34	121.4	20	2.4				Minahassa Peninsula, Sulawesi
23	06/12/2016	03:10:39	0.01	123	174	2.9				Minahassa Peninsula, Sulawesi
24	06/12/2016	05:30:56	-0.2	121.6	11	2.5				Minahassa Peninsula, Sulawesi
25	07/12/2016	00:53:52	-0.2	123	10	2.5				Minahassa Peninsula, Sulawesi
26	07/12/2016	08:36:21	1.16	126.6	10	4.7	*)	*)	*)	Northern Molucca Sea, Pusat Gempa Berada di laut 80 km Barat Laut Ternate, Malut. Dirasakan di Ternate Utara III MMI
27	07/12/2016	16:25:40	0.48	121	466	3.5				Minahassa Peninsula, Sulawesi
28	07/12/2016	18:06:32	0.33	121.9	140	2				Minahassa Peninsula, Sulawesi
29	07/12/2016	18:34:00	2.09	127.1	11	3.6				Northern Molucca Sea
30	07/12/2016	18:42:07	2	116.6	10	4				Borneo
31	07/12/2016	21:06:53	0.19	126.5	10	4.1				Northern Molucca Sea
32	07/12/2016	23:36:37	1.86	126.4	12	3.8				Northern Molucca Sea
33	07/12/2016	23:50:12	2.4	126.2	10	4.2				Northern Molucca Sea
34	08/12/2016	00:55:09	0.02	123.1	163	4.5				Minahassa Peninsula, Sulawesi
35	08/12/2016	03:35:42	0.38	122	171	2.5				Minahassa Peninsula, Sulawesi
36	08/12/2016	09:28:14	-0.3	123	21	3				Minahassa Peninsula, Sulawesi
37	08/12/2016	10:45:44	-0.2	123	81	2.9				Minahassa Peninsula, Sulawesi
38	08/12/2016	12:23:01	2.96	126.6	10	4.1	0.112	0.061	0.084	Northern Molucca Sea
39	08/12/2016	20:24:17	0.5	121.2	33	3.1				Minahassa Peninsula, Sulawesi
40	08/12/2016	21:01:15	0.34	122.4	95	2.8				Minahassa Peninsula, Sulawesi
41	08/12/2016	21:13:50	0.47	122.1	168	3.5				Minahassa Peninsula, Sulawesi
42	09/12/2016	14:39:31	0.74	122.2	56	2				Minahassa Peninsula, Sulawesi
43	09/12/2016	16:23:12	5.85	127.2	39	4.6				Philippine Islands Region
44	10/12/2016	06:45:06	0.41	121.9	179	2.2				Minahassa Peninsula, Sulawesi
45	11/12/2016	13:58:21	2.35	128.5	228	4.5				Halmahera, Indonesia

46	11/12/2016	14:51:08	2.83	128.6	232	4.3				Halmahera, Indonesia
47	11/12/2016	18:37:30	4.68	126.1	54	4.9				Talaud Islands, Indonesia
48	12/12/2016	16:06:04	-0.3	123.9	83	3.2				Minahassa Peninsula, Sulawesi
49	12/12/2016	19:26:37	-0.2	122.7	18	2.2				Minahassa Peninsula, Sulawesi
50	13/12/2016	04:18:06	-0.2	122.9	94	2.8				Minahassa Peninsula, Sulawesi
51	13/12/2016	06:05:01	6.27	126.7	118	4.9				Mindanao, Philippines
52	13/12/2016	09:09:00	0.01	123.8	19	4.4				Minahassa Peninsula, Sulawesi
53	13/12/2016	17:35:43	3.49	126.3	63	4				Talaud Islands, Indonesia
54	14/12/2016	08:39:55	1.67	122.2	186	2.2				Minahassa Peninsula, Sulawesi
55	14/12/2016	20:08:40	1.48	128.3	53	3.6				Halmahera, Indonesia
56	15/12/2016	00:58:16	3.73	126.9	77	4.4	0.190	0119	0.163	Talaud Islands, Indonesia
57	15/12/2016	02:18:23	0.35	123.9	21	4.3				Minahassa Peninsula, Sulawesi
58	15/12/2016	18:08:15	0.55	121.5	82	3.3				Minahassa Peninsula, Sulawesi
59	16/12/2016	00:08:16	0.05	124.5	10	3.4				Minahassa Peninsula, Sulawesi
60	16/12/2016	08:25:57	-0	123.2	139	3.1				Minahassa Peninsula, Sulawesi
61	16/12/2016	10:37:17	0.34	122.1	145	2.4				Minahassa Peninsula, Sulawesi
62	16/12/2016	18:36:58	-0.3	123	72	4	0.148	0.224	0.371	Minahassa Peninsula, Sulawesi
63	16/12/2016	18:51:03	1.57	125.7	12	3.7				Northern Molucca Sea
64	16/12/2016	20:37:38	0.08	122	160	2.5				Minahassa Peninsula, Sulawesi
65	16/12/2016	22:13:02	0.22	124	182	4.1				Minahassa Peninsula, Sulawesi
66	16/12/2016	22:39:04	1.3	128.2	10	4.3				Halmahera, Indonesia
67	17/12/2016	00:32:43	0.55	121.9	27	2.5				Minahassa Peninsula, Sulawesi
68	17/12/2016	03:02:10	5.37	125.5	187	4.8	0.172	0.158	0.000	Mindanao, Philippines
69	18/12/2016	01:44:45	0.82	126.2	10	4.5	0.518	0.881	0.783	Northern Molucca Sea
70	18/12/2016	06:37:20	0	122	248	3.1				Minahassa Peninsula, Sulawesi
71	18/12/2016	10:35:21	0.83	121.3	25	2.3				Minahassa Peninsula, Sulawesi
72	19/12/2016	00:32:57	0.65	123.8	258	3.2				Minahassa Peninsula, Sulawesi
73	19/12/2016	08:18:07	-0.1	122.9	25	2.3				Minahassa Peninsula, Sulawesi
74	19/12/2016	10:38:37	-0.2	119.9	11	3.7				Minahassa Peninsula, Sulawesi
75	19/12/2016	19:32:11	-0.2	119.9	12	3.5				Minahassa Peninsula, Sulawesi
76	19/12/2016	19:58:02	1.03	122.5	29	2.6				Minahassa Peninsula, Sulawesi
77	20/12/2016	05:35:29	0.17	122.4	27	2.6				Minahassa Peninsula, Sulawesi
78	20/12/2016	10:21:35	3.35	126.6	10	4.8				Talaud Islands, Indonesia
79	20/12/2016	22:51:12	0.16	126.2	14	3.8	0.092	0.079	0.099	Northern Molucca Sea
80	21/12/2016	10:48:22	6.51	126.1	110	4.8				Mindanao, Philippines
81	21/12/2016	11:08:30	4.75	127	10	4.3				Talaud Islands, Indonesia
82	21/12/2016	19:09:41	0.29	122	177	2.2				Minahassa Peninsula, Sulawesi
83	21/12/2016	23:20:40	0.04	123.4	151	3.1				Minahassa Peninsula, Sulawesi
84	22/12/2016	03:19:41	0.07	122.8	107	2.4				Minahassa Peninsula, Sulawesi
85	22/12/2016	03:23:05	-0.2	124	57	4.3				Minahassa Peninsula, Sulawesi
86	22/12/2016	04:41:01	0.65	122.4	73	1.6				Minahassa Peninsula, Sulawesi
87	22/12/2016	05:09:40	1.14	126.8	44	3.9				Northern Molucca Sea
88	22/12/2016	14:08:52	-0.4	123.7	29	3				Minahassa Peninsula, Sulawesi
89	23/12/2016	01:04:24	1.04	122.6	11	2.6				Minahassa Peninsula, Sulawesi
90	23/12/2016	05:02:47	-0	123	146	2.9				Minahassa Peninsula, Sulawesi
91	23/12/2016	09:55:48	-0.1	123.2	136	3.8				Minahassa Peninsula, Sulawesi
92	23/12/2016	19:15:37	-0.2	124.6	16	5.1				Southern Molucca Sea PGN = Info Gempa Mag:5.1 SR, 24-Dec-16 02:15:37 WIB, Lok:0.20 LS,124.58 BT (102 km Tenggara BOLAANGMONGONDOWTMR-SULUT), Kedlmn:23 Km ::BMKG
93	24/12/2016	17:38:58	1.45	122.2	10	2.8				Minahassa Peninsula, Sulawesi
94	24/12/2016	19:33:26	1.51	122.2	10	3.7				Minahassa Peninsula, Sulawesi
95	24/12/2016	20:26:09	5.92	126.4	29	4.8	0.059	0.042	0.066	Mindanao, Philippines
96	25/12/2016	03:16:16	0.92	121.1	13	3				Minahassa Peninsula, Sulawesi
97	25/12/2016	05:18:00	0.19	124.7	25	3.1				Minahassa Peninsula, Sulawesi

98	25/12/2016	05:43:22	-0.1	123.1	128	2.9				Minahassa Peninsula, Sulawesi
99	25/12/2016	08:00:09	6.12	126.3	108	4.7				Mindanao, Philippines
100	25/12/2016	15:53:10	1.72	127.4	115	4.7	0.137	0.163	0.256	Halmahera, Indonesia
101	26/12/2016	13:10:33	3.49	126.8	57	4.1				Talaud Islands, Indonesia
102	26/12/2016	16:06:26	-0.4	123	53	3.9				Minahassa Peninsula, Sulawesi
103	26/12/2016	16:39:41	3.7	126.5	52	4.4				Talaud Islands, Indonesia
104	26/12/2016	21:36:35	1.87	126.4	61	4.5	0.179	0.249	0.297	Northern Molucca Sea
105	27/12/2016	07:59:00	1.16	121.8	17	2				Minahassa Peninsula, Sulawesi
106	27/12/2016	09:02:34	-0.2	123.2	71	3.3				Minahassa Peninsula, Sulawesi
107	27/12/2016	17:43:24	0.27	122.4	66	2.2				Minahassa Peninsula, Sulawesi
108	29/12/2016	09:06:35	-0.2	123	116	4.2				Minahassa Peninsula, Sulawesi
109	29/12/2016	09:30:13	0.16	121.6	143	2.5				Minahassa Peninsula, Sulawesi
110	30/12/2016	06:06:36	0.27	123.9	177	4.5				Minahassa Peninsula, Sulawesi
111	30/12/2016	07:10:02	1.76	126.5	10	4.7	0.517	0.363	0.401	Northern Molucca Sea
112	30/12/2016	09:30:14	-0.1	123.2	151	2.6				Minahassa Peninsula, Sulawesi
113	30/12/2016	10:34:29	-0.1	123.3	144	3.4				Minahassa Peninsula, Sulawesi
114	30/12/2016	11:32:00	-0.2	123.4	110	3.3				Minahassa Peninsula, Sulawesi
115	30/12/2016	15:59:43	-0.3	122.9	10	2.3				Minahassa Peninsula, Sulawesi
116	30/12/2016	16:43:33	0.4	123.7	246	3.3				Minahassa Peninsula, Sulawesi
117	30/12/2016	21:47:52	-0.1	123.3	139	3.4				Minahassa Peninsula, Sulawesi
118	31/12/2016	17:22:42	1.08	127.1	153	3.2	0.086	0.088	0.089	Halmahera, Indonesia

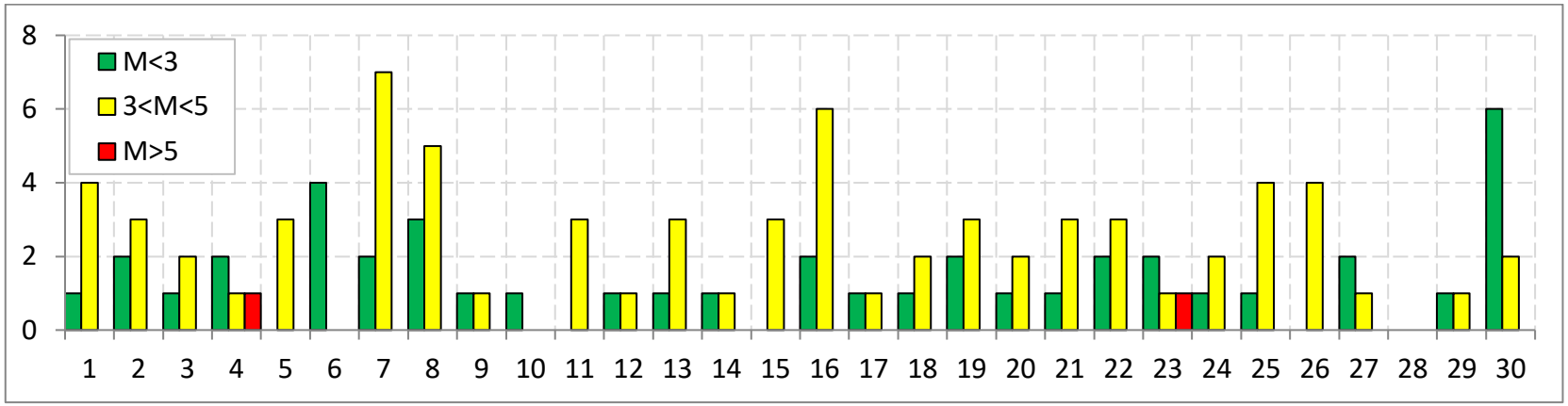
Peta 13. Distribusi Episenter Gempabumi Daerah Sulawesi Utara dan sekitarnya
Bulan Desember 2016



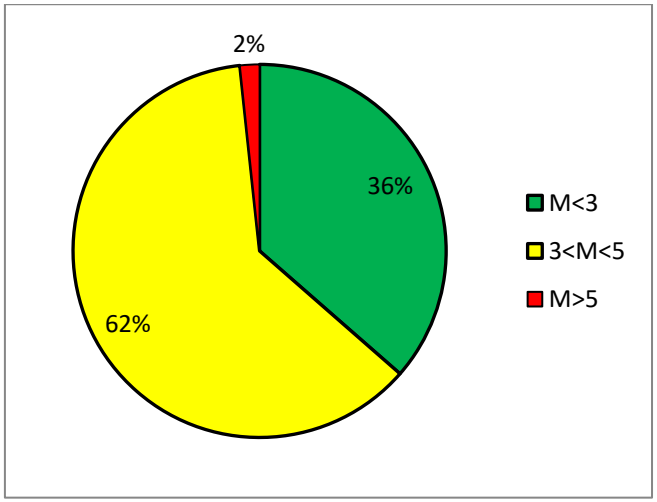
Tabel 24. Rekapitulasi Gempabumi Berdasarkan Magnitudo Bulan Desember 2016

Tanggal (UTC)	Magnitudo			Jumlah Total	Jumlah Gempa Signifikan	
	M<3	3≤M<5	M≥5		Dirasakan	Merusak
1	1	4	0	5	0	0
2	2	3	0	5	0	0
3	1	2	0	3	0	0
4	2	1	1	4	0	0
5	0	3	0	3	0	0
6	4	0	0	4	0	0
7	2	7	0	9	1	0
8	3	5	0	8	0	0
9	1	1	0	2	0	0
10	1	0	0	1	0	0
11	0	3	0	3	0	0
12	1	1	0	2	0	0
13	1	3	0	4	0	0
14	1	1	0	2	0	0
15	0	3	0	3	0	0
16	2	6	0	8	0	0
17	1	1	0	2	0	0
18	1	2	0	3	0	0
19	2	3	0	5	0	0
20	1	2	0	3	0	0
21	1	3	0	4	0	0
22	2	3	0	5	0	0
23	2	1	1	4	0	0
24	1	2	0	3	0	0
25	1	4	0	5	0	0
26	0	4	0	4	0	0
27	2	1	0	3	0	0
28	0	0	0	0	0	0
29	1	1	0	2	0	0
30	6	2	0	8	0	0
31	0	1	0	1	0	0
Jumlah gempa	43	73	2	118	1	0
Jumlah gempa seluruhnya						

Histogram 23. Gempabumi Berdasarkan Magnitudo
Bulan Desember 2016



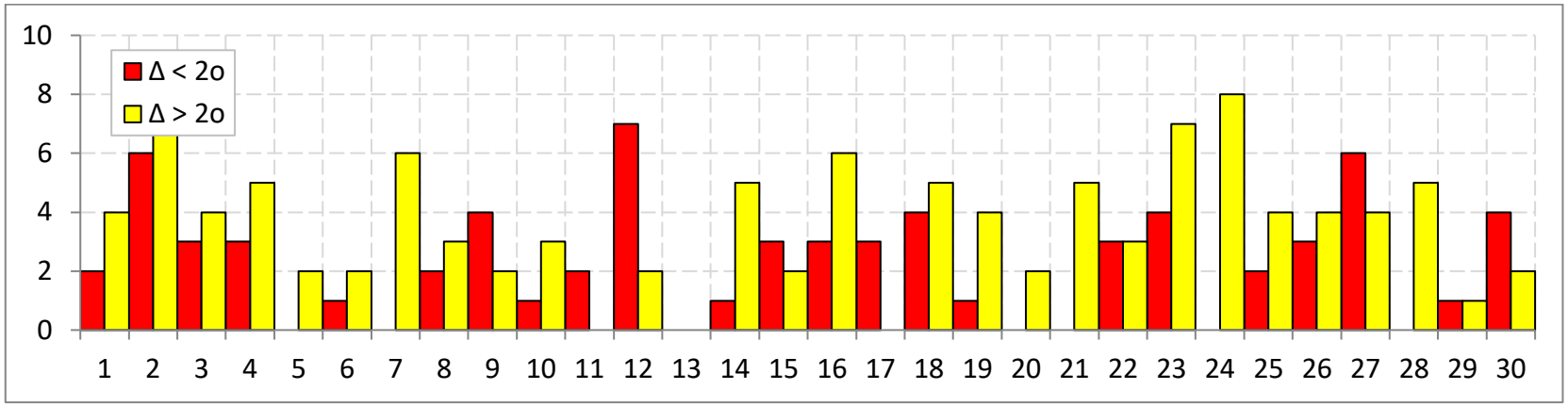
Persentase 25. Gempabumi Berdasarkan Magnitudo
Bulan Desember 2016



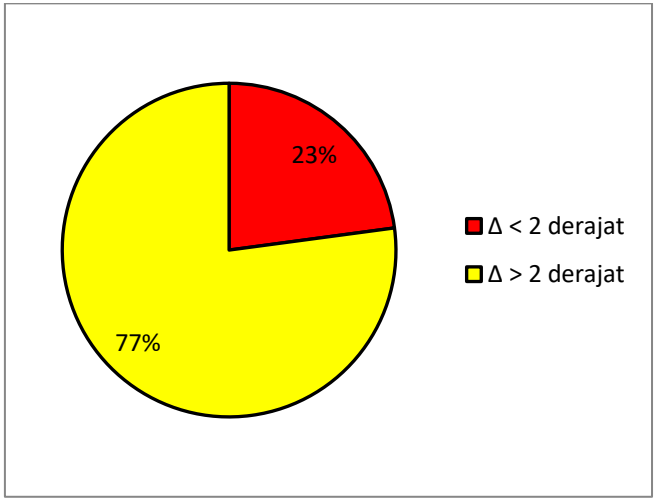
Tabel 25. Rekapitulasi Gempabumi Berdasarkan Jarak Dari Stasiun
Bulan Desember 2016

Tanggal	Jarak		Jumlah	Keterangan
	$\Delta \leq 2^o$	$\Delta > 2^o$		
01/08/2016	2	3	5	-
02/08/2016	2	3	5	-
03/08/2016	0	3	3	-
04/08/2016	0	4	4	-
05/08/2016	0	3	3	-
06/08/2016	0	4	4	-
07/08/2016	6	3	9	-
08/08/2016	0	8	8	-
09/08/2016	0	2	2	-
10/08/2016	0	1	1	-
11/08/2016	0	3	3	-
12/08/2016	1	1	2	-
13/08/2016	1	3	4	-
14/08/2016	0	2	2	-
15/08/2016	1	2	3	-
16/08/2016	3	5	8	-
17/08/2016	0	2	2	-
18/08/2016	1	2	3	-
19/08/2016	1	4	5	-
20/08/2016	1	2	3	-
21/08/2016	0	4	4	-
22/08/2016	2	3	5	-
23/08/2016	1	3	4	-
24/08/2016	0	3	3	-
25/08/2016	1	4	5	-
26/08/2016	1	3	4	-
27/08/2016	0	3	3	-
28/08/2016	0	0	0	-
29/08/2016	0	2	2	-
30/08/2016	3	5	8	-
31/08/2016	0	1	1	
Jumlah gempa	27	91	118	-
Jumlah gempa seluruhnya				

Histogram 24. Gempabumi Berdasarkan Jarak
Bulan Desember 2016



Persentase 26. Gempabumi Berdasarkan Jarak
Bulan Desember 2016



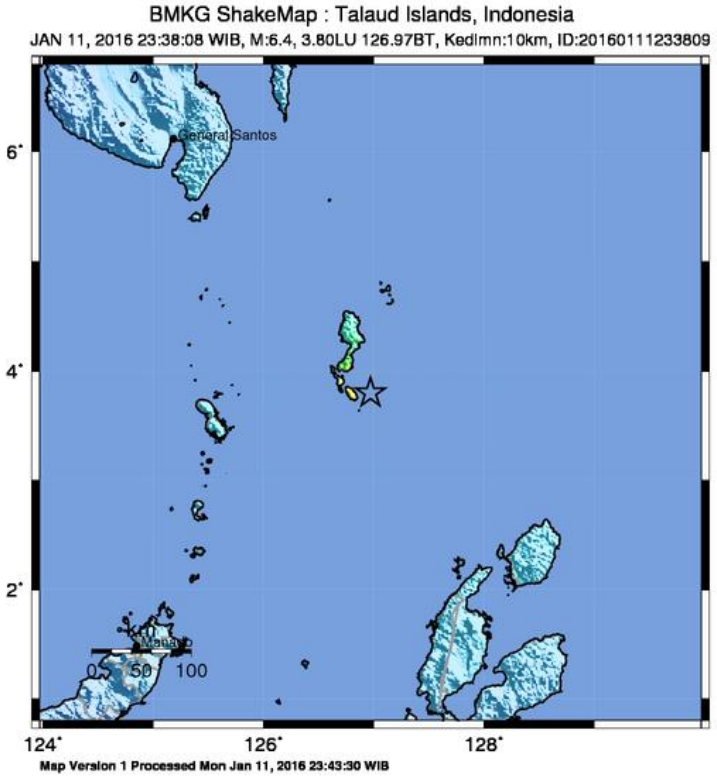
PETA GONCANGAN (*SHAKEMAP*) GEMPABUMI TERASA DI WILAYAH REGIONAL X TAHUN 2016

Peta Goncangan (*Shakemap* merupakan Peta yang menggambarkan getaran/guncangan tanah yang diakibatkan oleh gempa. Melalui shakemap, daerah yang merasakan getaran akibat gempa bumi dapat diketahui secara cepat dan tepat. Untuk gempa dengan kekuatan yang besar hingga menimbulkan korban yang cukup besar, shakemap dapat digunakan untuk mengetahui lokasi yang terkena dampak signifikan, sehingga bantuan dapat diberikan secara tepat.

Peta goncangan yang dikeljuarkan BMKG memiliki 2 jenis satuan, yaitu MMI (*Modified Mercalli Intensity*) dan SIG BMKG (Skala Intensitas Gempabumi BMKG). Di dalam Buletin Gempa Bumi Strasiun Geofisika Klas I Winangun Manado ini, Peta Guncangan (*Shakemap*) disajikan dengan menggunakan skala MMI. Skala MMI adalah satuan yang dibuat oleh *Giuseppe Mercali* pada tahun 1902. Skala MMI dibagi menjadi 12 pecahan berdasarkan informasi dari orang-orang yang selamat dari gempa tersebut dan juga dengan melihat serta membandingkan tingkat kerusakan akibat gempa tersebut.Oleh karena itu, Skala MMi bersifat sangat subjektif. Ilustrasi perbandingan antara skala SIG dan MMI digambarkan oleh gambar di bawah ini.

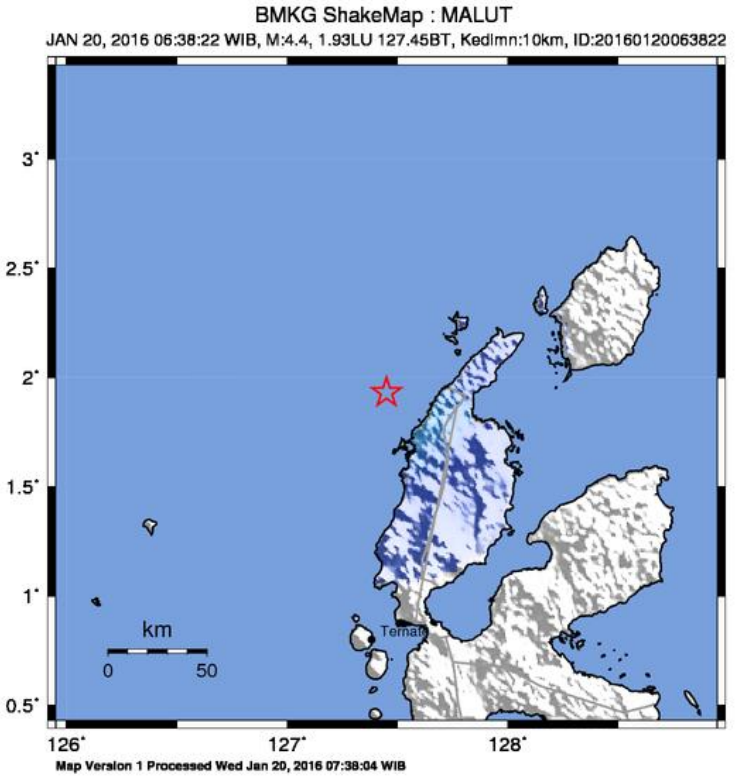
Skala SIG BMKG	Warna	Deskripsi Sederhana	Deskrispsi Rinci	Skala MMI	PGA (gal)
I	Putih	TIDAK DIRASAKAN (Not Felt)	Tidak dirasakan atau dirasakan hanya oleh beberapa orang tetapi terekam oleh alat.	I-II	< 2.9
II	Hijau	DIRASAKAN (Felt)	Dirasakan oleh orang banyak tetapi tidak menimbulkan kerusakan. Benda-benda ringan yang digantung bergoyang dan jendela kaca bergetar.	III-V	2.9-88
III	Kuning	KERUSAKAN RINGAN (Slight Damage)	Bagian non struktur bangunan mengalami kerusakan ringan, seperti retak rambut pada dinding, genteng bergeser ke bawah dan sebagian berjatuhan.	VI	89-167
IV	Jingga	KERUSAKAN SEDANG (Moderate Damage)	Banyak Retakan terjadi pada dinding bangunan sederhana, sebagian roboh, kaca pecah. Sebagian plester dinding lepas. Hampir sebagian besar genteng bergeser ke bawah atau jatuh. Struktur bangunan mengalami kerusakan ringan sampai sedang.	VII-VIII	168-564
V	Merah	KERUSAKAN BERAT (Heavy Damage)	Sebagian besar dinding bangunan permanen roboh. Struktur bangunan mengalami kerusakan berat. Rel kereta api melengkung.	IX-XII	> 564

PETA 14. GUNCANGAN (*SHAKEMAP*) BULAN JANUARI 2016



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

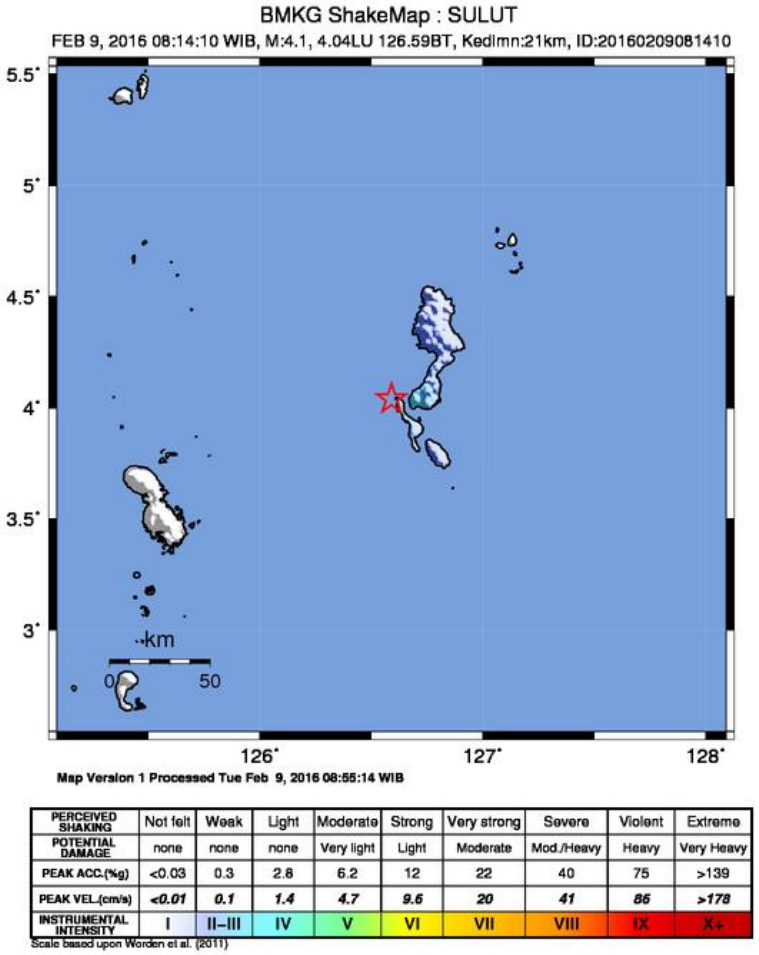
Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

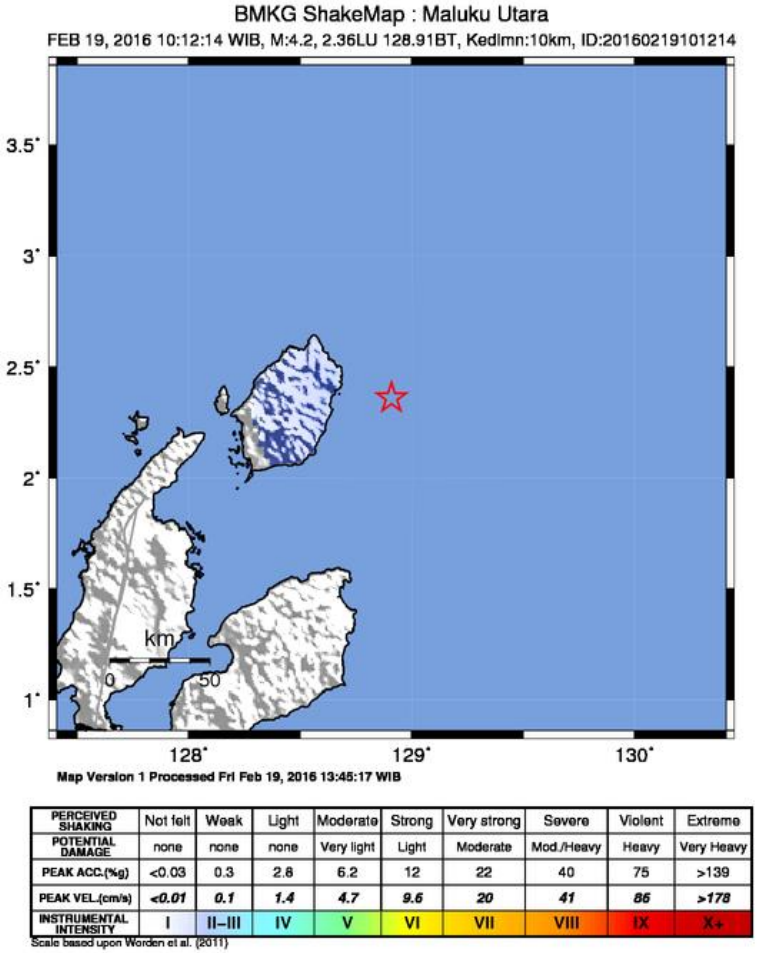
PETA 15. GUNCANGAN (*SHAKEMAP*) BULAN PEBRUARI 2016



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

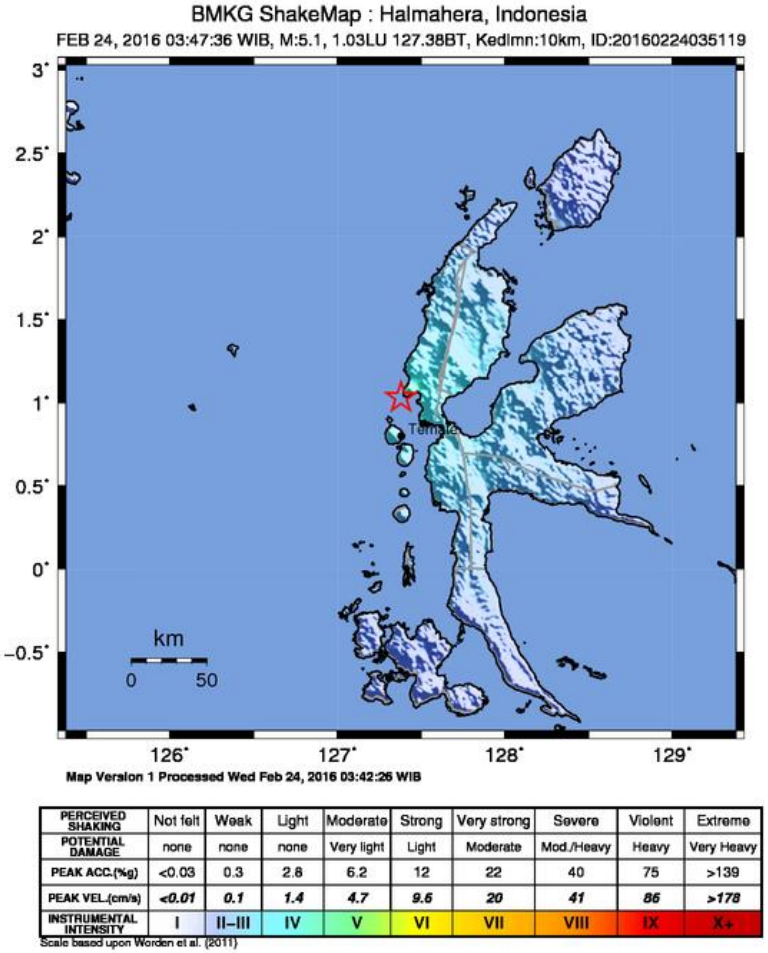
Scale based upon Worden et al. (2011)

Gempa Laut Sulawesi, 9 Februari 2016, 08:14:19 WITA										
Lat : 1.19 LU, Lon : 123.71 BT, Mag = 4.6, Depth = 10 Km, 55 km TimurLaut BOLAANG MONGONDOW TIMUR-SULUT										
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	max/10	Intensitas Konversi	LAT	LON	R (Hypocentre)
1	AMPANA SULTENG	APSI	0.07863	0.05435	0.05312	0.00786	I	-0.9108	121.649	390.621
2	KOTAMOBAGU	KMSI	3.78282	11.2943	15.1665	1.51665	III	0.5745	123.981	154.843
3	MELONGUANE	MGAI	0.04163	0.04301	N/A	0.0043	I	4.0079	126.67	400.923
4	MAPAGA SABANG PALU	MPSI	0.01979	0.02486	0.02528	0.00253	I	0.3374	119.898	459.113
5	MARISA GORONTALO	MRSI	0.07189	0.1702	0.19026	0.01903	I	0.4771	121.941	255.034
6	STA MET SAMRATULANGI MANADO	SAMI	0.49714	0.48878	0.45994	0.04971	I	1.537	124.922	142.137
7	STA GEOF MANADO	SLMI	0.71572	1.11405	1.41175	0.14118	I-II	1.4434	124.839	137.261
8	TONDANO	TMSI	0.09246	0.1678	0.1867	0.01867	I	1.2948	124.92	152.539



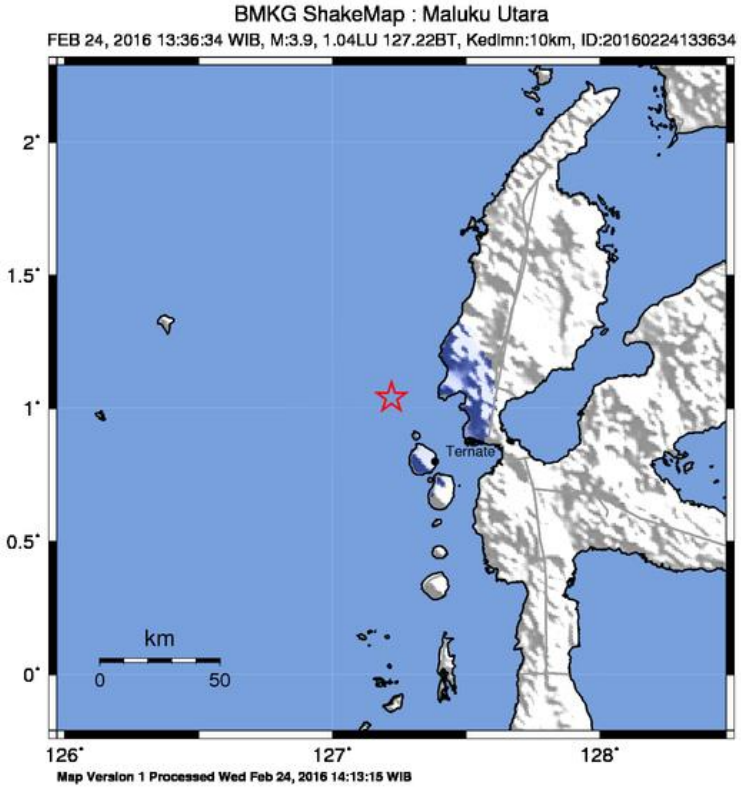
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

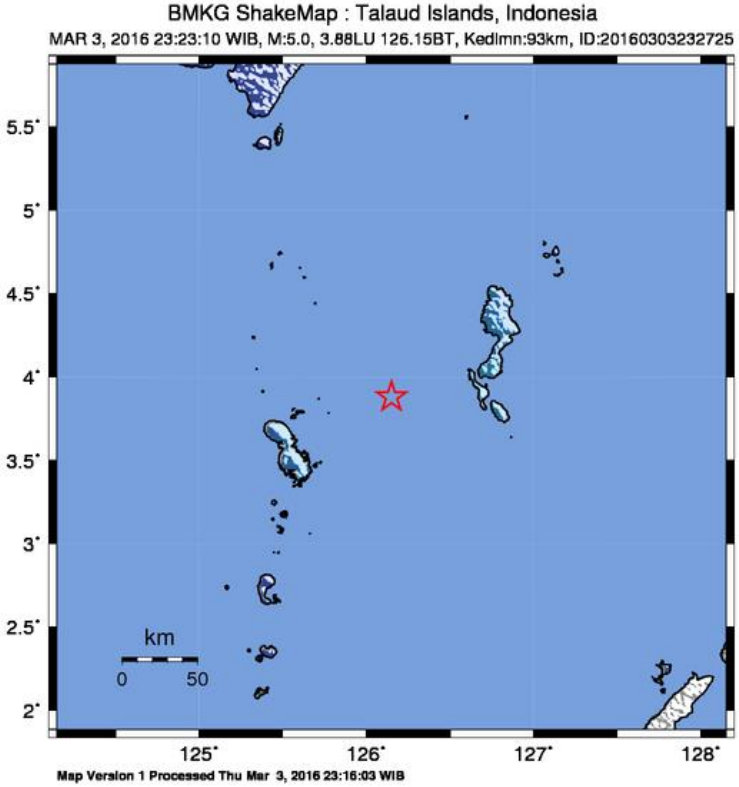


PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

Gempa Halmahera, 24 Februari 2016, 15:36:34 WITA										
Lat : 1.04 LU, Lon : 127.22 BT, Mag = 3.9, Depth = 10 Km, 34 km BaratLaut TERNATE-MALUT										
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	max/10	Intensitas Konversi	LAT	LON	R (Hypocentre)
1	STA MAR.BITUNG	BTSI	8.278303	4.610437	4.267183	0.8278303	-1	1.443	125.179	370.092
2	KOTAMOBAGU	KMSI	0.06343	0.17245	0.112932	0.017245	-1	0.5745	123.9807	523.593
3	STA KLIM KAYUWATU	KWSI	3.943697	-3.677699	-3.492038	0.3943697	-1	1.5013	124.9178	394.931
4	MELONGUANE	MGAI	0.260594	0.305115	0.42582	0.042582	-1	4.0079	126.67	270.063
5	MARISA GORONTALO	MRSI	0.025872	0.016753	0.013086	0.0025872	-1	0.4771	121.9406	736.593
6	STA MET SAMRATULANGI MANADO	SAMI	0.248728	0.246271	0.322477	0.0322477	-1	1.537	124.9221	393.495
7	STA GEOF MANADO	SLMI	0.196077	0.167615	0.197934	0.0197934	-1	1.4434	124.8389	404.705

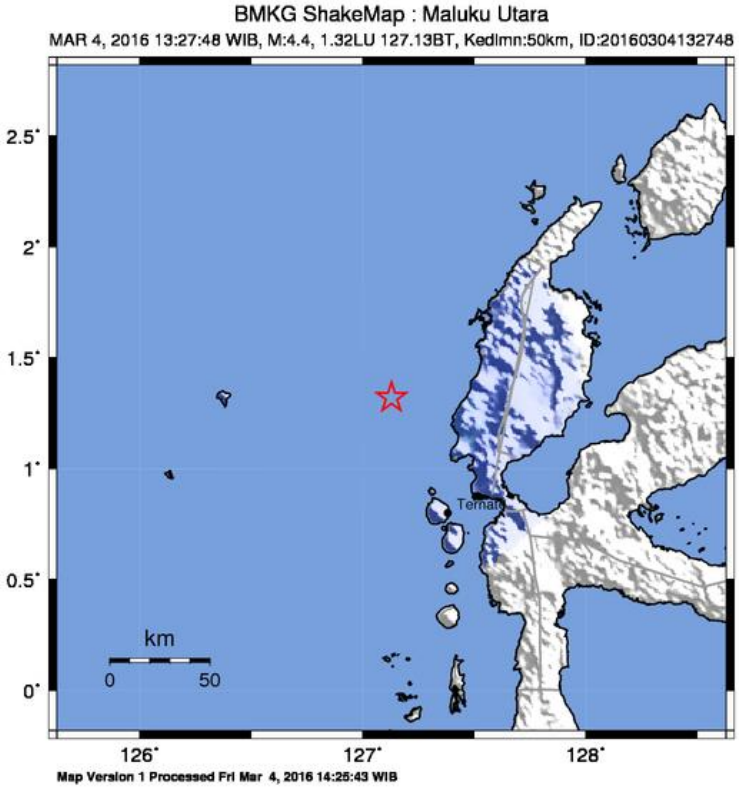
PETA 16. GUNCANGAN (*SHAKEMAP*) BULAN MARET 2016



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

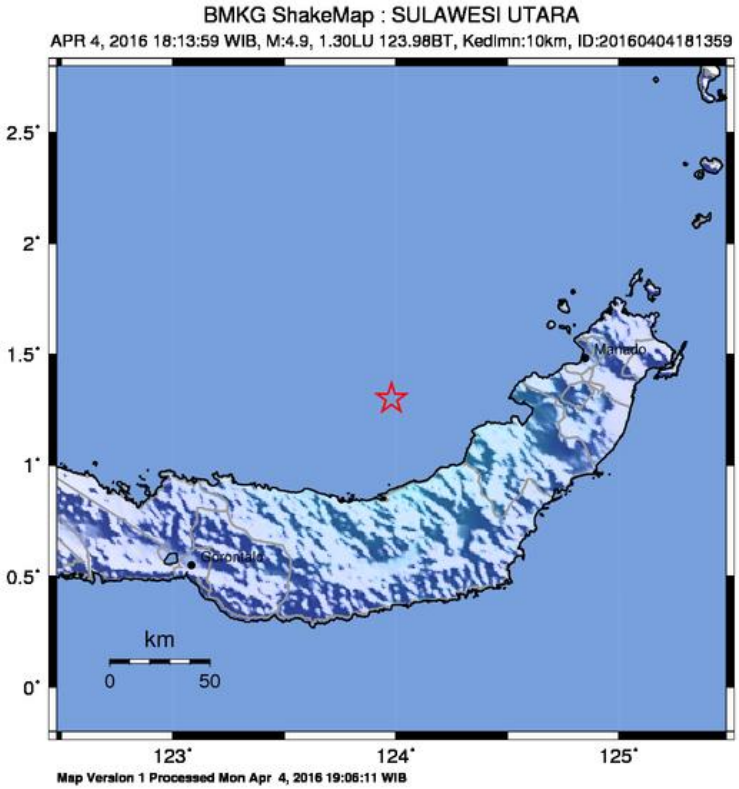
Gempa Talaud, 04 Maret 2016, 00:23:10 WITA										
Lat : 3.88 LU, Lon : 126.15 BT, Mag = 5.0, Depth = 93 Km, 65 km BaratLaut Kep.Talaud-SULUT										
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	max/10	Intensitas Konversi	LAT	LON	R (Hypocentre)
1	KOTAMOBAGU	KMSI	0.064572	0.08224	0.072708	0.008224	I	0.5745	123.9807	457.418
2	**MELONGUANE**	**MGAI**	**2.018534**	**5.68952**	**2.990829**	**0.568952**	**II-III**	**4.0079**	**126.67**	**120.847**
3	MARISA GORONTALO	MRSI	0.022998	0.047534	0.036309	0.004753	I	0.4771	121.9406	615.42
4	STA MET SAMRATULANGI MANADO	SAMI	0.218495	0.331323	0.390911	0.039091	I	1.537	124.9221	318.106
5	STA GEOF TERNATE	TGTI	0.112384	0.189001	0.14052	0.0189	I	0.7719	127.3667	389.844
6	TONDANO	TMSI	0.244504	0.610724	0.45993	0.061072	I	1.2948	124.92	340.971



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

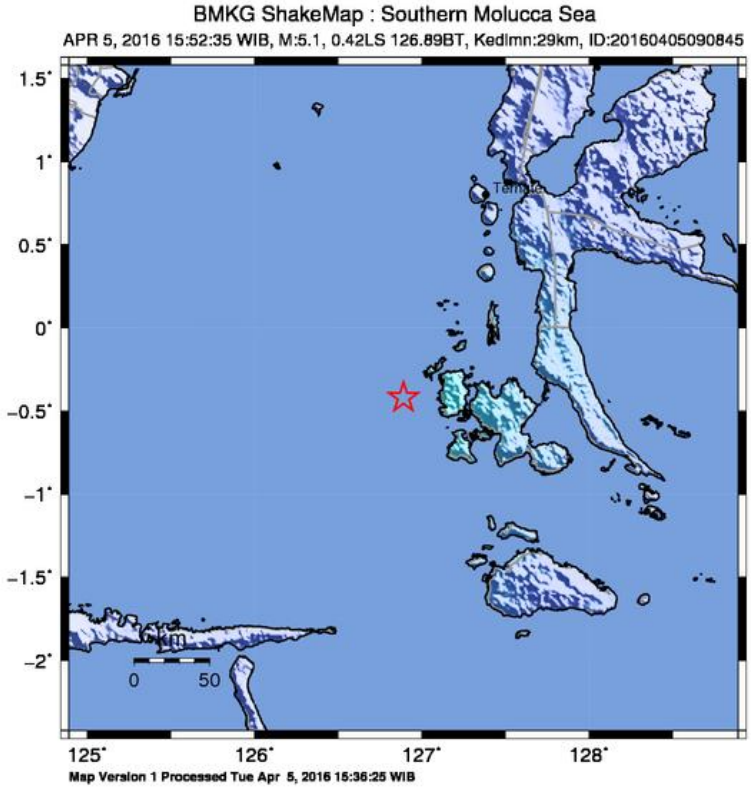
PETA 17. GUNCANGAN (*SHAKEMAP*) BULAN APRIL 2016



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

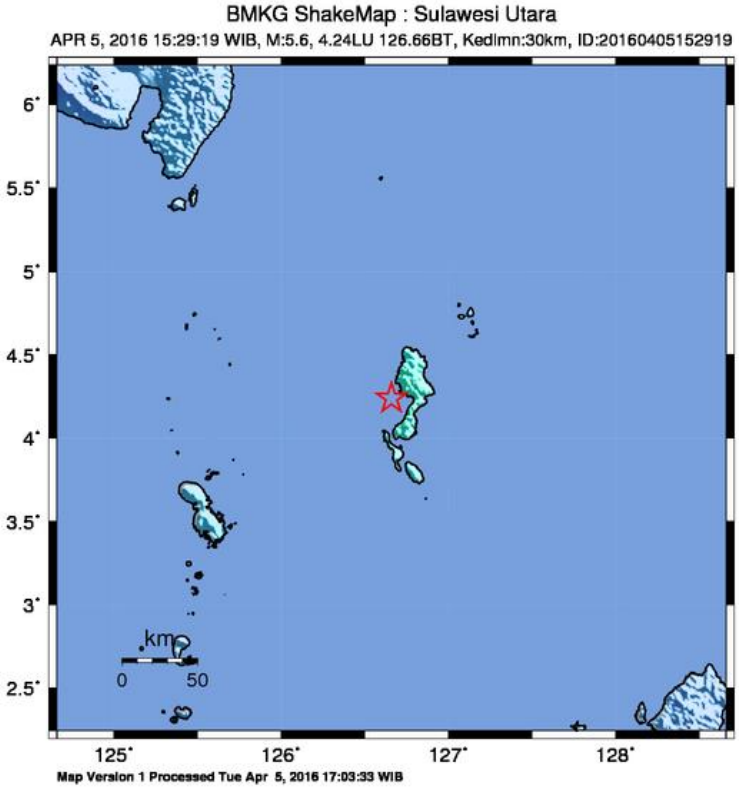
Scale based upon Worden et al. (2011)

Gempa Minahasa, 04 April 2016, 19:13:59 WITA										
Lat : 1.29 LU, Lon : 123.96 BT, Mag = 4.7, Depth = 10 Km, 58 Km BaratLaut MINAHASA SELATAN-SULUT										
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	max	Intensitas Konversi	LAT	LON	R (Hypocentre)
1	STA MAR.BITUNG	BTSI	4.034755	6.9038	6.87121	0.69038	II	1.443	125.179	136.74
2	KOTAMOBAGU	KMSI	2.067487	5.57818	5.55169	0.557818	II	0.575	123.981	80.081
4	MARISA GORONTALO	MRSI	-0.0537	0.1395	0.08321	0.01395	I	0.477	121.941	241.84
5	STA MET SAMRATULANGI MANADO	SAMI	0.580412	1.23409	1.10303	0.123409	I	1.537	124.922	110.71
6	STA GEOF MANADO	SLMI	2.180535	3.67136	3.1609	0.367136	II	1.443	124.839	99.536
7	TONDANO	TMSI	0.332864	0.83881	0.82134	0.083881	II	1.295	124.92	107.03



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

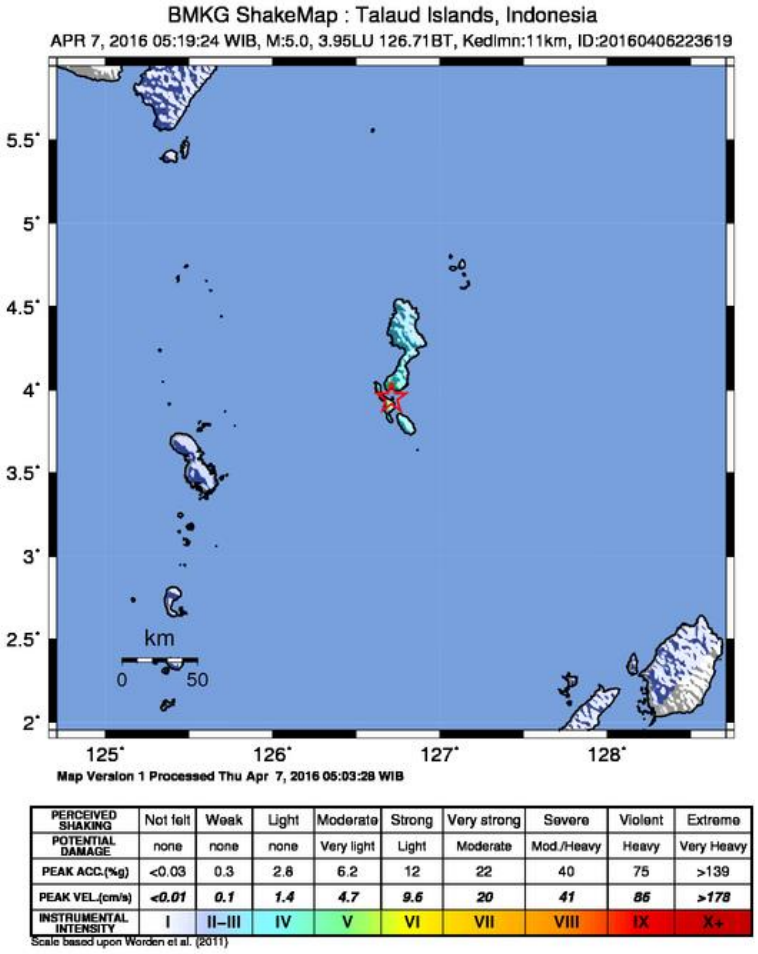
Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

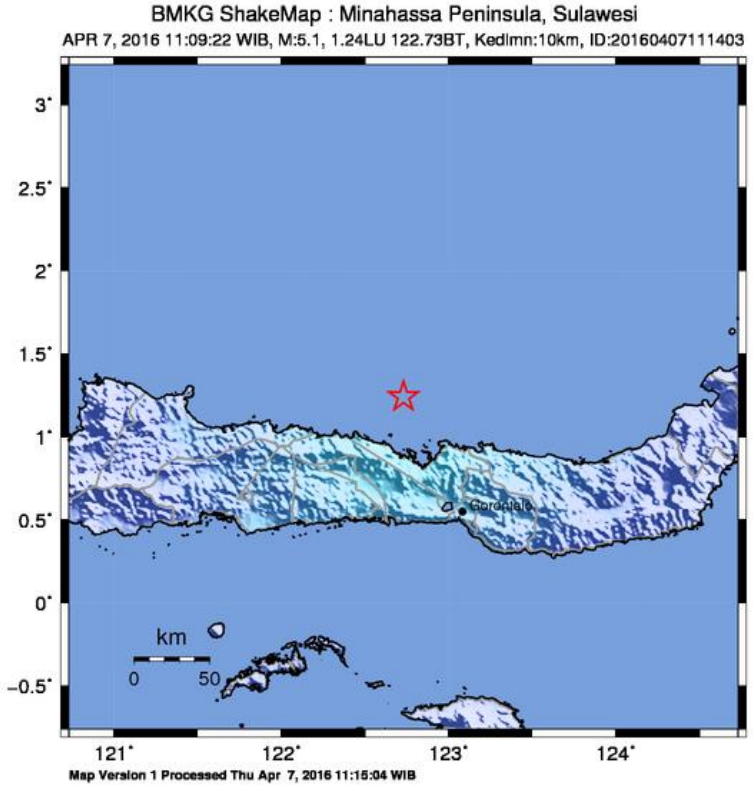
Gempa Talaud, 05 April 2016, 16:29:21 WITA										
Lat : 4.17 LU, Lon : 126.77 BT, Mag = 5.8, Depth = 10 Km, Kepulauan Talaud-SULUT										
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	max/10	Intensitas Konversi	LAT	LON	R (Hypocentre)
1	KOTAMOBAGU	KMSI	0.288081	0.293454	0.384758	0.0384758	I	0.5745	123.9807	506.969
2	MELONGUANE	MGAI	36.71435	45.57061	52.497019	5.2497019	V	4.0079	126.67	25.135
3	MARISA GORONTALO	MRSI	0.057169	0.078411	0.065429	0.0078411	I	0.4771	121.9406	676.252
4	STA GEOF MANADO	SLMI	0.272964	0.656899	0.682446	0.0682446	I	1.4434	124.8389	372.819
5	STA GEOF TERNATE	TGTI	0.171281	0.145353	0.236297	0.0236297	I	0.7719	127.3667	385.277
6	TONDANO	TMSI	0.371654	1.39428	1.271239	0.139428	I	1.2948	124.92	381.504



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

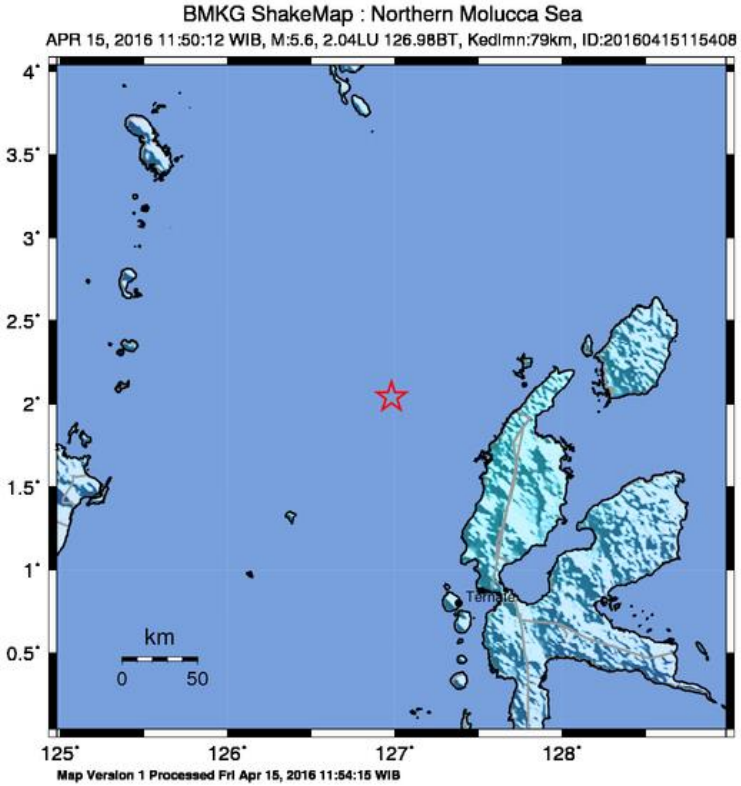
Gempa Talaud, 07 April 2016, 06:19:24 WITA										
Lat : 3.95 LU, Lon : 126.71 BT, Mag = 5.0, Depth = 11 Km, 10 Km BaratDaya KEP-TALAUD-SULUT										
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	max	Intensitas Konversi	LAT	LON	R (Hypocentre)
1	MELONGUANE	MGAI	0.657195	0.873607	1.861342	1.861342	III-IV	4.0079	126.67	13.491
2	MARISA GORONTALO	MRSI	0.000683	0.001012	0.00087	0.001012	I	0.4771	121.9406	654.976
3	TONDANO	TMSI	0.00584	0.016594	0.011572	0.016594	I	1.2948	124.92	355.616



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

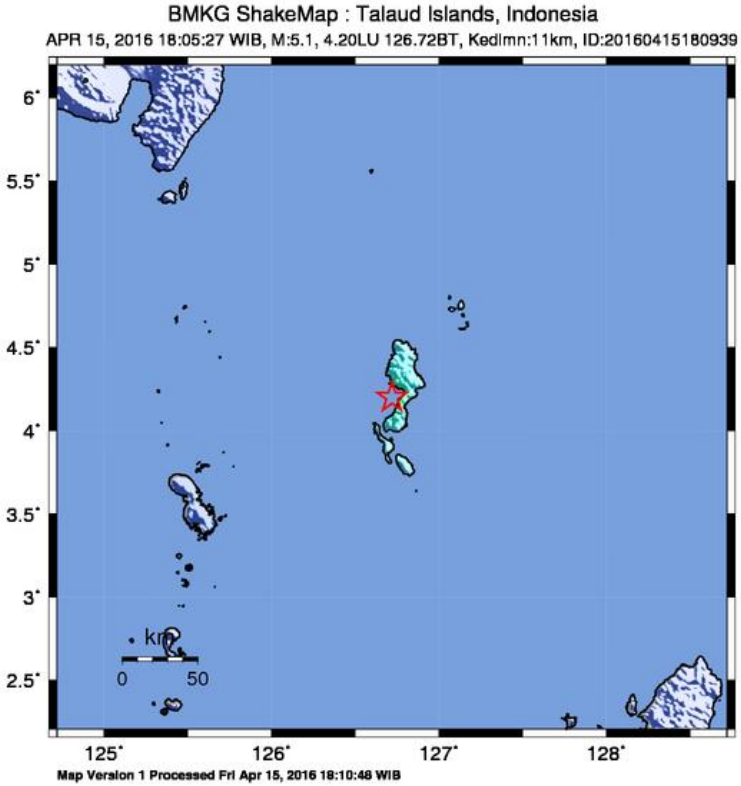
Scale based upon Worden et al. (2011)

Gempa Gorontalo, 07 April 2016, 12:09:22 WITA										
Lat : 1.24 LU, Lon : 122.73 BT, Mag = 5.1, Depth = 10 Km, 43 Km TimurLaut GORONTALOUTARA										
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	max	Intensitas Konversi	LAT	LON	R (Hypocentre)
1	STA MET GORONTALO	GMCI	1.4999695	2.4897024	2.6675949	2.6675949	III-IV	0.63	122.85	69.729
2	KOTAMOBAGU	KMSI	0.0371076	0.0793553	0.0565639	0.0793553	I-II	0.5745	123.9807	157.575
3	MARISA GORONTALO	MRSI	0.1297651	0.2229987	0.1846092	0.2229987	II	0.4771	121.9406	122.266
4	TONDANO	TMSI	0.0048858	0.008854	0.0060359	0.008854	I	1.2948	124.92	243.372



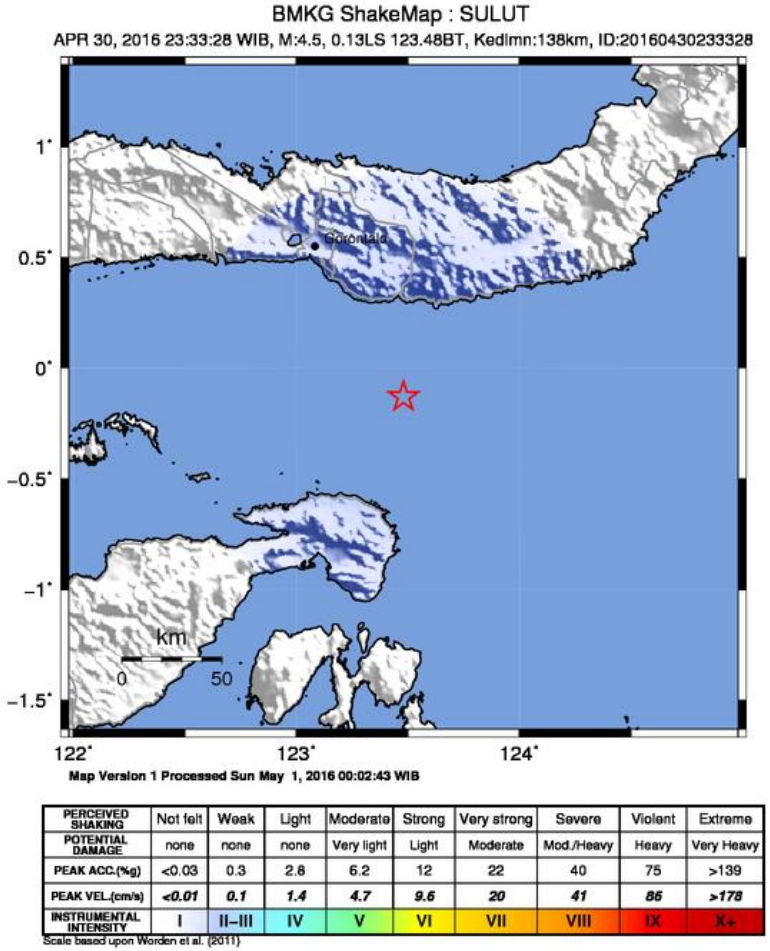
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

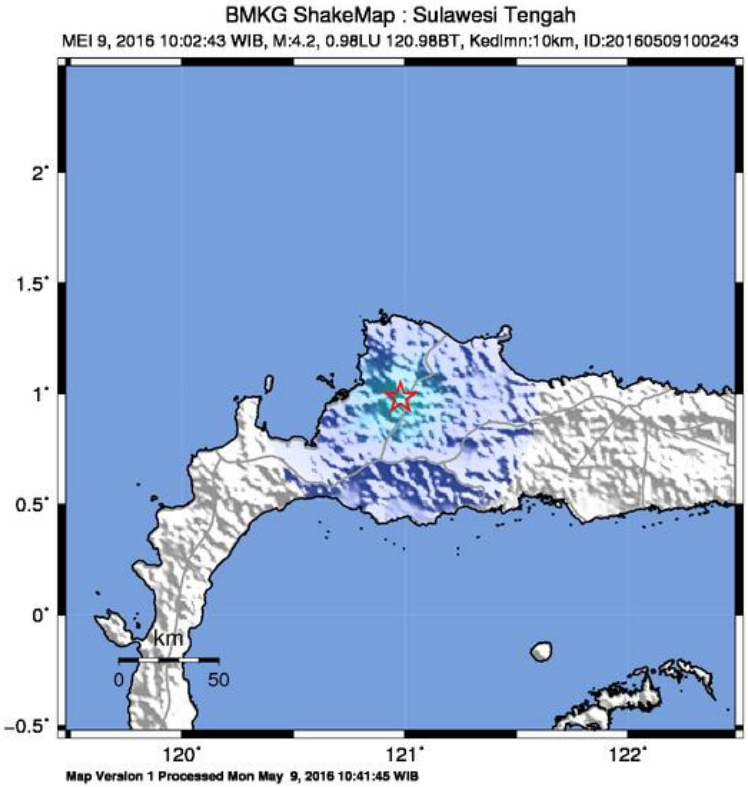


PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

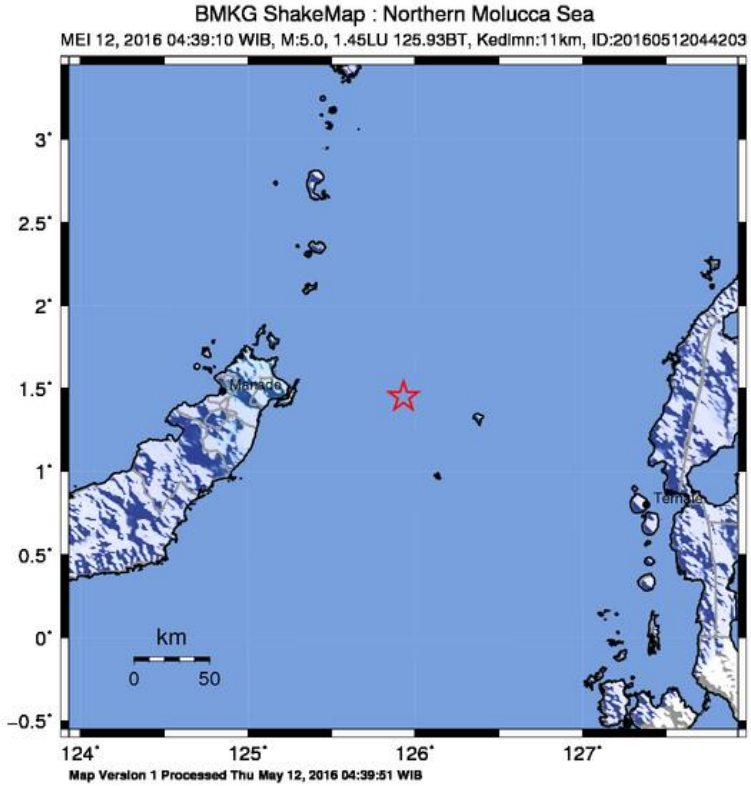
Gempa Gorontalo, 1 Mei 2016, 00:33:28 WITA										
Lat : 0.13 LU, Lon : 123.48 BT, Mag = 4.5, Depth = 138 Km, 71 Km Barat Daya BOLAANGMONGONDOW SELATAN - SULUT										
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	max	Intensitas Konversi	LAT	LON	R (Hypocentre)
1	AMPANA SULTENG	APSI	0.016019	0.026139	0.01991	0.026139	I	-0.9108	121.6487	260.266
2	KOTAMOBAGU	KMSI	0.011553	0.023408	0.026298	0.026298	I	0.5745	123.9807	155.192
3	STA MET LUWUK	LUWS	0.06514	0.16023	0.113537	0.16023	II	-1.0411	122.771	188.894
4	MAPAGA SABANG PALU	MPSI	0.001751	0.001504	0.00253	0.00253	I	0.3374	119.898	419.884
5	MARISA GORONTALO	MRSI	0.008817	0.03258	0.019423	0.03258	I	0.4771	121.9406	221.096

PETA 18. GUNCANGAN (*SHAKEMAP*) BULAN MEI 2016



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

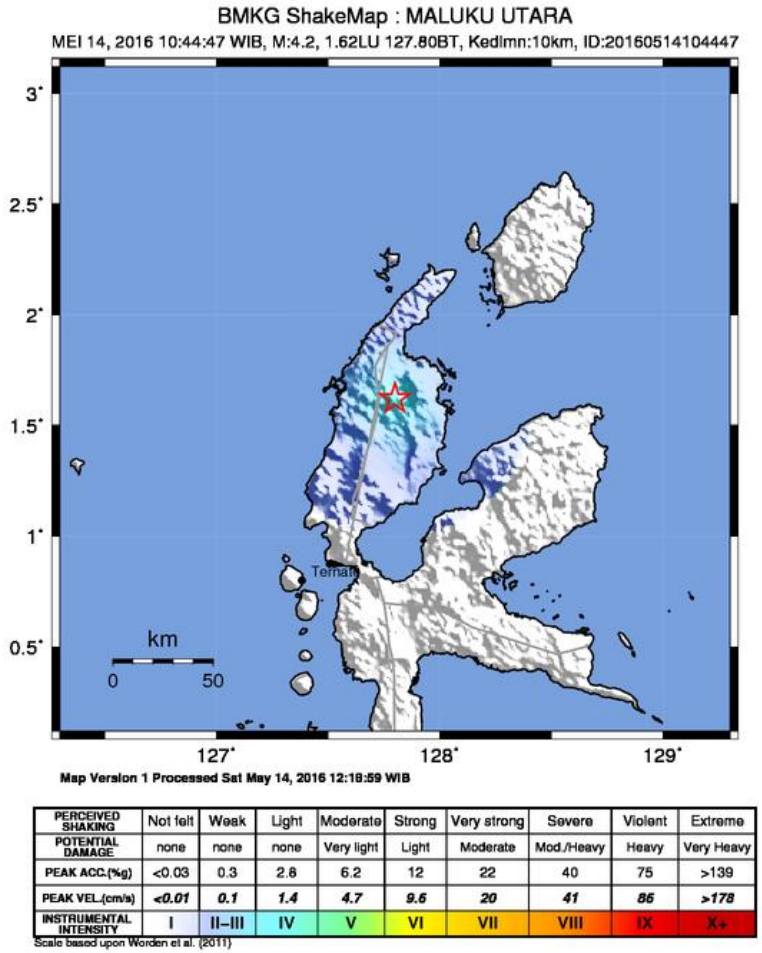
Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

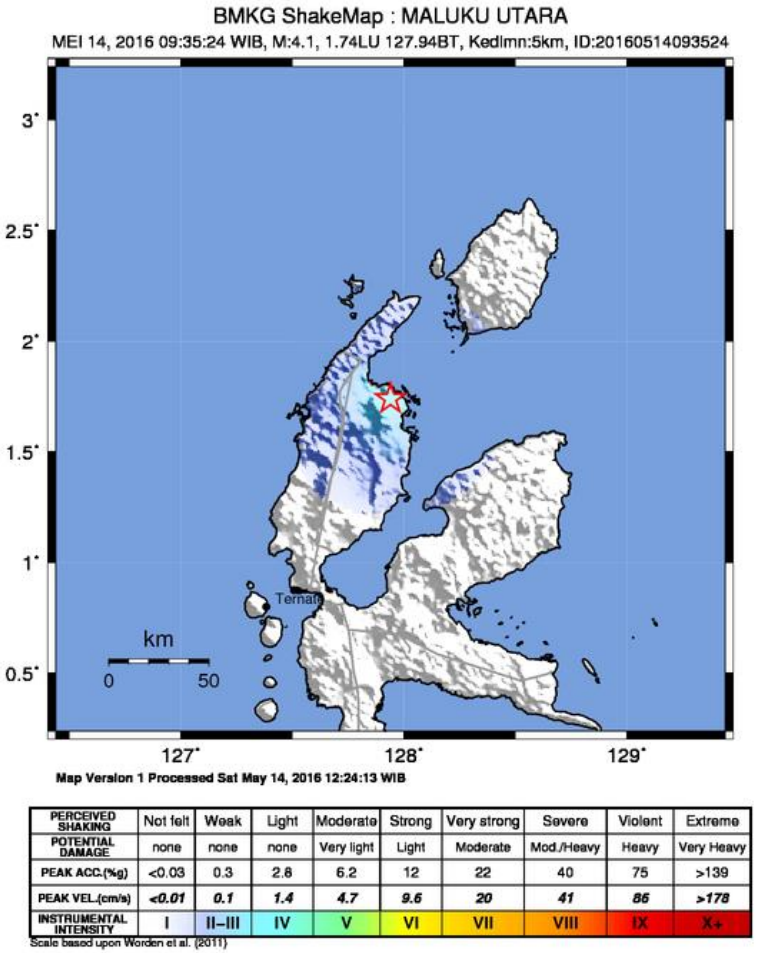
Scale based upon Worden et al. (2011)

Gempa Laut Maluku, 12 Mei 2016, 05:39:10 WITA											
Lat : 1.45 LU, Lon : 125.93 BT, Mag = 5.0, Depth = 11 Km, 89 km TimurLaut BITUNG-SULUT											
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	Max	Intensitas Konversi	SIG-BMKG	LAT	LON	R (Hypocentre)
COLOCATED ACCELEROGRAPH											
1	MELONGUANE	MGAI	-0.0035	0.00612	0.00654	0.00654	I	I	4.0079	126.67	295.774
2	TONDANO	TMSI	0.27059	0.52613	0.36293	0.52613	II-III	I-II	1.2948	124.92	113.958
NON COLOCATED ACCELEROGRAPH											
3	STA MET SAMRATULANGI MANADO	SAMI	0.08748	0.15877	0.15288	0.15877	I	I	1.537	124.9221	112.83
4	STA GEOF MANADO	SLMI	0.09237	0.1931	0.23629	0.23629	II	I	1.4434	124.8389	121.613



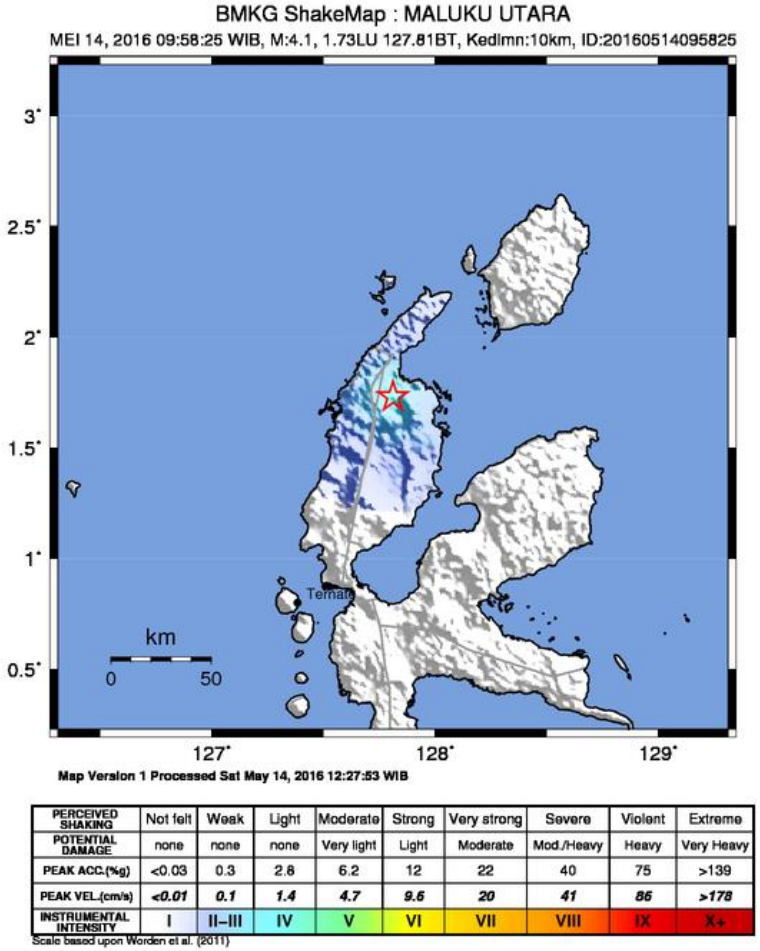
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



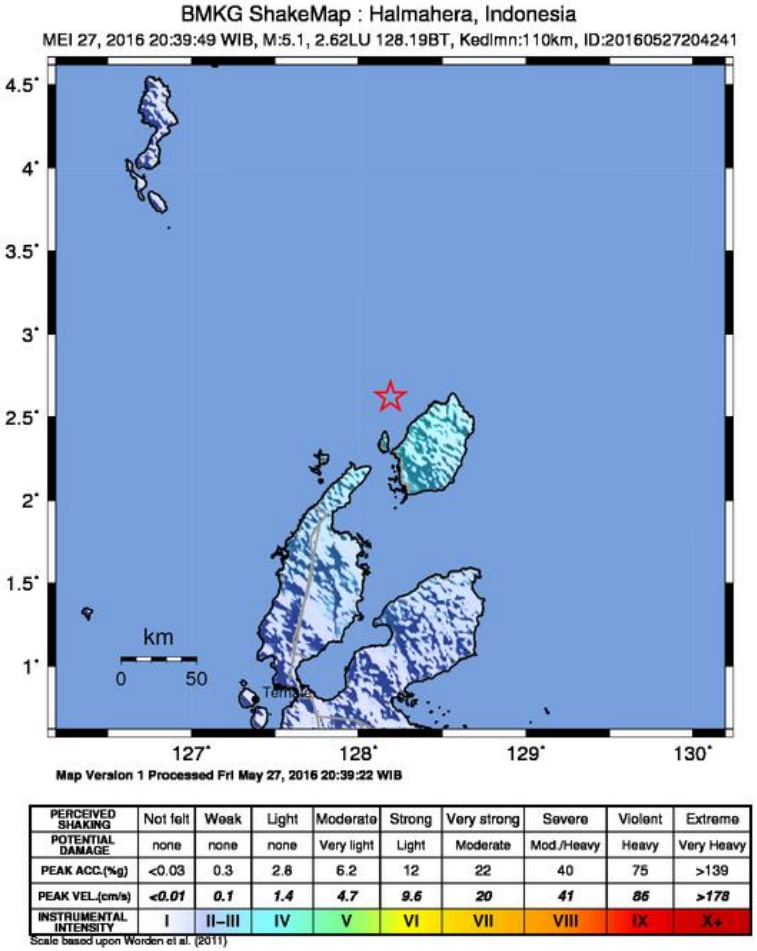
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

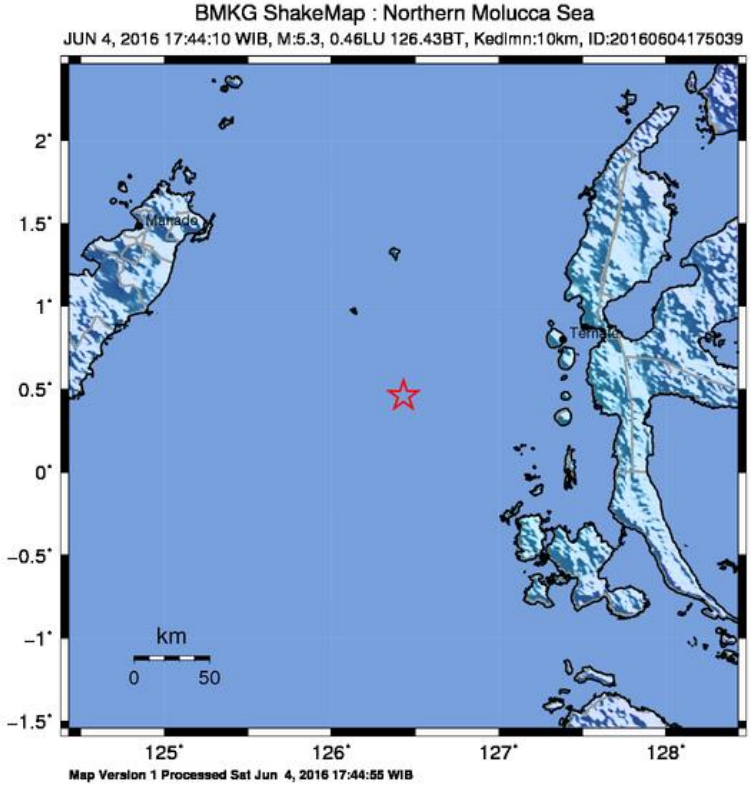
Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

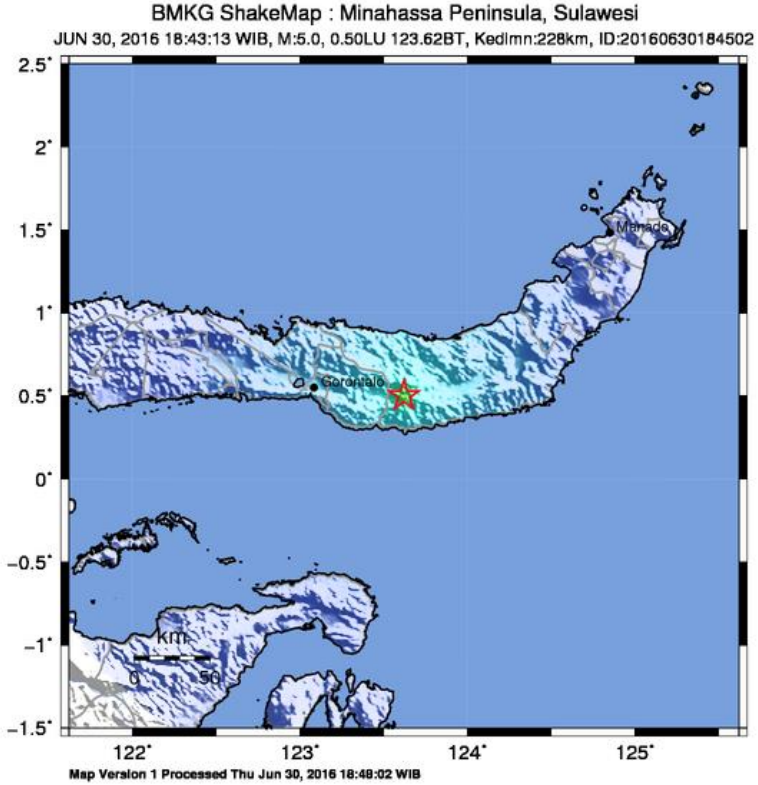
Scale based upon Worden et al. (2011)

PETA 19. GUNCANGAN (*SHAKEMAP*) BULAN JUNI 2016



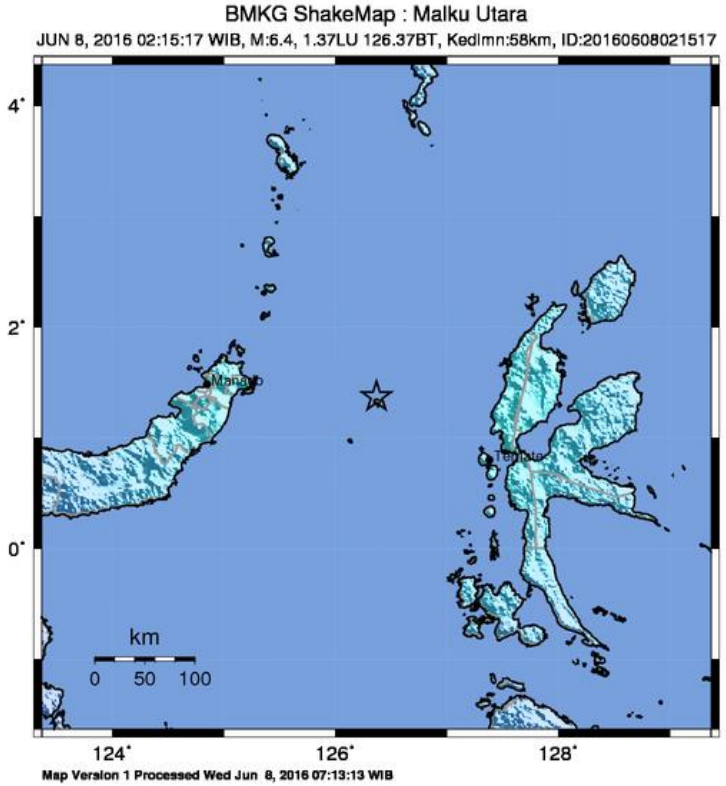
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

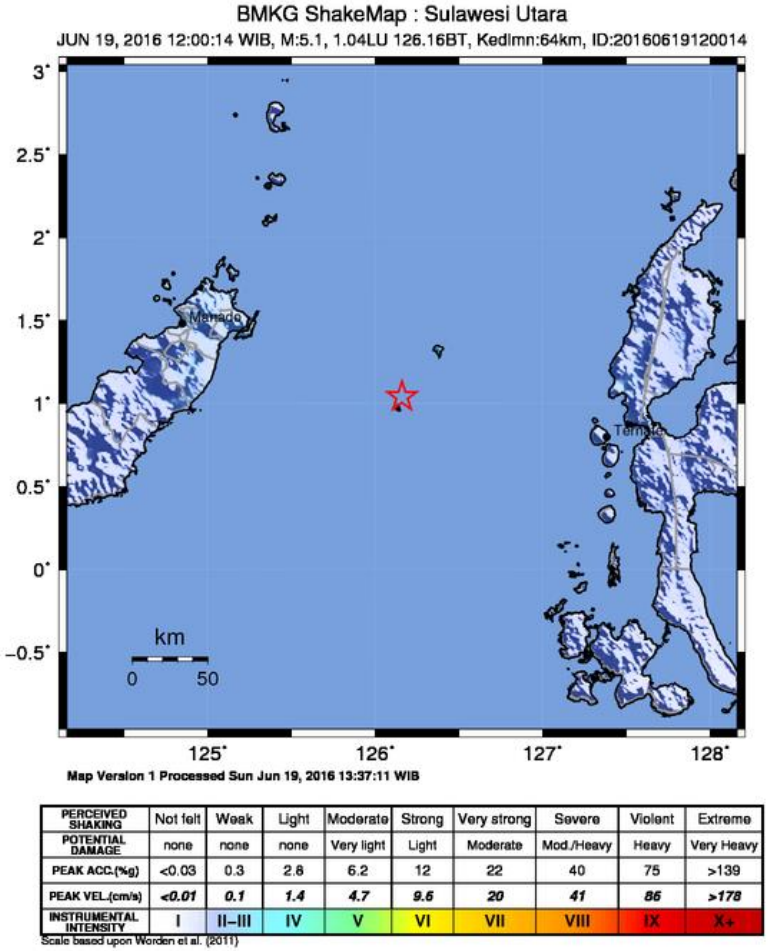
Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

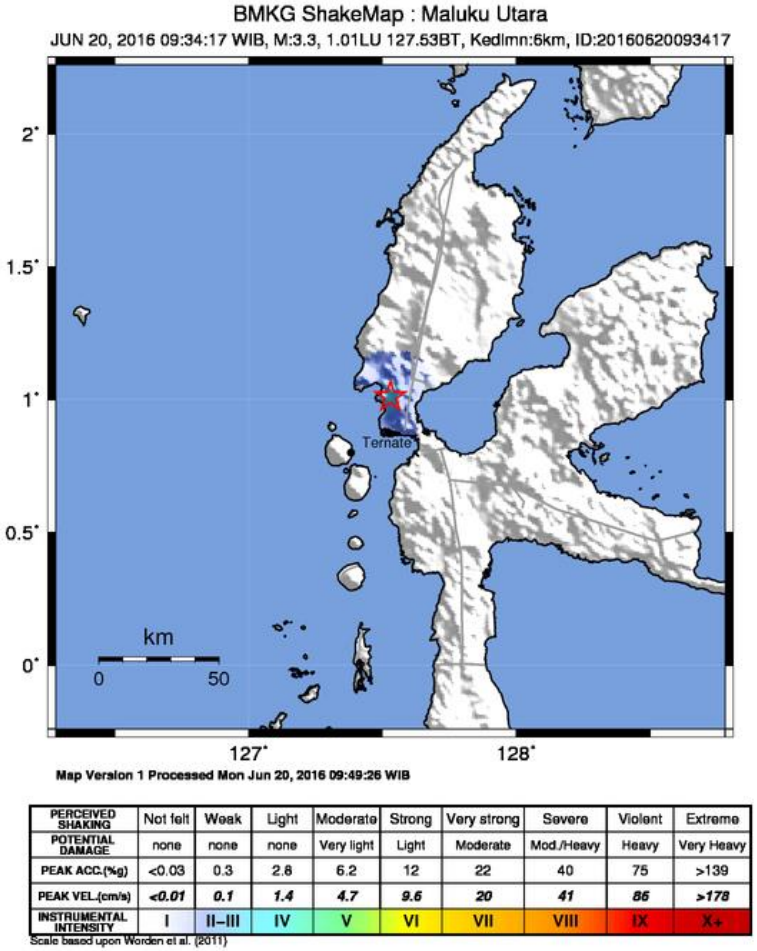
Scale based upon Worden et al. (2011)

Gempa Laut Maluku, 08 Juni 2016, 02:15:17 WITA											
Lat : 1.37 LU, Lon : 126.37 BT, Mag = 6.4, Depth = 58 Km, 124 km BaratLaut TERNATE-MALUKU UTARA											
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	Max	Intensitas Konversi	SIG-BMKG	LAT	LON	R (Hypocentre)
COLOCATED ACCELEROGRAPH											
1	KOTAMOBAGU	KMSI	0.409815	1.171724	**1.4699718**	1.469972	II-III	I-II	0.5745	123.9807	283.235
2	MELONGUANE	MGAI	0.037857	0.072674	**0.0534647**	0.072674	I	I	4.0079	126.67	296.604
3	MARISA GORONTALO	MRSI	0.012317	0.015275	**0.016272**	0.016272	I	I	0.4771	121.9406	505.576
4	AMPANA SULTENG	APSI	-0.03548	0.049151	**0.0558571**	0.055857	I	I	-0.9108	121.6487	585.143
5	MAPAGA SABANG PALU	MPSI	0.00367	0.003416	**0.0045643**	0.004564	I	I	0.3374	119.898	731.587
6	TONDANO	TMSI	0.926715	4.221868	**3.2595196**	4.221868	IV	II	1.2948	124.92	165.805
NON COLOCATED ACCELEROGRAPH											
1	STA MET SAMRATULANGI MANADO	SAMI	0.646063	1.431959	**1.6042885**	1.604289	III-IV	II	1.537	124.9221	166.756
2	STA MET LUWUK	LUWS	0.089721	0.069046	**0.094318**	0.094318	I	I	-1.0411	122.771	483.428



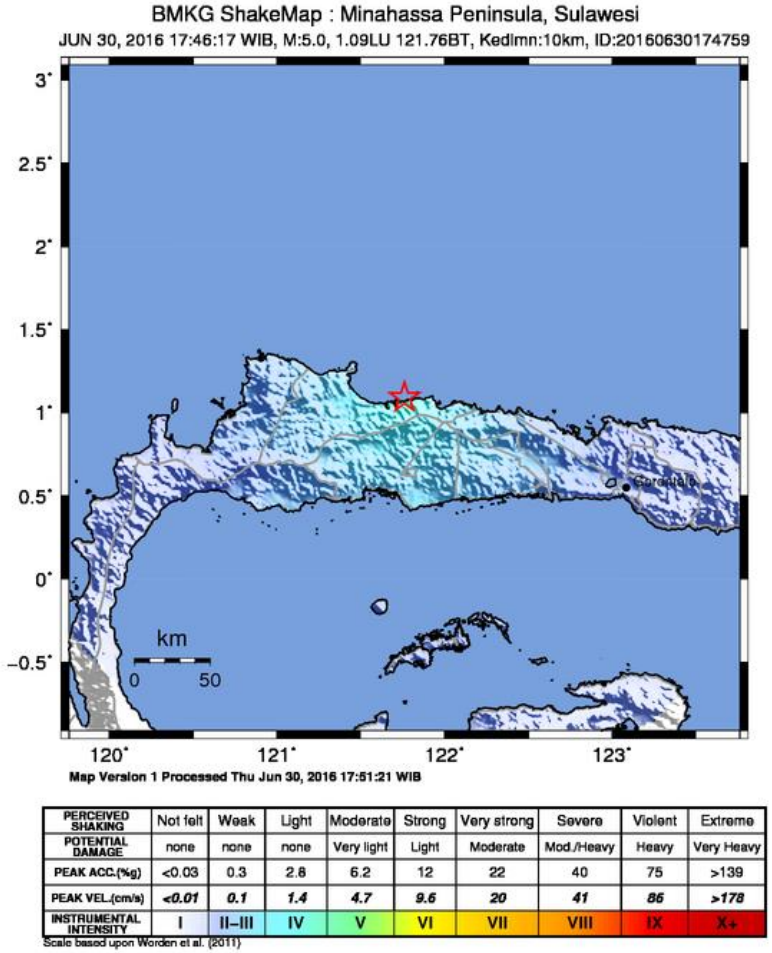
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

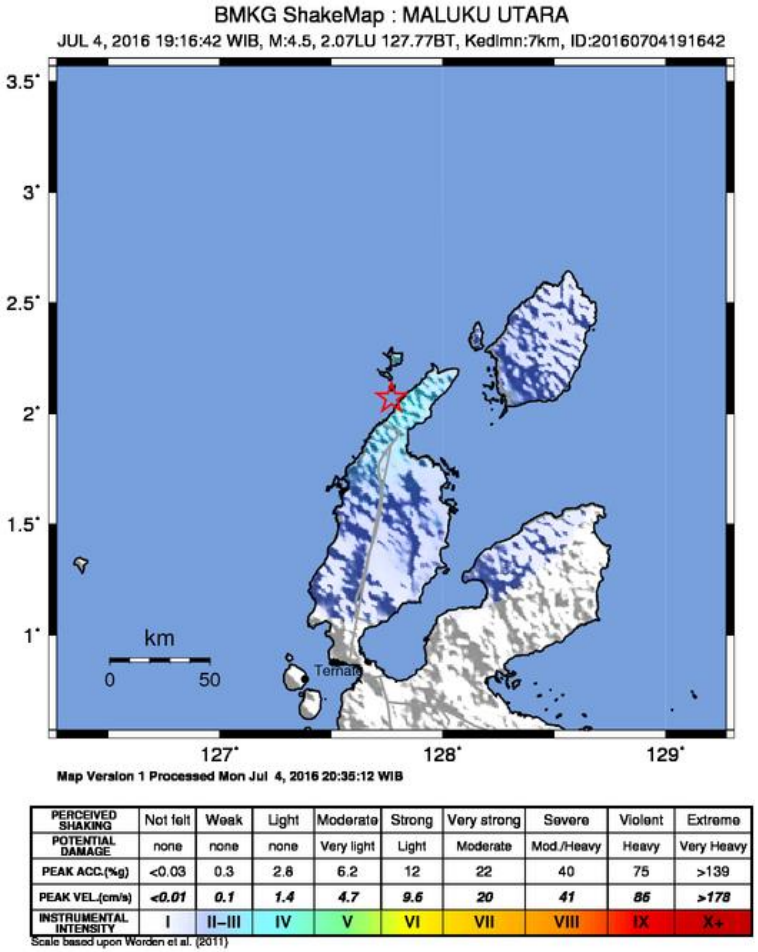


PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

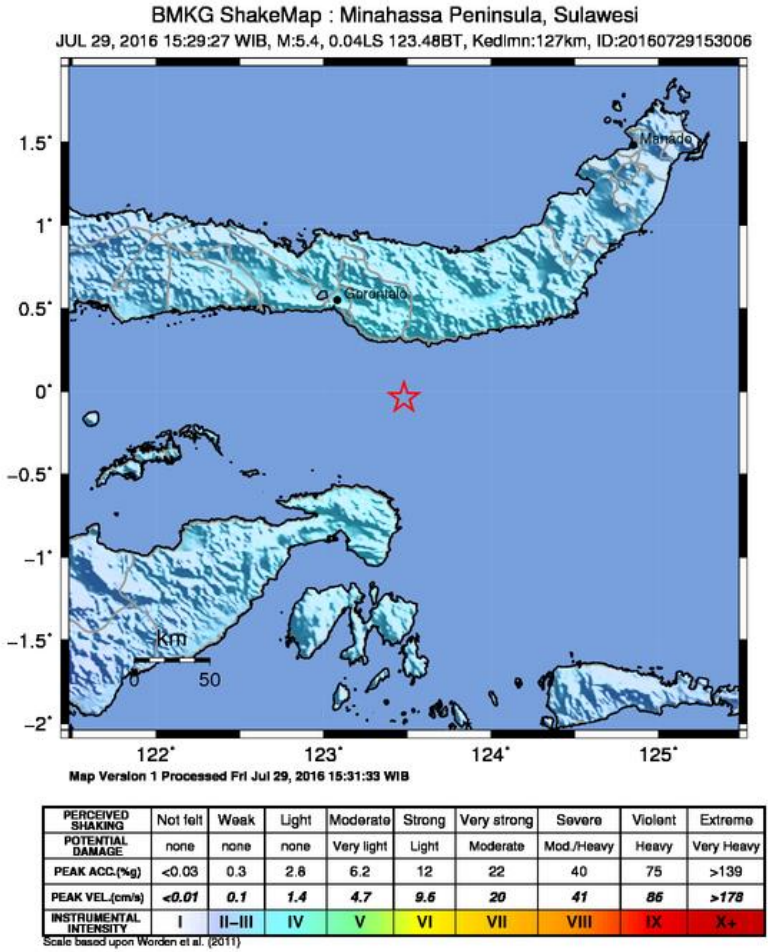
Gempa Gorontalo, 30 Juni 2016, 18:46:16 WITA											
Lat : 1.19 LU, Lon : 121.74 BT, Mag = 5.0, Depth = 10 Km, 42km TimurLaut POHUWATO-GORONTALO											
No	Stasiun	Kode	Z(gals)	N(gals)	E(gals)	Max	Intensitas Konversi	SIG-BMKG	LAT	LON	R (Hypocentre)
1	KOTAMOBAGU	KMSI	0.47861	0.55452	0.51715	0.55452	I	I	0.5745	123.981	258.124
2	MARISA GORONTALO	MRSI	2.39633	4.91651	4.89189	4.91651	III-IV	II	0.4771	121.941	82.811
3	STA MET SAMRATULANGI MANADO	SAMI	0.19366	0.38206	0.29891	0.38206	I	I	1.537	124.922	355.448
4	SUMALATA	SMSI	2.24924	4.8355	4.58607	4.8355	III-IV	II	0.9885	122.365	73.616

PETA 20. GUNCANGAN (*SHAKEMAP*) BULAN JULI 2016



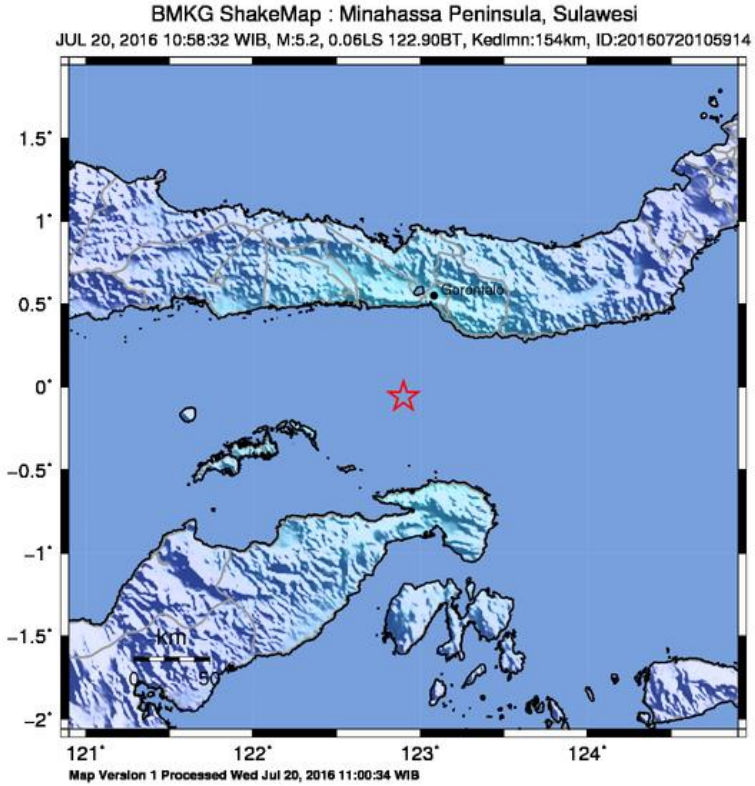
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



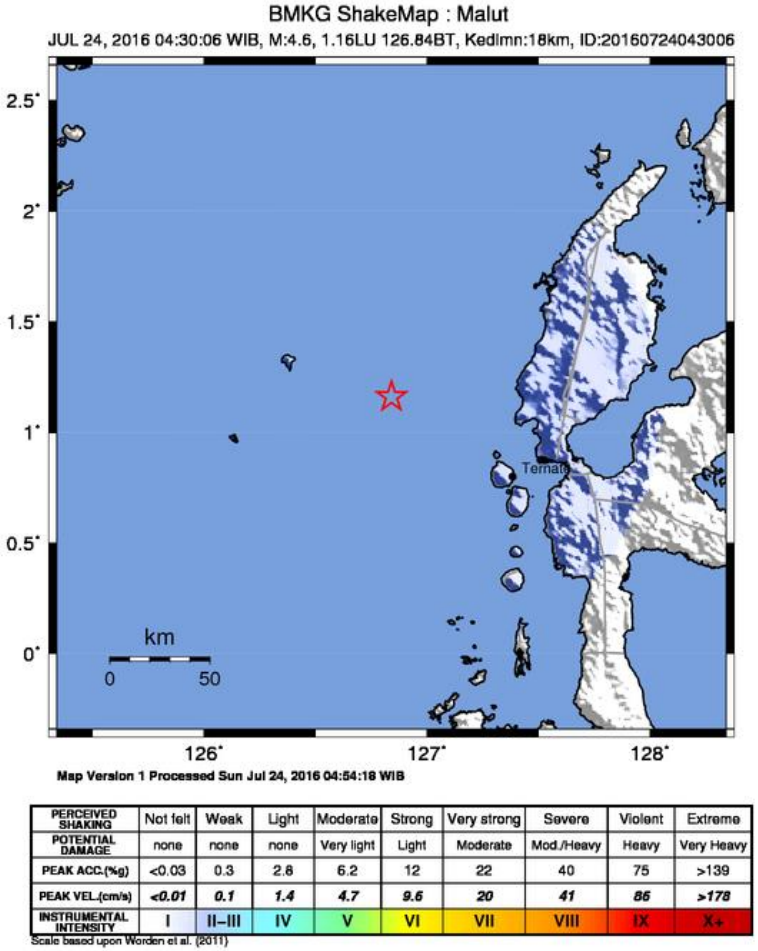
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 20 Juli 2016, jam 10:58:32 WIB, Mag:5.2, Lat:0.06°LS, Long:122.90°BT, Kedalaman:154 Km, Minahassa Peninsula,Sulawesi

No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	LUWS	STA MET LUWUK	-1.04	122.77	109.03	II	I	1.8532	1.9355	1.0584	
2	LUWI	LUWUK	-1.04	122.77	109.11	II-III	I	3.6025	NaN	2.7616	
3	MRSI	MARISA GORONTALO	0.48	121.94	121.23	II-III	I	2.1511	1.6699	1.0437	
4	KMSI	KOTA MUBAGO	0.57	123.98	138.39	II-III	I	0.5841	0.9535	0.4420	
5	APSI	AMPANA SULTENG	-0.91	121.65	167.23	II-III	I	1.2858	0.9418	2.1344	
6	SLMI	STA GEOF MANADO	1.44	124.84	271.79	I	I	0.0000	0.1176	0.0245	
7	PMCI	STA MET POSO	-1.42	120.65	291.33	II	I	0.6056	0.8771	0.2724	
8	MPSI	MAPAGA SABANG PALU	0.34	119.90	335.73	I	I	0.2029	0.1862	0.1078	C
9	TTSI	TANATORAJA	-3.05	119.82	475.91	I	I	0.0500	0.0255	0.0588	D
10	KKSI	KOLAKA	-4.17	121.65	476.81	I	I	0.0255	0.0216	0.0186	
11	TGTI	STA GEOF TERNATE	0.77	127.37	504.24	I	I	0.0431	0.0588	0.0500	
12	TNTI	TERNATE	0.77	127.37	504.24	I	I	0.1333	NaN	0.1058	
13	SGSI	SANGIHE	3.69	125.53	507.77	II	I	4.7608	1.7699	1.9963	
14	LBMI	LABUHA	-0.64	127.50	514.62	I	I	0.4508	0.5723	0.1852	
15	OBMI	PULAU OBI	-1.34	127.64	545.37	I	I	0.3077	0.2793	0.1117	
16	BNSI	BONE	-4.40	120.11	572.84	I	I	0.0118	0.0108	0.0098	
17	PMSI	PARALINTANG MAJENE	-3.50	118.92	584.23	I-II	I	0.0294	0.0745	0.0372	C
18	NLAI	NAMLEA MALUKU	-3.24	127.10	584.52	I	I	0.3234	0.1833	0.1882	
19	BKSI	BULUKUMBA	-5.32	120.12	660.43	I	I	0.0049	0.0078	0.0127	A
20	BDMI	STA MET BANDANAIRA	-4.52	129.90	921.74	I	I	0.1519	0.0549	0.2460	



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

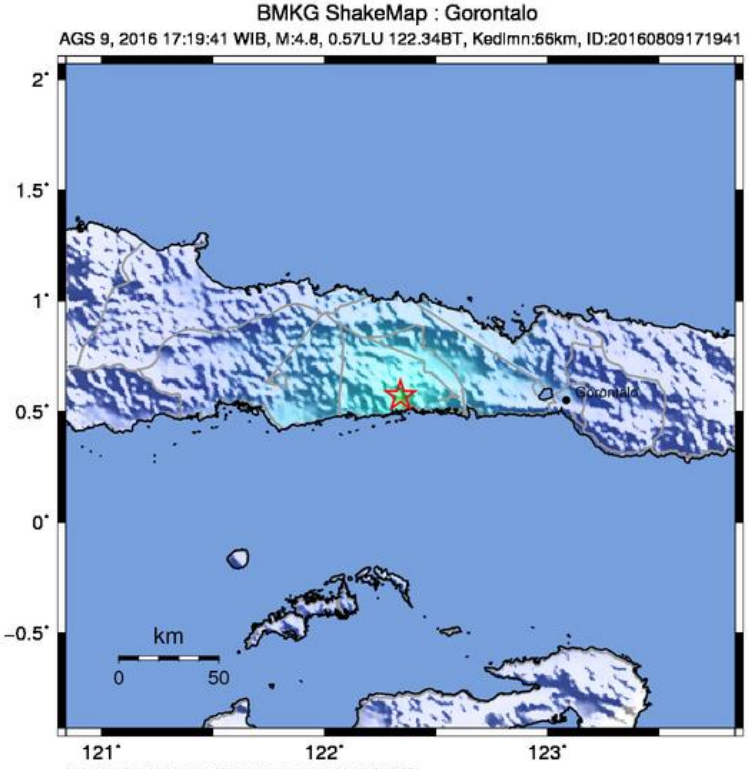
Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 24 Juli 2016, jam 04:30:06 WIB, Mag:4.4, Lat:1.19°LU, Long:126.84°BT, Kedalaman:20 Km, Northern MoluccaSea

No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	GLMI	GALELA	1.84	127.79	127.66	I	I	0.4175	0.3616	0.2538	
2	BTSI	STA MAR BITUNG	1.44	125.18	186.78	II	I	0.9731	0.9976	1.7611	
3	LBMI	LABUHA	-0.64	127.50	216.13	I	I	0.2009	0.1823	0.0725	
4	KWSI	STA KLIM KAYUWATU	1.50	124.92	216.44	I-II	I	0.5625	0.3714	0.3920	D
5	OBMI	PULAU OBI	-1.34	127.64	295.32	I	I	0.0225	0.0216	0.0078	
6	SGSI	SANGIHE	3.69	125.53	313.43	I	I	0.2528	0.2528	0.1147	
7	KMSI	KOTA MUBAGO	0.57	123.98	325.15	I	I	0.0598	0.0666	0.0402	
8	APSI	AMPANA SULTENG	-0.91	121.65	622.66	I	I	0.0059	0.0069	0.0069	
9	TNTI	TERNATE	0.77	127.37	74.78	I-II	I	0.8350	NaN	1.1946	
10	TGTI	STA GEOF TERNATE	0.77	127.37	74.79	I	I	0.2528	0.2528	0.0000	

PETA 21. GUNCANGAN (*SHAKEMAP*) BULAN AGUSTUS 2016



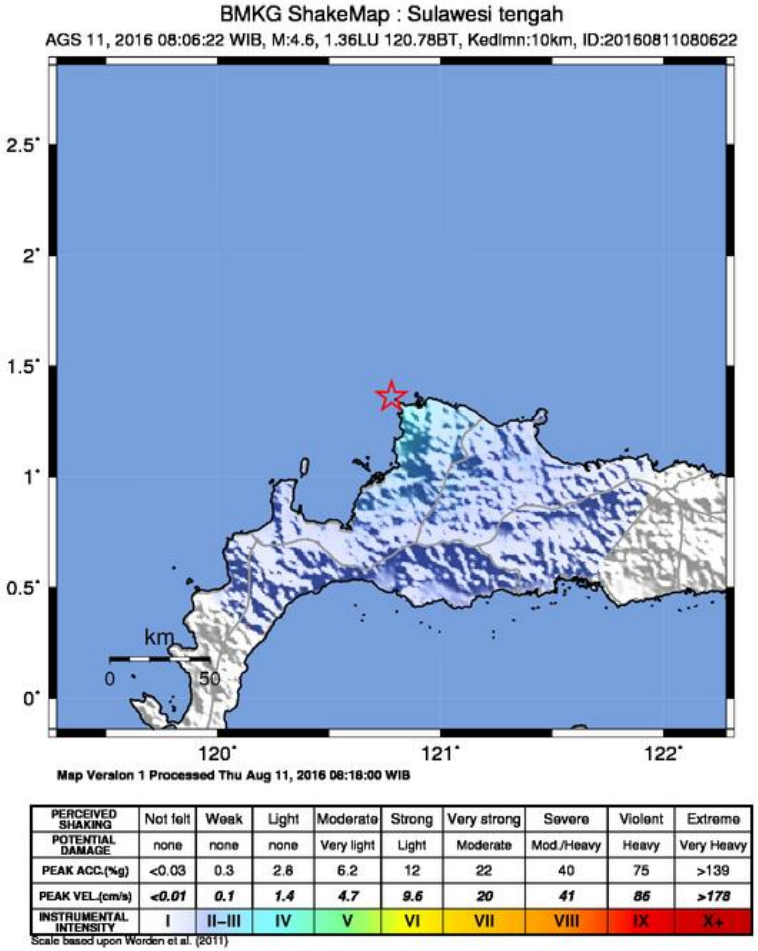
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 09 Agustus 2016, jam 17:19:41 WIB, Mag:4.8, Lat:0.57°LU, Long:122.34°BT, Kedalaman:66 Km, 16km TenggaraBOALEMO-GORONTALO

No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	APSI	AMPANA SULTENG	-0.91	121.65	181.70	I	I	0.1578	0.1842	0.2342	
2	KMSI	KOTA MUBAGO	0.57	123.98	182.46	I-II	I	0.3058	0.5037	0.2185	
3	TOSI	STA MET TOLI TOLI	1.12	120.79	182.48	I	I	0.4910	0.4322	0.3479	
4	LUWS	STA MET LUWUK	-1.04	122.77	185.43	I	I	0.3989	0.6390	0.2587	
5	LUWI	LUWUK	-1.04	122.77	185.55	II	I	1.5896	NaN	0.7585	
6	MPSI	MAPAGA SABANG PALU	0.34	119.90	272.76	I	I	0.2568	0.2773	0.1401	C
7	SAMI	STA MET SAMRATULANGI MANADO	1.54	124.92	306.53	I	I	0.3430	0.4204	0.1735	
8	SLPI	STA GEOF PALU	-0.91	119.84	323.04	I	I	0.0833	0.0617	0.1372	D
9	MRSI	MARISA GORONTALO	0.48	121.94	45.55	II-III	I	2.2403	2.4147	1.4455	
10	TTSI	TANATORAJA	-3.05	119.82	490.01	I	I	0.0519	0.0382	0.0206	D
11	SGSI	SANGIHE	3.69	125.53	495.57	I	I	0.3842	0.4136	0.2372	
12	GMCI	STA MET GORONTALO	0.63	122.85	57.10	III	II	3.7975	0.0000	2.3853	D



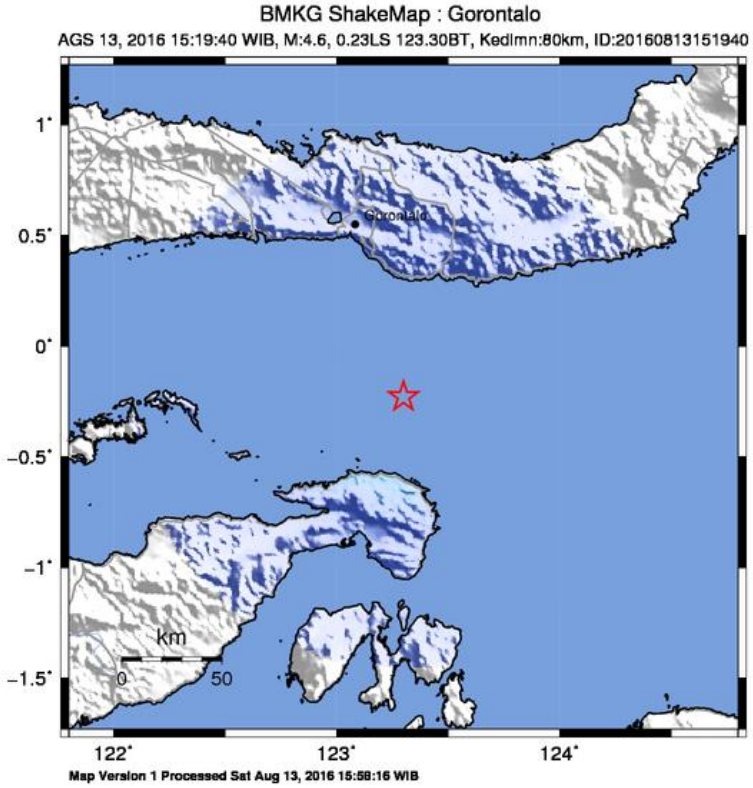
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 11 Agustus 2016, jam 08:06:22 WIB, Mag:4.6, Lat:1.36°LU, Long:120.78°BT, Kedalaman:10 Km, 53km TimurLaut

No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	MPSI	MAPAGA SABANG PALU	0.34	119.90	150.15	I	I	0.1852	0.2519	0.1284	C
2	MRSI	MARISA GORONTALO	0.48	121.94	162.17	I	I	0.1107	0.1019	0.0608	
3	LUWI	LUWUK	-1.04	122.77	346.96	I	I	0.0676	NaN	0.0510	



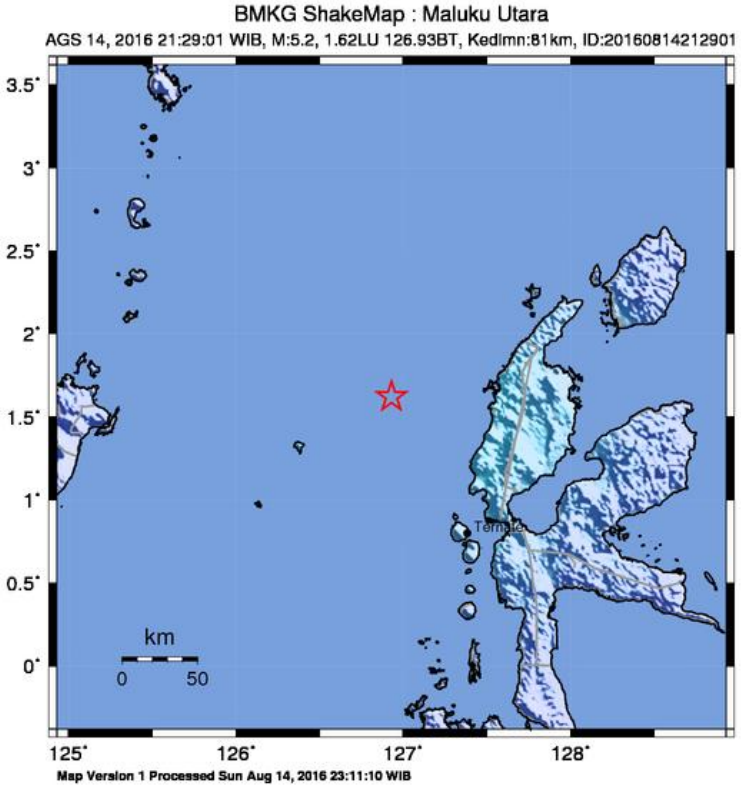
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 13 Agustus 2016, jam 15:19:40 WIB, Mag:4.6, Lat:0.23°LU, Long:123.30°BT, Kedalaman:10 Km, 88km BaratDayaBOLEBOLANGO-GORONTALO

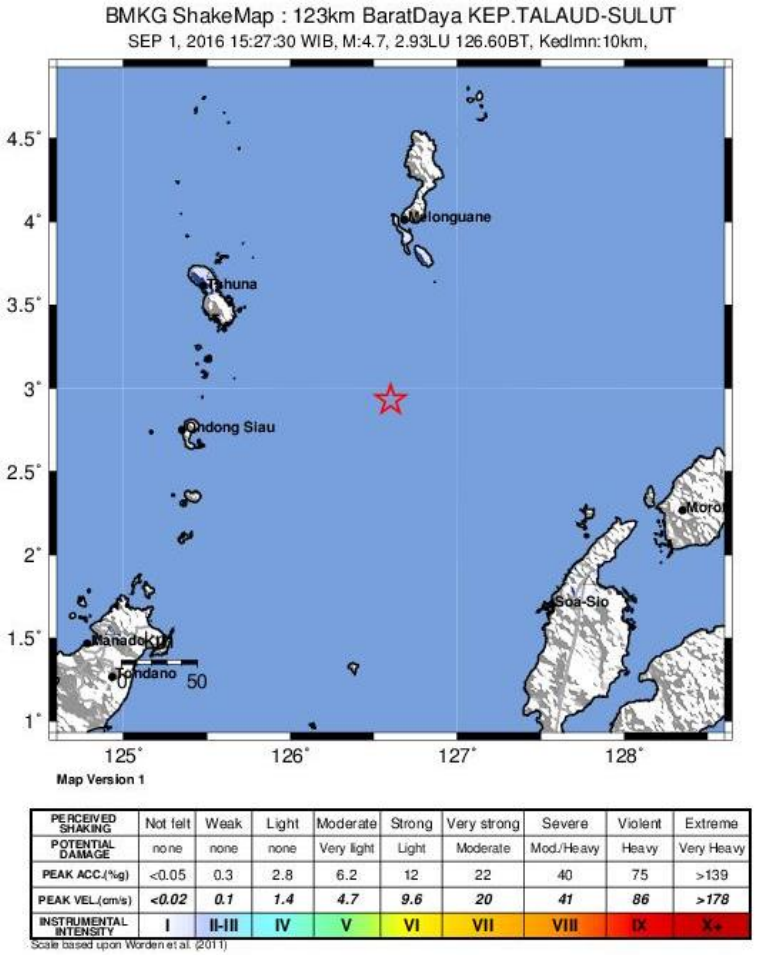
No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	LUWI	LUWUK	-1.04	122.77	153.12	I-II	I	0.7928	NaN	0.5302	
2	MRSI	MARISA GORONTALO	0.48	121.94	153.59	I	I	0.3410	0.4861	0.1352	
3	APSI	AMPANA SULTENG	-0.91	121.65	223.14	I	I	0.1264	0.1470	0.1499	
4	MPSI	MAPAGA SABANG PALU	0.34	119.90	378.47	I	I	0.0206	0.0235	0.0137	C
5	OBMI	PULAU OBI	-1.34	127.64	513.62	I	I	0.1323	0.1313	0.0461	



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

PETA 22. GUNCANGAN (*SHAKEMAP*) BULAN SEPTEMBER 2016



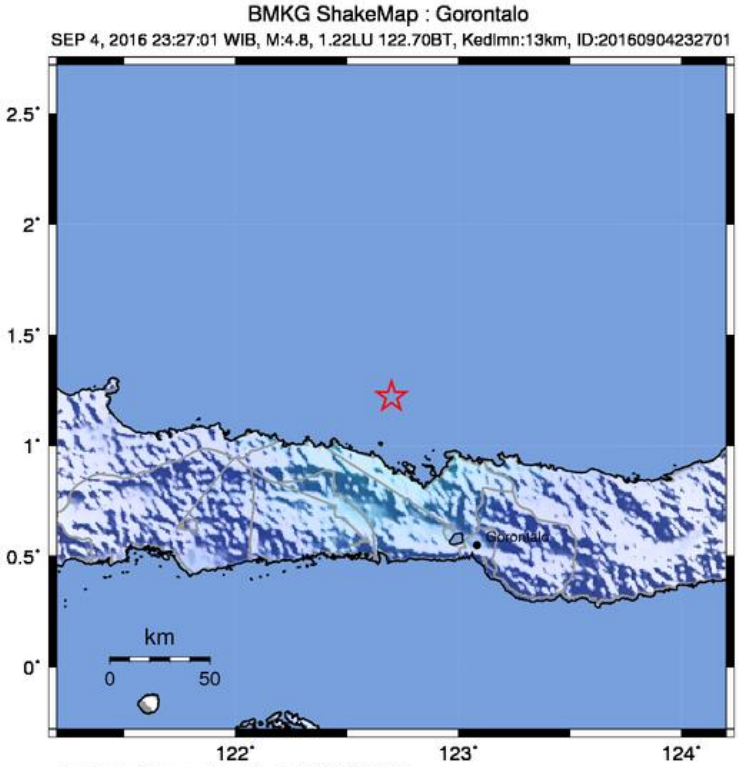
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.05	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.02*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 01 September 2016, jam 15:27:30 WIB, Mag:4.7, Lat:2.93°LU, Long:126.6°BT, Kedalaman:10 Km, 123km BaratDayaKEP.TALAUD-SULUT

No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	SGSI	SANGIHE	3.69	125.53	145.61	III	II	5.7595	5.1509	3.7034	
2	GLMI	GALELA	1.84	127.79	179.33	I	I	0.2372	0.1921	0.1588	
3	SAMI	STA MET SAMRATULANGI MANADO	1.54	124.92	242.39	I	I	37601058078576449016357387459288019538917209337148			
4	TNTI	TERNATE	0.77	127.37	254.64	I	I	0.0696	NaN	0.0539	
5	MRSI	MARISA GORONTALO	0.48	121.94	585.23	I	I	0.0157	0.0127	0.0157	
6	NLAI	NAMLEA MALUKU	-3.24	127.10	688.21	I	I	0.1450	0.1460	0.2136	
7	MPSI	MAPAGA SABANG PALU	0.34	119.90	798.70	I	I	0.0118	0.0088	0.0078	C



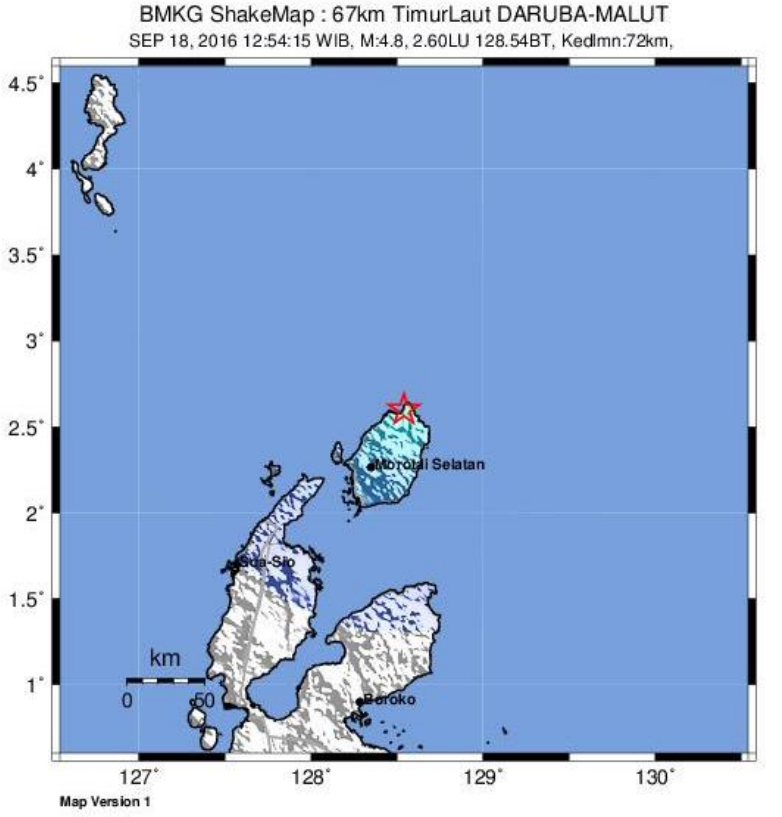
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 04 September 2016, jam 23:27:01 WIB, Mag:4.8, Lat:1.22°LU, Long:122.70°BT, Kedalaman:13 Km, 40km TimurLautGORONTALO

No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	MRSI	MARISA GORONTALO	0.48	121.94	118.09	II	I	1.1731	1.3936	0.6987	
2	KMSI	KOTA MUBAGO	0.57	123.98	159.49	I-II	I	0.6262	0.4635	0.3156	
3	TOSI	STA MET TOLI TOLI	1.12	120.79	212.18	I	I	0.3822	0.2136	0.0970	
4	LUWI	LUWUK	-1.04	122.77	251.63	I	I	0.1597	NaN	0.1019	
5	APSI	AMPANA SULTENG	-0.91	121.65	264.19	I	I	0.0833	0.1009	0.0608	
6	MPSI	MAPAGA SABANG PALU	0.34	119.90	326.63	I	I	0.0676	0.0539	0.0372	C
7	SGSI	SANGIHE	3.69	125.53	417.07	I	I	0.0490	0.0598	0.0323	
8	GMCI	STA MET GORONTALO	0.63	122.85	67.69	III	II	0.0000	4.3718	2.7077	D
9	NLAI	NAMLEA MALUKU	-3.24	127.10	696.43	I	I	0.0137	0.0108	0.0108	



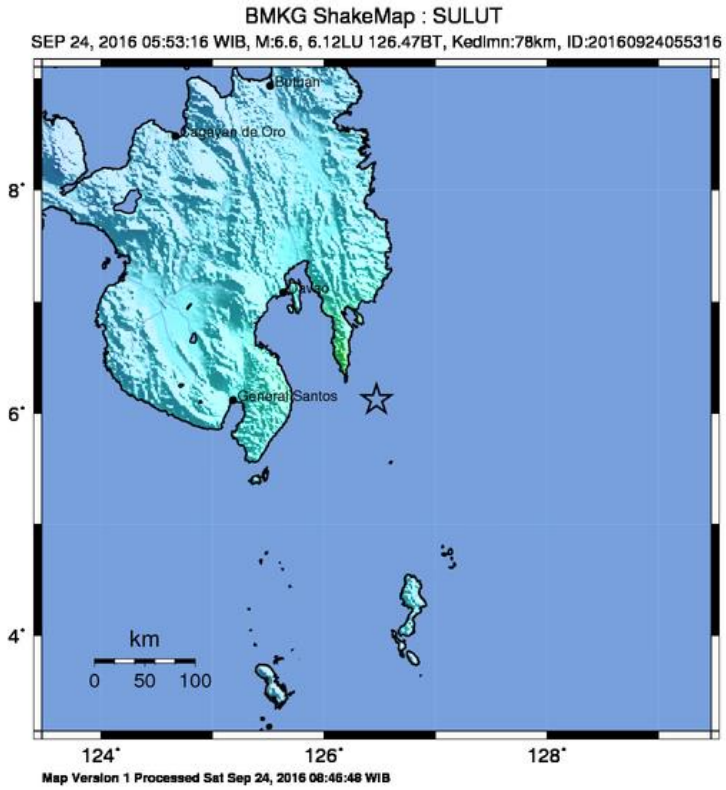
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.05	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.02*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 18 September 2016, jam 12:54:15 WIB, Mag:4.8, Lat:2.6°LU, Long:128.54°BT, Kedalaman:72 Km, 67km TimurLautDARUBA-MALUT

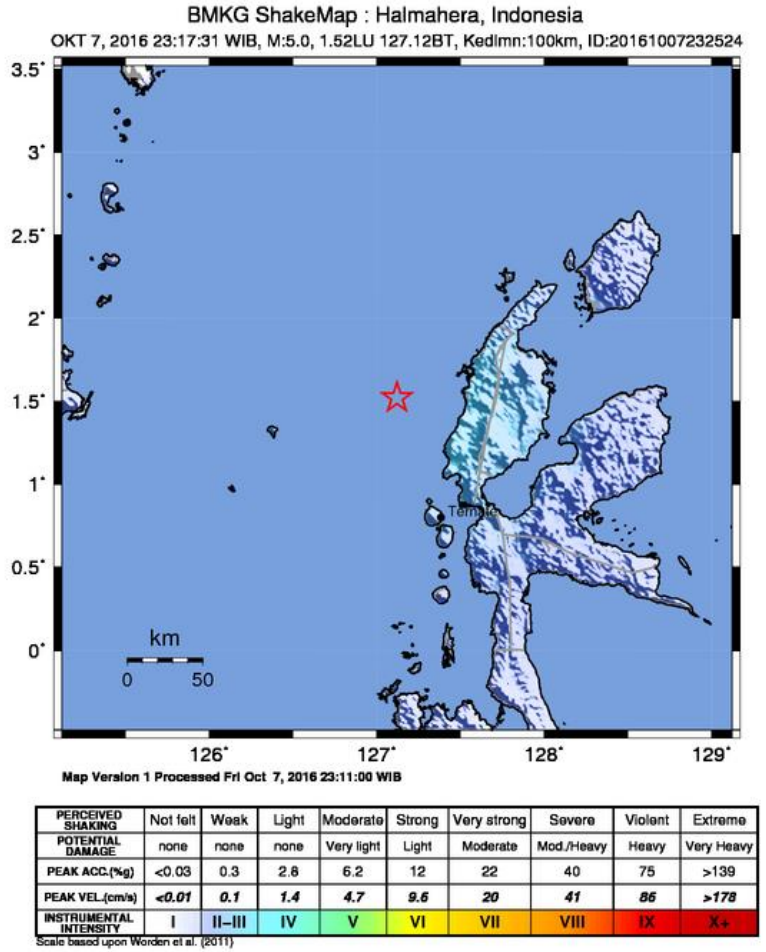
No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	GLMI	GALELA	1.84	127.79	118.99	II	I	0.0039	0.0000	0.0039	
2	TNTI	TERNATE	0.77	127.37	241.48	I	I	0.0568	NaN	0.0343	
3	SGSI	SANGIHE	3.69	125.53	355.44	I	I	0.3646	0.3842	0.2303	
4	LBMI	LABUHA	-0.64	127.50	378.11	I	I	0.0147	0.0157	0.0118	
5	RAPI	RAJA AMPAT	-0.41	130.82	419.92	I	I	0.0167	0.0176	0.0167	
6	KWSI	STA KLIM KAYUWATU	1.50	124.92	420.63	I	I	2.3657	1.3416	NaN	D
7	OBMI	PULAU OBI	-1.34	127.64	449.43	I	I	0.0549	0.0137	0.0137	
8	SWI	SORONG	-0.86	131.26	489.51	I	I	0.0666	0.0216	0.0167	
9	KRAI	KAIRATU	-3.32	128.40	658.29	I	I	0.0706	0.0500	0.0549	E
10	MSAI	MASOHI	-3.35	128.93	662.59	I	I	0.1637	0.1107	0.2205	
11	GMCI	STA MET GORONTALO	0.63	122.85	669.28	I	I	0.2185	0.1970	0.1950	D
12	SMSI	SUMALATA	0.99	122.36	709.28	I	I	0.0147	0.0147	0.0108	
13	FAKI	FAK-FAK	-2.92	132.26	740.32	I	I	0.0039	NaN	0.0039	
14	LUWI	LUWUK	-1.04	122.77	758.37	I	I	0.0147	NaN	0.0225	
15	BNDI	BANDANEIRA	-4.31	129.54	776.78	I	I	0.0392	NaN	0.1235	
16	APSI	AMPANA SULTENG	-0.91	121.65	859.78	I	I	0.0098	0.0088	0.0108	
17	SRPI	SERUI	-1.87	136.24	989.81	I	I	0.0676	0.0696	0.0343	



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

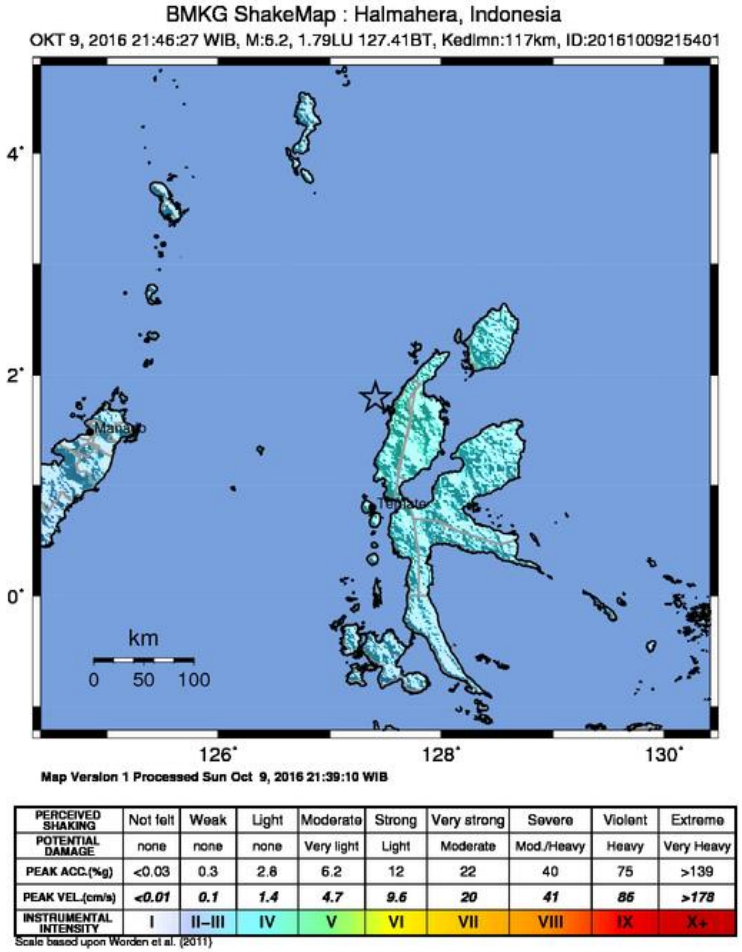
Scale based upon Worden et al. (2011)

PETA 23. GUNCANGAN (*SHAKEMAP*) BULAN OKTOBER 2016



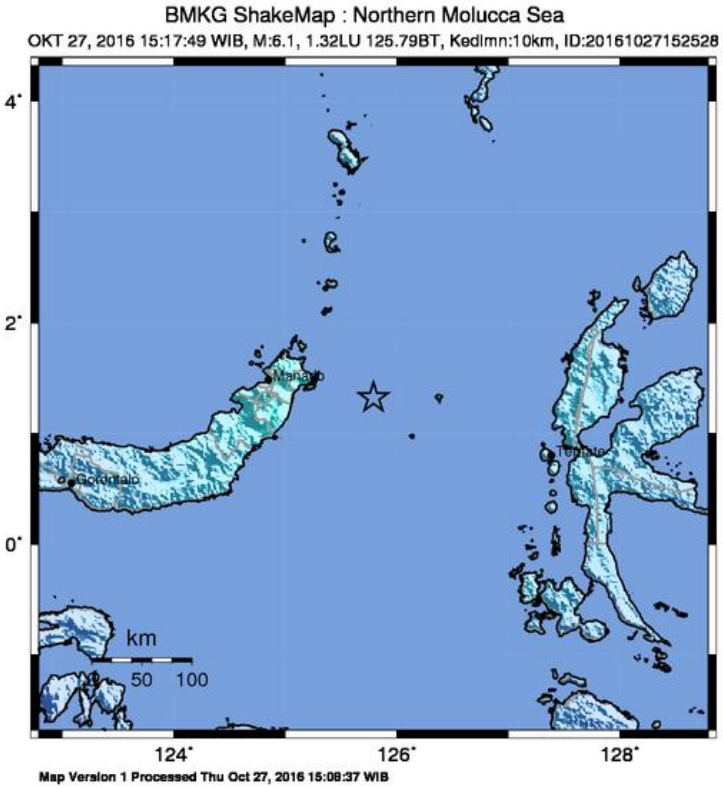
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

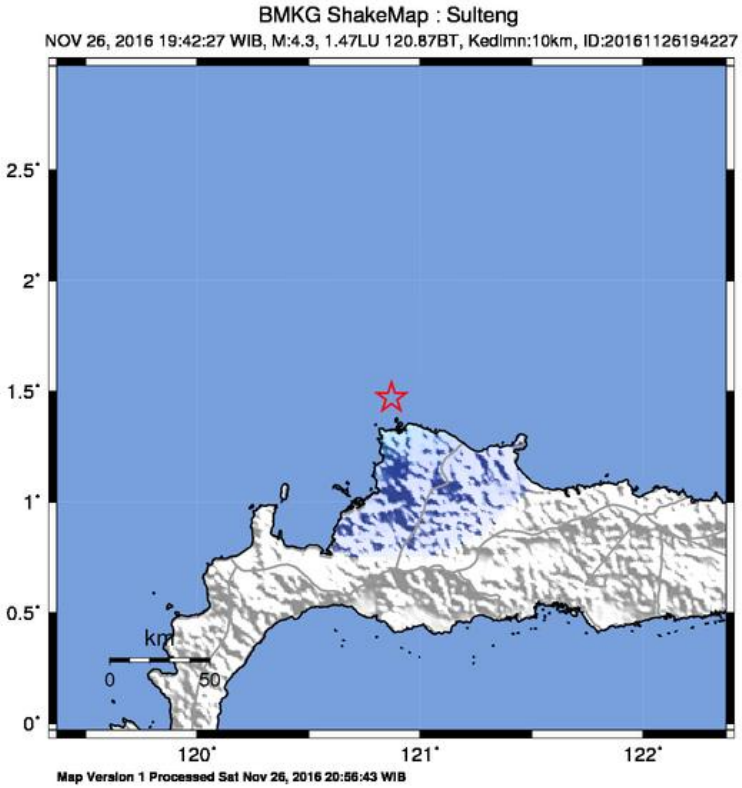
Scale based upon Worden et al. (2011)

Badan Meteorologi Klimatologi dan Geofisika
Laporan Kejadian Gempa Bidang Seismologi Teknik

Gempabumi 27 Oktober 2016, jam 15:17:49 WIB, Mag:6.1, Lat:1.32°LU, Long:125.79°BT, Kedalaman:10 Km, Northern MoluccaSea

No	IdSta	Stasiun	Latitude	Longitude	Jarak	MMI	SIG	PGA-EW(gal)	PGA-NS(gal)	PGA-UD(gal)	Site Class
1	SLMI	STA GEOF MANADO	1.44	124.84	103.55	III	II	6.1544	5.6232	5.4743	
2	TNTI	TERNATE	0.77	127.37	182.41	II	I	0.4929	NaN	0.3695	
3	GLMI	GALELA	1.84	127.79	226.21	II	I	0.6370	0.5223	0.4351	
4	SGSI	SANGIHE	3.69	125.53	261.45	III-IV	II	10.8290	11.2396	6.6346	
5	LBMI	LABUHA	-0.64	127.50	285.88	II	I	0.7899	0.5704	0.3949	
6	OBMI	PULAU OBI	-1.34	127.64	357.41	I	I	0.3979	0.3744	0.1715	
7	SMSI	SUMALATA	0.99	122.36	379.32	I	I	0.1421	0.2038	0.1098	
8	LUWI	LUWUK	-1.04	122.77	422.89	II	I	0.8408	NaN	0.5704	
9	LUWS	STA MET LUWUK	-1.04	122.77	422.92	I-II	I	0.3303	0.3146	0.0000	
10	MRSI	MARISA GORONTALO	0.48	121.94	434.86	I	I	0.1499	0.1735	0.1088	
11	APSI	AMPANA SULTENG	-0.91	121.65	519.79	II	I	0.5537	0.5645	0.3479	
12	NLAI	NAMLEA MALUKU	-3.24	127.10	524.23	I-II	I	0.9359	0.8428	0.7330	
13	TOSI	STA MET TOLI TOLI	1.12	120.79	552.64	I	I	0.1274	0.0921	0.0402	
14	KRAI	KAIRATU	-3.32	128.40	588.29	I	I	0.3479	0.4263	0.1019	E
15	RAPI	RAJA AMPAT	-0.41	130.82	588.35	I	I	0.0069	0.0069	0.0167	
16	PAMI	STA MET PATTIMURA AMBON	-3.71	128.10	612.14	III	II	3.7701	0.0000	2.2207	E
17	AAI	AMBON	-3.69	128.19	614.36	I	I	0.1754	0.1254	0.0813	
18	AMHI	STA MET AMAHAI	-3.35	128.93	621.98	I	I	0.0029	0.1264	0.1519	D
19	MSAI	MASOHI	-3.35	128.93	622.05	II	I	0.9731	0.8065	0.6154	
20	SWI	SORONG	-0.86	131.26	651.55	I	I	0.0176	0.0176	0.0108	
21	BTSI	STA MAR BITUNG	1.44	125.18	66.51	VIII	IV	397.6889	425.6767	217.3424	
22	MPSI	MAPAGA SABANG PALU	0.34	119.90	660.95	I	I	0.0480	0.0382	0.0206	C
23	PASI	STA MET MUTIARA PALU	-0.92	119.91	696.81	II	I	0.2979	0.3283	0.5253	C
24	MSBA	STA MET MASAMBA	-2.56	120.32	741.74	I	I	0.0784	0.0696	0.0568	D
25	BNDI	BANDANEIRA	-4.31	129.54	749.35	I	I	0.1470	NaN	0.1431	
26	KKSI	KOLAKA	-4.17	121.65	761.32	I	I	0.0745	0.0441	0.0304	
27	BDMI	STA MET BANDANAIRA	-4.52	129.90	791.14	I	I	0.0696	0.0480	0.2195	
28	SUHA	STA MET HASANUDIN MAKASAR	5.00	119.57	799.12	I	I	0.0294	0.0363	0.0363	C
29	FFPI	STA MET TOREA FAK FAK	-2.92	132.26	857.21	I	I	0.1940	0.1833	0.2538	
30	FAKI	FAK-FAK	-2.92	132.26	857.23	I	I	0.0372	NaN	0.0343	
31	SPSI	SIDRAP	-3.96	119.77	887.35	I	I	0.0470	0.0470	0.0323	
32	BNSI	BONE	-4.40	120.11	893.22	I	I	0.0206	0.0216	0.0157	
33	MJNE	STA MET MAJENE	-3.55	118.98	927.50	I	I	0.4312	1.3720	0.0735	C
34	SGKI	SANGATA	-0.53	117.60	930.01	I	I	0.0284	0.0265	0.0167	
35	MAPI	STA MET MANOKWARI	-0.89	134.05	947.69	I	I	0.0078	0.0088	0.0147	
36	NNKI	STA MET NUNUKAN	4.13	117.67	951.85	I	I	0.0804	0.0353	0.0402	
37	SAMI	STA MET SAMRATULANGI MANADO	1.54	124.92	96.44	II	I	0.0833	0.0000	0.1999	
38	BKSI	BULUKUMBA	-5.32	120.12	967.30	I	I	0.0108	0.0098	0.0108	A
39	SMKI	SAMARINDA	-0.45	117.21	970.97	I	I	0.0588	0.0510	0.0559	
40	RKPI	RANSIKI	-1.51	134.18	981.06	I	I	0.0833	0.1323	0.1999	
41	KMRS	STA KLIM MAROS	-5.00	119.57	982.23	I	I	0.1166	0.1480	0.0921	E

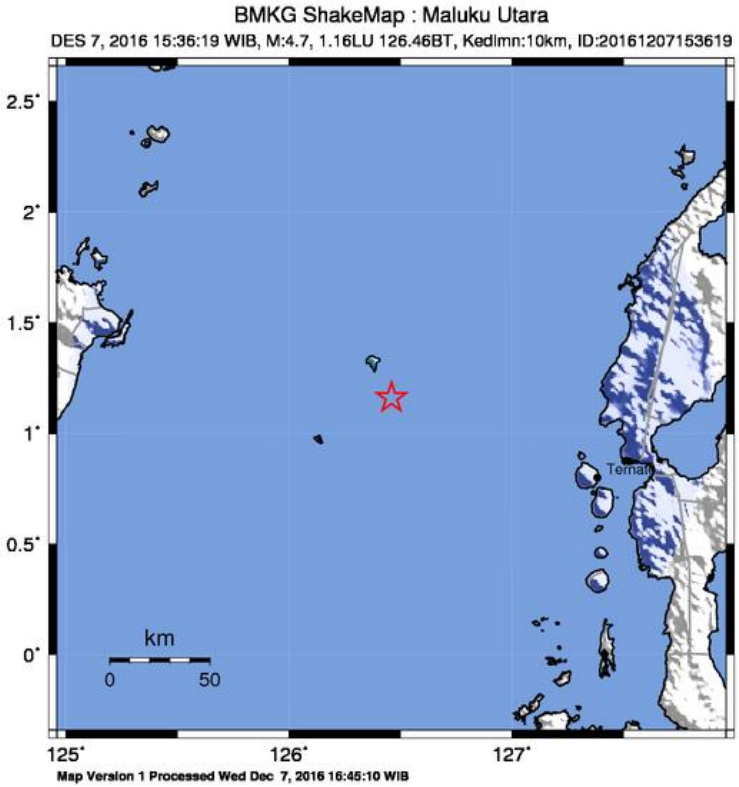
PETA 24. GUNCANGAN (*SHAKEMAP*) BULAN NOPEMBER 2016



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)

PETA 25. GUNCANGAN (*SHAKEMAP*) BULAN DESEMBER 2016



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.03	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.01*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II–III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2011)