

Supplement File 1. Field measurements records for the 17 July 2006 tsunami

District	Village	X ¹	Y ²	Measurement		Tide level ³ (m)		Wave height before breaking (m)	Flow depth (m)	Run-up height ⁶ (above m.s.l.)	Reference point	D ⁷ (m)	Flow dir	Additional comments from eyewitnesses	Reliability ⁸	Team ⁹
				Day	Time	from L.L.L. ⁴	from m.s.l. ⁵ (Z0)									
Cimerak	Bulakbenda	222038	9136696	01/08	17:45	0.5	-0.6		2.5							2
		222652	9137464	01/08	18:00	0.5	-0.6		4.0							2
Pangandaran	Batukaras	Interviews tens of villagers. 3 waves; 1 st wave at 16:10 without breaking; 2 nd wave 3 minutes later: highest one; 3 rd wave smaller; backwash after 10 minutes.													++	1
		224019	9142803	29/08	15:50	0.6	-0.5		1.9	5.5	Tree	58				1
		223894	9143849	29/08	17:40	0.5	-0.6	7.8		7.6	tree	121		Breaking on the road		1
		223910	9143605	29/08	17:15	0.5	-0.6	6.2		10.4	pylon	89		Breaking on the road		1
Pangandaran	Parigi	223910	9143706	29/08	17:15	0.5	-0.6		1	1.6	wall	148	N300			1
Pangandaran	Batu Hiu	224361	9146591	01/08	14:45	1.15	-0.05		5.5							2
		228007	9148960	01/08	13:45	1.15	-0.05		1.4							2
		228062	9149163	01/08	13:20	1.35	-0.25		1.4							2
		228162	9148945	01/08	13:05	1.4	-0.3		1.5							2
Pangandaran	Karangtirta	233658	9150479	01/08	12:45	1.4	-0.3		0.8							2
		233699	9150440	01/08	12:40	1.4	-0.3		0							2
		233773	9150258	01/08	12:30	1.45	-0.35		0							2
		233992	9150402	01/08	12:00	1.5	-0.4		0							2
		234080	9050358	01/08	11:45	1.5	-0.4		1.2							2
		234124	9150465	01/08	12:15	1.5	-0.4		0.8							2
		234311	9150249	01/08	10:45	1.35	-0.25		2.2							2
		234413	9150371	01/08	11:05	1.4	-0.3		2.7							2
		234424	9156468	01/08	11:20	1.4	-0.3		1.5							2
		234433	9150405	01/08	11:10	1.4	-0.3		2.7							2
		234434	9150927	01/08	11:15	1.4	-0.3		2.7							2

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				Day	Time	from L.L.L. ⁴	from m.s.l. ⁵									
Pangandaran		236545	9149937	18/07	17:00	0.9	0.2		2.5	7.8	Wall					1
Pangandaran		236588	9150126	18/07	13:30	0.45	0.65		0	4.9	Field					1
Pangandaran	Pananjung	3 waves; sea retreat; sound like bom; earthquake slightly felt; arrival time 16:19 at Pantai Barat beach (+/- 05: clock broken by the tsunami); 5 minutes later at Pantai Timur; a few minutes between the waves; 2 nd wave highest one, up to 10 m when hit the peninsula cliffs													+++	1
		239071	9149736	18/07	14:25	1.45	-0.35		2	3.2	Wall					1
		240051	9149490	20/07	09:40	0.7	0.4		3.9							2
		240089	9149393	18/07	11:00	1.2	-0.1		3.8	6.4	Tree					1
		240117	9149382	18/07	12:00	1.4	-0.3		3.9	5.9						1
		240129	9149426	18/07	13:00	1.5	-0.4		2.1	5.6	Wall					1
		240134	9149524	18/07	14:00	1.5	-0.4			1.9	Wall					1
		240168	9149527	18/07	13:30	1.5	-0.4		1.1	1.9	Wall					1
		240168	9149521	18/07	13:30	1.5	-0.4			1.7						1
		240179	9149341	18/07	10:30	1.1	0			5.7	Tree					1
		240184	9149380	20/07	09:35	0.7	0.4		5.8							2
		240205	9149365	18/07	10:30	1.1	0			7.4	Wall					1
		240208	9149424	18/07	10:30	1.1	0			6.9						1
		240213	9149310	18/07	11:00	1.2	-0.1			7.4	Tree					1
		240229	9149296	18/07	11:00	1.2	-0.1			6.1	Tree					1
		240261	9149344	18/07	11:00	1.2	-0.1			6.5	Wall					1
		240312	9149331	18/07	10:30	1.15	-0.05			5.9						1
		240312	9149331	18/07	10:15	1	0.1			6						1
		240603	9149515	20/07	9:00	0.7	0.4		0.5		Wall					2
		240779	9149560	20/07	08:45	0.75	0.35		0.3		Wall					2
		240889	9149671	20/07	08:20	0.8	0.3		0							2
		240947	9149085	20/07	09:25	0.7	0.4		0							2
		241036	9149019	20/07	13:30	1.3	0.2		0		Road					1
		241147	9148942	20/07	09:30	0.7	0.4		0							2
		241325	9147732	19/07	15:30	1.25	-0.15			4.5	Tree					2
		241404	9148280	19/07	17:20	1	0.1			4.1	Wall	50				2
		241405	9147561	19/07	16:30	1	0.1		5.1	6	Tree					1
		241442	9147698	19/07	15:55	1.2	-0.1		2.5	3.4	Tree					1
		241457	9147819	19/07	15:40	1.2	-0.1		3.1	3.8	Tree					1
		241459	9147653	19/07	16:30	1	0.1		3.4	5	Tree					1

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				Day	Time	from L.L.L. ₄	from m.s.l. ⁵										
Pangandaran	Bulaksetra	241494	9147893	19/07	15:50	1.2	-0.1			4.6	Tree					2	
		241494	9147758	19/07	16:00	1.2	-0.1		3.5	5.2	Tree					1	
		241497	9147784	19/07	16:00	1.2	-0.1		2	4.5	Wall					1	
		241506	9147665	19/07	16:00	1.2	-0.1		1	2.8	Wall					1	
		241594	9147903	19/07	15:30	1.25	-0.15		0.8	3.8	Wall					1	
		241673	9147811	19/07	15:30	1.25	-0.15		0.8	2.5	Wall					1	
		241700	9147730	19/07	16:30	1.1	0		0.7	3.2	Wall					1	
		241790	9148326	20/07	13:40	1.1	0		3	3						2	
		242457	9149819	19/07	15:40	1.25	-0.15		3.1	3.8	Tree					1	
		243644	9150372	20/07	16:15	1.2	-0.1		0							2	
Pangandaran	Keboncarik	Interview fishery pound employee. Sound like bom; earthquake slightly felt; 3 main waves; 1 st wave 1 m high on the road; 2 nd wave 7 m high before breaking; 3 rd wave from the river (against the river stream N283° to N30°); pictures of the tsunami entering shrimp fisheries (<i>tambak</i>) at 16:15; stagnant water at 16:35; three following small waves with backwash until 17:30; 15-20 min interval between the waves													+++	1	
Pangandaran	Karangsari	245688	9150887	30/08	16:10	0.7	-0.4		3.1	2.7	Tree	273				1	
		245864	9150880	30/08	15:05	0.9	-0.2	7.2		9.2	house			Breaking of the 2 nd wave		1	
		245864	9150886	30/08	15:10	0.9	-0.2	7.2		8.5	Tree			Breaking of the 2 nd wave		1	
		Interview. 3 waves; 1 st wave at 16:15; 2 nd wave 8 m high before breaking; backwash parallel to the shoreline N283° to N30°													+++	1	
		246651	9150805	30/08	12:20	1.5	0.4	8.6		5.1	8.4	Tree	10	N178	Breaking of the 2 nd wave		1
		246782	9151088	19/07						0		Field					1
		246721	9150820	19/07	06:50	0.8	-0.3			3.7		Wall					2
		246786	9151119	19/07	06:50	0.8	-0.3			0		Field					2
		246792	9151029	19/07	13:20	1.3	0.2			0.2	5.1	Wall					1
		246795	9150976	19/07	13:20	1.3	0.2			1.9	5.2	Tree					1
246809	9151033	19/07	14:10	1.3	0.2			0.7	4.8	Wall					1		
246842	9150825	19/07	13:30	1.3	0.2	6.6			6.4	Tree			Breaking of the 2 nd wave		1		
246910	9150859	19/07	14:00	1.3	0.2			3.1	6.8	Wall					1		
246969	9150800	19/07	13:30	1.3	0.2			0	7.4	Hillslope					1		
247021	9150777	19/07	13:50	1.3	0.2			0	7.9	Hillslope					1		

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				Day	Time	from L.L.L. ⁴	from m.s.l. ⁵ (Z0)										
Pangandaran	Krapyak	sound like bom; earthquake slightly felt; sea retreat; 3 vagues; many blocks carried by the tsunami															
		252066	9149128	20/07	10:15	0.7	-0.4			5.9							1
		252066	9149132	20/07	10:35	0.7	-0.4			7.1							1
		252140	9149308	20/07	10:40	0.7	-0.4			6.7							1
		252154	9149036	20/07	10:25	0.7	-0.4			8.1							1
		252172	9149090	20/07	11:00	0.7	-0.4			8.5	Tree						1
		252172	9149090	20/07	11:50	0.8	-0.3	6.6	4.9	9.7	Tree	18					1
		252383	9148907	20/07	10:45	0.7	-0.4			6.0	Tree	24					1
		252576	9149027	20/07	11:45	0.8	-0.3			6.9							1
	252616	9148792	20/07	10:20	0.7	-0.4			5.6	Tree	30					1	
Bagolo	Sindang mangu	253167	9148664	20/07	17:30	0.95	-0.15	7.1								2	
Kampung Laut	Kelaces	260499	9150004	31/08	07:30	0.65	-0.45			< 1						1	
Nusa Kambangan	Permisan B.	3 waves from the SW; sound like bom; earthquake slightly felt; sea retreat at 16:10; arrival time 16:15; a few minutes between the waves; 2 nd wave highest one															
		266496	9143248	31/08	12:40	1.35	0.25	7.4		8.2	Tree	38			++	1	
		266496	9143262	31/08	12:45	1.35	0.25	8		8.8	Tree	53				1	
		266429	9142287	31/08	12:50	1.3	0.20	6.8		11.8	Tree	46				1	
		266429	9142320	31/08	12:50	1.3	0.20		0	15.7	Hillslope	80				1	
		266373	9143289	31/08	13:20	1.25	0.15	5.1		8.2	Tree	35				1	
		266373	9143328	31/08	13:25	1.25	0.15		0	12.8	Hillslope	73				1	
Cilacap	Cilacap city	Interview PLTU Jetty Project manager – video record of the tsunami waves; earthquake slightly felt; sea retreat at 16:14 (220 m at the pier dyke near the estuary); 3 waves; 1 st wave at 16:18; 2 nd wave higher at 16:20; backwash at 16:23; dark color.															
		281623	9142624	21/07	10:00	0.7	-0.4		0						+++	1	
		288131	9149803	22/07	11:00	0.7	-0.4		0	2	Road					1	
		288225	9149548	22/07	11:05	0.7	-0.4			2.2	House	84				1	
		289181	9149800	21/07	11:15	0.7	-0.4			2.9	PLTU			Video		2	
		289181	9149629	21/07	11:20	0.7	-0.4			3.7	PLTU					2	

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				Day	Time	from L.L.L. ⁴	from m.s.l. ⁵ (Z0)									
Cilacap	Bunton	295288	9149881	01/09	10:10	1.0	-0.1		1.0	1.9	Riverbank	457		Along the river: Protected by sand dune further west		1
		297234	9150088	01/09	10:40	1.0	-0.1		0	2.4	Riverbank				1	
Cilacap	Sodong	299241	9149950	21/07	18:00				0							1
		299654	9149309	03/08	17:30	0.75	-0.35		5.0							2
Cilacap	Widara payung	3 waves: arrival time around 16:30; wave broken on the beach; slight backwash between the waves													+	1
		308108	9148743	04/08	09:10	0.8	-0.3		1.2							2
		308179	9148913	04/08	09:15	0.8	-0.3		0.8							2
		308337	9148730	04/08	08:55	0.8	-0.3		3.5							2
		308440	9148939	04/08	08:35	0.85	-0.25		3.5							2
		308444	9149048	04/08	08:30	0.85	-0.25		1.0							2
		308462	9148727	03/08	18:10	0.7	-0.4		0.1							2
		308560	9148671	22/07	14:50	0.7	-0.4			5.4						1
		308579	9148993	22/07	14:55	0.7	-0.4		0	1.7						1
		308582	9148745	22/07	15:00	0.7	-0.4			5.1						1
		308597	9148693	04/08	08:45	0.8	-0.3		4.0							2
		308653	9148687	22/07	15:10	0.7	-0.4		1.0							1
Cilacap		318656	9147469	22/07	15:30	0.8	-0.3		0							1
Cilacap	Jetis	320609	9146716	04/08	9:50	0.8	-0.3		1.5							2

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Kebumen	Ayah	Interview teacher: sound like bom (twice); 3 waves; arrival time around 16:09; 2 nd wave (highest) 16:12; wave broken on the dyke														++	1	
		322425	9145916	04/08	10:15	0.8	-0.3		3.5									2
		322610	9145966	04/08	10:10	0.8	-0.3		1.5									2
		322867	9145913	23/07	08:45	1.5	0.4	7.3		6.7	Tree							1
		322926	9145715	22/07	17:50	1.1	0		3.0	3.4	Tree							1
		322958	9145592	22/07	17:30	1.05	-0.05			1	Mosque							1
		327481	9141083	04/08	11:15	0.9	-0.2		0.8									2
	327741	9141227	04/08	11:30	0.9	-0.2		1.4									2	
	Karangbolong	330502	9142221	04/08	13:25	1.0	-0.1		0.0									2
		330922	9149140	23/07	8:40	1.55	0.45		3.4	5								1
		330926	9142156	04/08	12:55	0.8	-0.3		2.0									2
		330990	9142142	04/08	13:05	0.8	-0.3		4.6									2
		331019	9142142	23/07	9:50	1.2	0.1		0	5.1	slope							1
	Puring	331126	9142131	04/08	14:10	1.0	-0.1		1.4									2
		331205	9142261	04/08	14:00	1.0	-0.1		3.5									2
		331268	9142403	04/08	13:50	1.0	-0.1		2.0									2
		331544	9142036	23/07	10:30	1.05	-0.05		0	2.5	dune							1
		331558	9142166	23/07	10:30	1.05	-0.05		0	3.9	dune							1
	Ketawang	342472	9140381	04/08	16:00	1.0	-0.1		4.0									2
		343353	9140329	04/08	15:55	1.0	-0.1		0.2									2
343455		9140306	04/08	15:50	1.0	-0.1		2.2									2	
343545		9140283	04/08	15:45	1.0	-0.1		0.9									2	
343556		9140262	23/07	11:55	0.6	-0.5			6.7								1	
343618		9140280	23/07	12:05	0.6	-0.5			1.4	Parking							1	
352623		9138486	23/07	13:50	0.45	-0.65		0	3.8			45					1	
Purworejo		Keburuhan	378139	9132210	23/07	15:10	0.5	-0.6		0	6.7	dune	32					1
	378161		9132350	23/07	15:10	0.5	-0.6		0	1.4	rizièrè	137					1	
	380163		9131677	31/07	13:55	1.3	0.2		1.7								2	
	380188		9131860	31/07	14:00	1.3	0.2		2.7	3							2	

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Kulon Progo	Congot	Wave breaking at the sand ridge; about 4 m high before breaking; rapid unusual sea level rises from storms occur at a 3-5 years interval, but without breaking (local names: anglep, roso, or blabun).														++	1
		393525	9126683	26/07	13:40	0.7	-0.40		0	1.8	Road	26	117				1
		393525	9126683	26/07	13:40	0.7	-0.40	4.2		1.6	beach	26	5				1
	Glagah	Breaking of the wave on the beach ridge; maximum penetration inland: 100 m.														+	1
		398353	9124934	26/07	15:00	0.3	-0.8	5	2	4.2	Wall						1
Bantul	Bugel	406612	9120947	26/07	15:25	0.25	-0.85			2.8						1	
	Trisik	Limited overflow above the beach ridge at +2.35 m asl; not higher than the highest tides (local name: lampor)															
				26/07	16:30	0.25	-0.85		0	2.5	Beach ridge	58					
	Pandansimo	413739	9116926	31/07	12:20	1.6	0.50		1.5								2
	Samas	Sound like bom (1 or 2 times depending on the testimonies); 2 waves reached the beach ridge at around 16:30; low velocity; locally slightly overflow the beach ridge, but occurs frequently during the dry season;														++	1
418958		9115022	22/07	14:10	0.6	-0.5			3.7		75	N350				2	
Parangtritis / Parangkusumo	Sound like bom; 3 waves almost simultaneous, after 16:00; no sea withdrawal; since the tsunami event, sedimentation problems due to sand														+	1	
	425508	9113054	22/07	10:40	0.7	-0.4			4.2			N340				2	
	425728	9112977	22/07	10:40	0.7	-0.4			5.5	Riverbank						2	
	426147	9112867	22/07	13:10	0.5	-0.6			0.8	Riverbank						2	
	426151	9112904	25/07	16:20	0.35	-0.75		0	4.6	Sand dune	170	N11				1	
	426178	9112974	25/07	16:25	0.35	-0.75		0		Sand dune						1	
	426743	9112691	22/07	13:20	0.5	-0.6		5.5		Riverbank					+	2	
	426780	9112807	31/07	10:30	1.5	0.4		2.4								2	
Gunung Kidul	Baron	426897	9112968	22/07	13:50	0.6	-0.5		0.1		Field					2	
		Interviews fishermen. Sound like bom; 3 waves; 1 st wave 16:30 (clock); no breaking; sea retreat then 2 nd wave, highest one; small earthquake at 21:30 with new tsunami wave up to the boats on the beach														++	1
	Kukup	450304	9101469	19/08	17:30	1.0	-0.1		0	2.9	Stairs	70					1
		After 16:00; wave came from the West; 3 waves almost simultaneous; third the highest														++	1
	Krakal			19/08	17:20	1.0	-0.1			3.9	People						1
Wave from the West; after 16:00; 3 waves.														++	1		
		456281	9099650	19/08	17:00	1.0	-0.1		0	4.1	Stairs	54				1	

¹ X : latitude (UTM).

² Y : longitude (UTM).

³ At the time of measurement.

⁴ L.L.L.: Lowest Low Level at Cilacap harbour: L.L.L. is generally situated at Z_0 : the sum of the amplitude values of four principal tide components (M2: S2: K1: and O1) below m.s.l.

⁵ m.s.l.: Mean Sea Level (tide corrected = 1.1 m – L.L.L.).

⁶ Maximum vertical elevation of a point located on initially dry land that is inundated by the waves. Runup height from the m.s.l. (tide corrected).

⁷ Inundation depth, i.e. maximum horizontal penetration of waves in the direction normal to the beach during the flooding.

⁸ Reliability: +++ very good; ++ good; + doubtful.

⁹ 1: LGP's team (Laboratoire de Géographie Physique)– 2: UGM-PSB's team (Pusat Studi Bencana).