GIORNATA INFORMATIVA
PROGETTO EMODNET GEOLOGY

EVENTI TSUNAMIGENICI ED AFFECTED COAST
(WP6 - GEOLOGICAL EVENTS AND PROBABILITIES)

MATTEO CONTI

ROMA - 20 gennaio 2017

WP6 – Geological events and probabilities
(Coordinatore Geological Survey of Italy - ISPRA)

- Identificare e mappare tutti gli eventi geologici significativi e fornire informazioni sulla probabilità di accadimento, se disponibili.
  Gli eventi geologici includono:
  - Frane sottomarine
  - Terremoti
  - Vulcani
  - Tettonica
  - Tsunami
  - Emissioni fluide non vulcaniche

- Il Prodotto atteso è costituito da livelli GIS con ubicazione degli eventi e l'insieme delle informazioni (tabella degli attributi) strutturata sulla base della Table of Contents redatta dal coordinatore del work package.

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Feature	Status	Format	Definition	Description	Reference	Remarks
Tsu_pt	mandatory	Text (8)	points	unique identifier code (two letters country code, which corresponds to ISO3166- code e.g. "IT" plus progressive numbers that identify each spatial occurrence in the map e.g. "IT00001", "IT00002", "IT00003", etc.)		from INGV website: http://www.arcgis.com/apps/StorytellingTextLegend/index.html?appid=8329c2ad9b7f43c18562bdddc6c1ad26
Date		Date	dd/mm/yy			
Type	codified	Text (50)	1 = seismic tsunamis , 2 = landslide tsunamis; 3 = volcanic tsunamis; 4 = meteorological tsunamis, 5 = asteroid generated tsunamis			
Cause	codified	Text (30)	submarine earthquake; earthquake on land; earthquake landslide; earthquake marine slide; submarine eruption; volcanic landslide; volcanic marine slide; gravitational landslide; gravitational marine slide; gravitational snow avalanche; atmospheric disturbance; offshore thunderstorms and squalls; asteroid/meteorite impact; unknown cause			
Run-up		Numeric Long (6)	meters	maximum tsunami run-up value observed or measured, in meters.		
Intensity	codified	Text (15)	1 = very light; 2 = light; 3 = rather strong; 4 = strong; 5 = very strong; 6 = disastrous;			
Intensity Papadopoulos-Imamura	codified	Text (30)	I = not felt; II = scarcely felt; III = weak; IV = largely observed; V = strong; VI = slightly damaging; VII = damaging; VIII = heavily damaging; IX = destructive; X = very destructive; XI = devastating; XII = completely devastating			
Affected coast		Text (200)	short description of tsunami affected land areas			
Earthquake_location		Numeric Double (19)	latitude, longitude	the geographical coordinates are reported in decimal degrees.		source parameters
Earthquake_magnitude_depth		Numeric Double (10)	magnitude value/meters			source parameters
Vcc_pt		Text (8)	link key to volcanic_centers_pt.shp (e.g. IT000234)			source parameters
Vcc_lin		Text (8)	link key to volcanic_centers_l.shp			source parameters
Vcc_pol		Text (8)	link key to volcanic_centers.shp			source parameters
Sls_pt		Text (8)	link key to submarine_landslide_pt.shp			source parameters
Sls_lin		Text (8)	link key to submarine_landslide_l.shp			source parameters
Sls_pol		Text (8)	link key to submarine_landslide.shp			source parameters
References	mandatory	Text (200)	in case of long text, fill with the name of a file.doc named "References + the identifier code" as in the following example: References_tsu_pt_IT00001.doc			Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014

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Tsu_lin	mandatory	Text (8)	polyline	unique identifier code (two letters country code, which corresponds to ISO3166- code e.g. "IT" plus progressive numbers that identify each spatial occurrence in the map e.g. "IT00001", "IT00002", "IT00003", etc.)		from INGV website: http://www.arcgis.com/apps/StorytellingTextLegend/index.html?appid=8329c2ad9b7f43c18562bdddc6c1ad26
Date		Date	dd/mm/yy			
Type	codified	Text (50)	1 = seismic tsunamis , 2 = landslide tsunamis; 3 = volcanic tsunamis; 4 = meteorological tsunamis, 5 = asteroid generated tsunamis			
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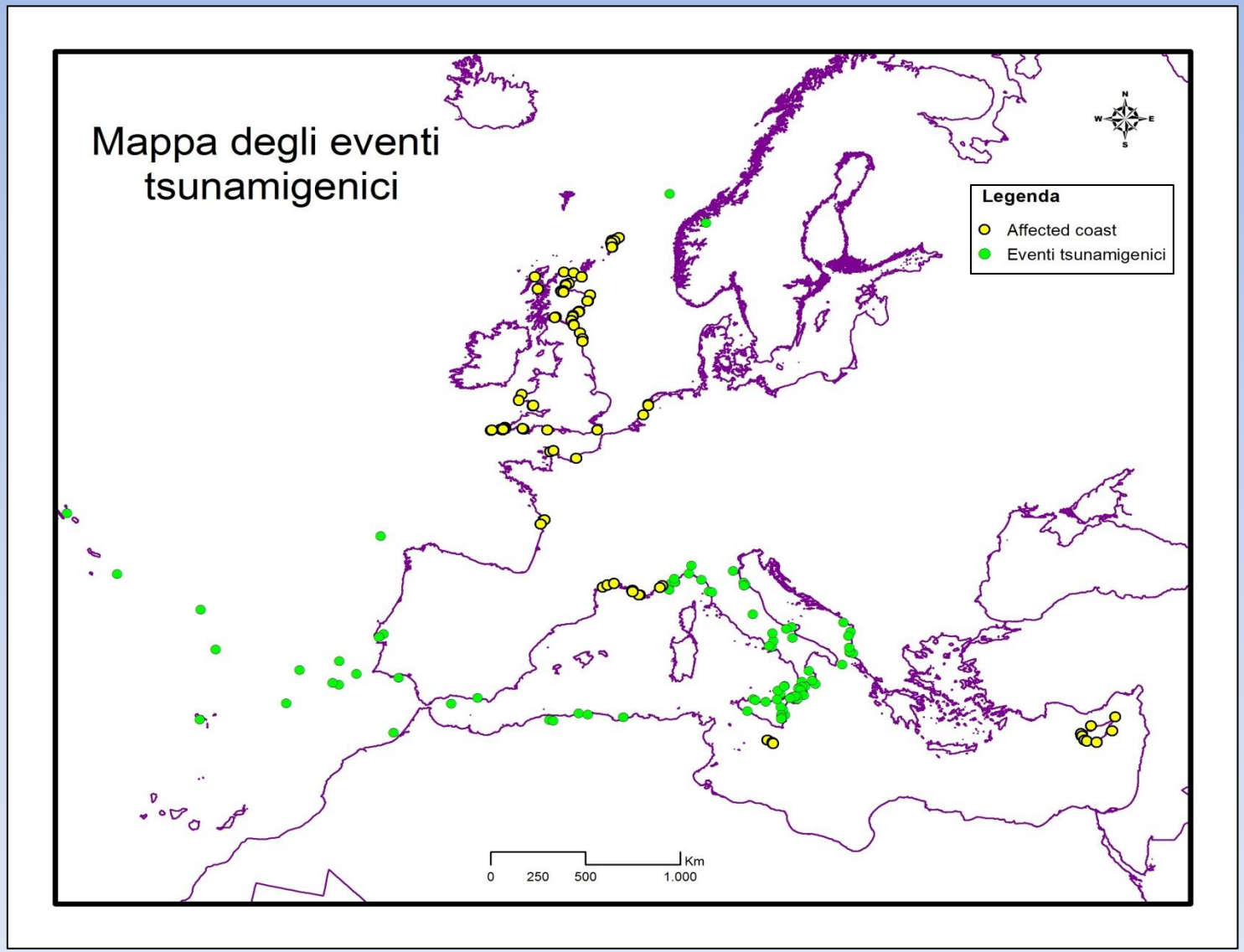
Source_location		Numeric Double (19)	latitude, longitude of the generating event (Cause) if known	the geographical coordinates are reported in decimal degrees.		
References	mandatory	Text (200)	in case of long text, fill with the name of a file.doc named "References + the identifier code" as in the following example: References_tsu_lin_IT00001.doc			Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Comment		Text (200)	free comments			

Risultati


Mappa degli eventi tsunamigenici
Legenda
Affected coast
Eventi tsunamigenici
N
W
E
S
0
250
500
1.000
Km

Raccolta dati

Istituto Nazionale di Geofisica e Vulcanologia

Catalogo degli Tsunami Euro-Mediterranei.

E’ un catalogo unificato dei maremoti generati nel Mediterraneo e nei mari europei limitrofi. Contiene la descrizione di circa 290 eventi e rappresenta la sistematizzazione di singoli cataloghi regionali caratterizzati da un proprio formato e diversi livelli di accuratezza

Maramai A., Brizuela B., Graziani L. – The Euro-Mediterranean Tsunami Catalogue, Annals of Geophysics, 57, 4, 2014.

Raccolta dati

Istituto Nazionale di Geofisica e Vulcanologia

Euro-Mediterranean Tsunami Catalogue

1823 3 5 (16:37)

M2

Northern Sicily

Cause: ER

Rel.: 4

Int. : 4

Epicenter coordinates, origin time, earthquake intensity (MCS scale) and equivalent moment magnitude from CPTI2 (2004). Tsunami intensity from Tinti and Maramai (1996).
Very violent earthquake, with the epicenter near the coast. Severe damage in Palermo (most nearshore houses partially destroyed). Many localities heavily damaged. Felt in Messina, Catania and Siracusa. At Termini Imerese hot springs had more water and increased temperature.
At Cefalù a sudden big wave observed. A big vessel carried seaward and then landward where it crashed. Some other boats carried towards the beach and then abruptly brought back.
Anomalous sea movement seen along the whole coast from Cefalù to Palermo (Anonymous, 1823; Ferrara, 1823).
Further references: Mallet (1854); Baratta (1901); Carrozzo et al. (1973); Karnik (1969); Caputo and Faita (1984); Soloviev (1990); Soloviev et al. (2000); Tinti and Maramai (1996); Tinti et al. (2004); Boschi et al. (1995); Dolce, (1823).

References

Anonymous, (1823); Baratta, (1901); Boschi et al., (1995); Caputo and Faita, (1984); Carrozzo et al., (1973); CPTI2, (2004); Ferrara, (1823); Karnik, (1969); Mallet, (1854); Soloviev et al., (2000); Soloviev, (1990); Tinti and Maramai, (1996); Tinti et al., (2004); Dolce, (1823).

Elaborazione dati – strutturazione tabella attributi

FID	Shape *	Tsu_pt	Date	Type	Cause	Run_up	Intensity	Papado_I	Aff_coast	Earthq_loc	Magn_depth	References
0	Point	IT00001	20/02/17	1	submarine earthqua	0	2	III	A strong earthquake occurred in the Salento peninsula (Apulia) causing severe damage in Nardo. The towns of Lecce and	Lat 39,85 - Long 18,78	6,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
1	Point	IT00002	19/01/17	1	submarine earthqua	0	4	VI	Light aftershock of the Calabrian seismic period started in February 1783. Sea agitated between Torre del Faro and Scilla.	Lat 38,17 - Long 15,63	4,1	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
2	Point	IT00003	02/06/17	2	earthquake landslid	9	6	X	A earthquake induced a collapse of Monte Campalla in the sea. The front of the failing mass was about 450 m long and p	Lat 38,22 - Long 15,63	5,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
3	Point	IT00004	13/12/19	1	submarine earthqua	0	2	III	Strong earthquake with epicenter in the sea offshore Augusta. At Augusta observed an anomalous wave offshore. Large s	Lat 37,33 - Long 15,24	5,4	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
4	Point	IT00005	04/07/17	1	submarine earthqua	0	2	III	Strong earthquake in south-western Sicily next to Sciacca. Sea withdrawal at Sciacca	Lat 37,50 - Long 13,00	5,2 - 2Km	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
5	Point	IT00006	01/09/17	1	submarine earthqua	0	2	III	Violent earthquake near Palermo causing severe damage in the city. In Palermo and in some other places sea withdrawal	Lat 38,12 - Long 13,35	5,8	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
6	Point	IT00007	05/03/18	1	submarine earthqua	0	4	V	Violent earthquake near the coast. Severe damage in Palermo, felt in Messina, Catania, Siracusa. At Cefalù a big wave o	Lat 38,00 - Long 14,10	5,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
7	Point	IT00008	03/07/19	1	submarine earthqua	10	2	IV	Violent eruption at the Stromboli volcano with a strong earthquake. Shock felt along the Thyrrenian Calabrian coast. At Str	Lat 38,82 - Long 15,23	5,1	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
8	Point	IT00009	17/03/18	1	submarine earthqua	0	3	V	After the shock, tsunami effects were noted in several locations. Remarkable increase in wave motion in the harbours of Ce	Lat 44,07 - Long 12,55	5,7	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
9	Point	IT00010	02/07/17	1	submarine earthqua	0	2	IV	Weak shock near Genoa. In the Harbour of Genoa sea level lowered about 6 feet and then came back in 15 minutes.	Lat 44,40 - Long 8,92	3.2	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
10	Point	IT00011	30/07/18	1	submarine earthqua	0	2	III	No information on this earthquake can be found in the Italian seismic catalogues. At Sanremo a strong shock was followed	Lat 43,82 - Long 7,78		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
11	Point	IT00012	05/04/16	1	submarine earthqua	0	2	III	Strong earthquake in Livorno. Many buildings suffered severe damage. Sea level rising more than 3 yards. In the harbour s	Lat 43,55 - Long 10,32	5,2	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
12	Point	IT00013	16/08/19	1	submarine earthqua	0	2	III	The shock was particularly strong along the coast . At Tavollo, close to Pesaro, small tsunami waves (about 20 cm) observe	Lat 43,97 - Long 12,67	5,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
13	Point	IT00014	08/12/18	1	earthquake on land	0	2	III	Epicenter in Gargano. Felt over a very wide area, including almost all central Italy. Tsunami at the Fortore mouth, sea agit	Lat 41,83 - Long 15,70	5,6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
14	Point	IT00015	20/06/11		unknown cause	0	2	III	Sea withdrew three-four times about 200 steps in Naples, leaving fish on the sea floor.	Lat 40,84 - Long 14,25		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
15	Point	IT00016	25/04/18	1	earthquake on land	0	4	V	Earthquake causing destruction in many villages in Calabria (590 victims). In many villages on the coast the sea quickly wi	Lat 39,57 - Long 16,73	6,2	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
16	Point	IT00017	05/02/17	1	earthquake on land	0	3	III	A weak earthquake was felt in Calabria. On the Ionian side of Calabria, at Capo Rizzuto a sudden sea inundation was obse	Lat 38,90 - Long 17,10		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
17	Point	IT00018	28/12/19	1	submarine earthqua	13	6	X	This is one of the strongest earthquakes occurred in Italy. Messina and Reggio were destroyed.More than 60,000 people di	Lat 38,18 - Long 15,68	7,2	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
18	Point	IT00019	20/04/19	2	gravitational landsli	0	2	III	A landslide of approximately 200,000 cubic meter occurred on volcano La Fossa on the island of Vulcano. The landslide	Lat 38,40 - Long 14,97		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
19	Point	IT00020	17/08/19	1	earthquake on land	0	2	III	A strong shock, probably of volcanic origin,in the Salina island. In the beaches of Malfa and Capo in Salina island, an ano	Lat 38,57 - Long 14,83	5,3	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
20	Point	IT00021	20/02/18	1	earthquake on land	0	2	IV	Very strong earthquake near Catania, where it caused a lot of damage. At Catania the waves were so impetuous that they s	Lat 37,60 - Long 15,13	6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
21	Point	IT00022	03/07/18		unknown cause	0	2	V	No certain cause. We can hypothesize a submarine landslide in the gulf of La Spezia where the sea rose for about 1 m ab	Lat 44,12 - Long 9,79		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
22	Point	IT00023	17/05/18	3	volcanic landslide	0	2	III	A period of explosions at the Vesuvius from May to December 28, 1813.The sea withdrew about 15-20 paces at Torre del	Lat 44,82 - Long 14.43		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
23	Point	IT00024	09/01/17	1	submarine earthqua	0	3	IV	During the night, a strong submarine earthquake occurred and a ship moored in the harbour broke its mooring and run agr	Lat 38,71 - Long 16,10		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
24	Point	IT00025	24/03/17	2	gravitational landsli	0	3	IV	There is an uncertainty about the year of occurrence.A portion of Campalla mountain, eastward, fell into the sea.	Lat 38,25 - Long 15,72		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
25	Point	IT00026	26/05/18	1	submarine earthqua	0	2	IV	One of the strongest earthquake occurred in the area. At Sanremo the sea retreated for many metres; vessels at anchor suf	Lat 43,50 - Long 7,75	5,5	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
26	Point	IT00027	05/12/14	1	earthquake on land	0	2	V	Most important and best documented earthquake in Italy. Destructive effects at about 100 localities. Tsunami effects are m	Lat 41,11 - Long 14,52	7	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
27	Point	IT00028	26/07/18	1	earthquake on land	0	2	III	Disastrous earthquake about 60 km far from the coast. More than 5,000 victims. Earthquake felt at Capri, Sorrento, Ponza	Lat 41,50 - Long 14,47	6,6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
28	Point	IT00029	30/07/16	1	earthquake on land	0	5	VI	A disastrous earthquake with epicentre located near Lesina. Along the coast, near the Lesina lake, the sea withdrew 2-3 mi	Lat 41,73 - Long 15,35	6,7 - 5km	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
29	Point	IT00030	20/03/17	1	earthquake on land	0	2	IV	Strong earthquake with epicentre located inland about 30 km from the coast. Tsunami effects observed at Siponto and Bar	Lat 41,27 - Long 15,75	6,3	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
30	Point	IT00031	08/03/18	1	earthquake on land	0	3	IV	Epicenter located inland (15 km about the coast). At the Tacina river mouth the sea rose for about 1/2 mile. Inundation of	Lat 39,07 - Long 16,90	6,5	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
31	Point	IT00032	27/03/16	1	earthquake on land	0	2	III	Strong shock located15 km from the Thyrrenian coast. More than 10,000 victims, scarce information on the tsunami. The s	Lat 39,03 - Long 16,28	7	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
32	Point	IT00033	28/03/17	1	earthquake on land	0	2	III	Very strong shock causing severe damage in the villages located between the S.Eufemia Gulf and the Squillace Gulf, bot	Lat 38,78 - Long 16,47	6,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
33	Point	IT00034	01/03/17	1	earthquake on land	0	2	III	A coeval source refers that after the shock along the shore at Tropea a considerable sea flooding was observed.	Lat 38,77 - Long 16,30	5,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
34	Point	IT00035	08/09/19	1	earthquake on land	6	4	V	Very strong event occurred in southern Italy. Sea rose and lowered with a period of 7.5 minutes (from Calabria up to Ischia)	Lat 38,67 - Long 16,07	7,1	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
35	Point	IT00036	07/02/17	1	earthquake on land	0	2	III	Scarce information on the tsunami. At Stilo sea rising with no flooding.	Lat 38,58 - Long 16,20	6,6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
36	Point	IT00037	07/01/17	1	submarine earthqua	0	3	VI	Light aftershock of the Calabrian seismic perio; this event was very local. At Roccella Ionica the sea flooded most of fields,	Lat 38,32 - Long 16,40	4,1	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
37	Point	IT00038	23/10/19	1	earthquake on land	0	3	IV	Strong earthquake about 15 km from the coast, felt in the whole Calabria and in eastern Sicily. The sea flooded the beach	Lat 38,13 - Long 16,02	5,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
38	Point	IT00039	05/02/17	1	earthquake on land	0	4	V	This event opened the 1783 seismic period. Coast Messina-Torre del Faro (11 miles) and Cenidio-Scilla (7 miles) affected	Lat 38,30 - Long 15,97	6,9 - 13km	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
39	Point	IT00040	16/11/18	1	earthquake on land	0	3	IV	Three relevant shocks, third was the strongest. At Reggio Calabria shock strongly felt by many boats. At Palmi sea very agit	Lat 38,28 - Long 15,87	6,1	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
40	Point	IT00041	16/06/17	1	submarine earthqua	0	2	III	Earthquake located in the sea at Portici. In the harbour the sea floor remained dry for two minutes.	Lat 40,85 - Long 14,27	4,3	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
41	Point	IT00042	02/02/17	1	earthquake on land	0	2	III	Strong earthquake in central Italy (100 km from the coast). About 10,000 victims. Small withdrawal of the sea at the mout	Lat 42,47 - Long 13,20	6,7	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
42	Point	IT00043	14/04/16	1	earthquake on land	0	2	III	There is a detailed description of a light tsunami: at Rimini, eyewitnesses observed a sea withdrawal followed by an inund	Lat 43,93 - Long 12,58	5,6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
43	Point	IT00044	14/08/18	1	earthquake on land	0	2	IV	The shock occurred with epicenter located in land, (15 km SE of Livorno). Two days before the shock, unusual sea swelling	Lat 43,53 - Long 10,50	5,7	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
44	Point	IT00045	19/03/16	1	earthquake on land	0	2	III	Strong earthquake affecting the north-eastern Italian area. The water in the Po river was very agitated and in the Comacch	Lat 44,65 - Long 11,85	5,5	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
45	Point	IT00046	09/10/18	1	earthquake on land	0	3	IV	Epicenter located about 50 km from the Ligurian coasts. Some vessels damaged at Genoa, where the shock induced a stro	Lat 44,82 - Long 9,05	5,7	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
46	Point	IT00047	23/02/17	1	earthquake on land	15	3	IV	This event usually called " Vallo di Diano earthquake" caused damage about 100 km along the coast (Mentone-Albissola).	Lat 43,92 - Long 8,07	6,7	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
47	Point	IT00048	23/02/18	1	earthquake on land	0	2	IV	Strong earthquake in western Liguria and Piedmont. Strongly felt at Sanremo, Savona, Nice. At Antibes the sea hit violent	Lat 43,92 - Long 8,03	5,6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
48	Point	IT00049	18/04/19	1	earthquake on land	0	2	III	Weak earthquake in the Ligurian coast. At Alassio and along the coast, a small tsunami with waves of about 3 m. The tsun	Lat 44,08 - Long 8,00	4,6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
49	Point	IT00050	01/01/16	1	submarine earthqua	0	3	VII	Strong earthquake in Messina. Felt in Reggio Calabria. In the harbour of Messina many ships wrecked.	Lat 38,18 - Long 15,55	5	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
50	Point	IT00051	28/06/13	3	volcanic landslide	0	3	IV	Eruption of Etna volcano with an earthquake. In Mascali abnormal water agitation; some boats in the beach carried into th	Lat 37,73 - Long 15,00		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
51	Point	IT00052	04/02/11	1	earthquake on land	0	4	VIII	Earthquake felt in Sicily and in Calabria. At Catania sea withdrawal by 5 m. In Messina, the sea receded and then came b	Lat 37,72 - Long 15,03	6,6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
52	Point	IT00053	09/01/16	1	submarine earthqua	0	2	III	Strong shockin the sea, near the coast, between Catania and Augusta. In the harbour of Augusta, anomalous movement of	Lat 37,20 - Long 15,05	6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
53	Point	IT00054	11/01/16	1	submarine earthqua	0	5	VII	Disastrous earthquake: 70000 victims, at Catania about 70% people dead. At Catania remarkable sea level rise (about 15	Lat 37,13 - Long 15,02	7,4	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
54	Point	IT00055	15/01/19	1	earthquake on land	0	2	IV	Strong shock in land about 20 Km far from the coast of Palermo. Many buildings were ruined. Some sudden sea waves obs	Lat 38,07 - Long 13,47	5,1	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
55	Point	IT00056	25/08/16	1	earthquake on land	0	2	IV	Strong earthquake involving the whole eastern coast of Sicily. Some damage in Messina. At Naso the sea flooded the bea	Lat 38,12 - Long 14,78	5,6 - 2km	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
56	Point	IT00057	30/12/20	3	volcanic landslide	11	5	VIII	Two different landslides of the Sciara del Fuoco (Stromboli) moved total volume of the material about 20 million cubic m	Lat 38,80 - Long 15,20		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014

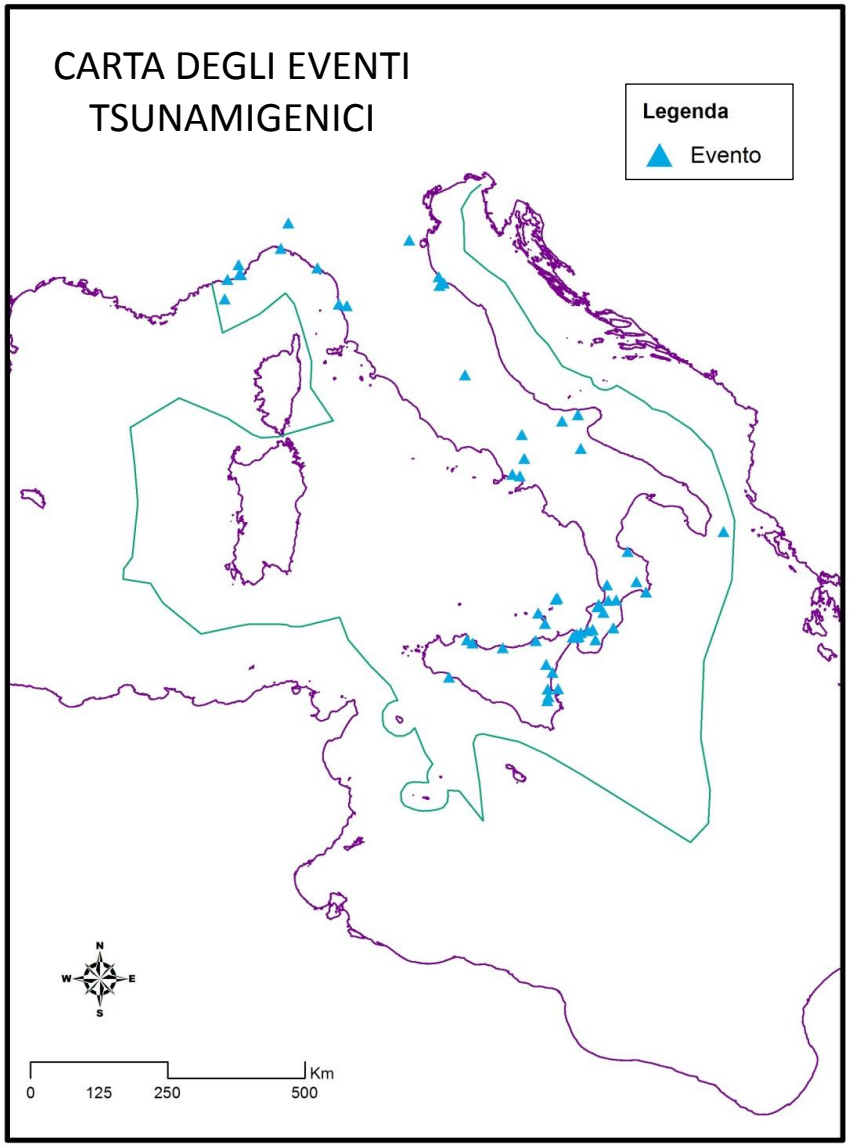
Elaborazione dati – strutturazione tabella attributi

FID	Shape *	Tsu_pt	Date	Type	Cause	Run_up	Intensity	Papado_Ima
0	Point	IT00001	20/02/1743	1	submarine earthquake	0	2	III
1	Point	IT00002	19/01/1784	1	submarine earthquake	0	4	VI
2	Point	IT00003	02/06/1783	2	earthquake landslide	9	6	X
3	Point	IT00004	13/12/1990	1	submarine earthquake	0	2	III
4	Point	IT00005	04/07/1727	1	submarine earthquake	0	2	III

Aff_coast
A strong earthquake occurred in the Salento peninsula (Apulia) causing severe damage in Nardo. The towns of Lecce and Brindisi were damaged and the shock was felt in Calabria, Sicily and Campania.
Light aftershock of the Calabrian seismic period started in February 1783. Sea agitated between Torre del Faro and Scilla. At Fossa and Catona many fields flooded, damage.
A earthquake induced a collapse of Monte Campalla in the sea. The front of the failing mass was about 450 m long and penetrated the sea at most by 100 m Total number of tsunami victims exceeding 15
Strong earthquake with epicenter in the sea offshore Augusta. At Augusta observed an anomalous wave offshore. Large submarine slides indentified with bathymetric changes as large as 50m
Strong earthquake in south-western Sicily next to Sciacca. Sea withdrawal at Sciacca
Violent earthquake near Palermo causing severe damage in the city. In Palermo and in some other places sea withdrawal (about 6 spans). More than 200 victims.
Violent earthquake near the coast. Severe damage in Palermo, felt in Messina, Catania, Siracusa. At Cefalù a big wave observed, anomalous sea movement seen along the coast from Cefalù to Palermo.
Violent eruption at the Stromboli volcano with a strong earthquake. Shock felt along the Thyrrenian Calabrian coast. At Stromboli the sea level rose by about 10 m (wave penetrated by about 20)
After the shock, tsunami effects were noted in several locations. Remarkable increase in wave motion in the harbours of Cesenatico, Cerv.ia and Pesaro
Weak shock near Genoa. In the Harbour of Genoa sea level lowered about 6 feet and then came back in 15 minutes.
No information on this
Strong earthquake in L
The shock was particul
Epicenter in Gargano.

Earthq_loc	Magn_depth	References
Lat 39,85 - Long 18,78	6,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 38,17 - Long 15,63	4,1	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 38,22 - Long 15,63	5,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 37,33 - Long 15,24	5,4	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 37,50 - Long 13,00	5,2 - 2Km	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 38,12 - Long 13,35	5,8	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 38,00 - Long 14,10	5,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 38,82 - Long 15,23	5,1	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 44,07 - Long 12,55	5,7	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 44,40 - Long 8,92	3.2	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 43,82 - Long 7,78		Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 43,55 - Long 10,32	5,2	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 43,97 - Long 12,67	5,9	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Lat 41,83 - Long 15,70	5,6	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014

Risultati



Location:	520.044,452 4.302.097,393 Meters
Field	Value
Aff_coast	Violent eruption at the Stromboli volcano with a strong earthquake. Shock felt along the Thyrrenian Calabrian coast. At St...
Cause	submarine earthquake
Date	03/07/1916
Earthq_loc	Lat 38,82 - Long 15,23
FID	7
Intensity	2
Magn_depth	5,1
Papado_Ima	IV
References	Maramai, et. al, (2014), The Euro-Mediterranean Tsunami Catalogue, ANNALS OF GEOPHYSICS, 57, 4, 2014
Run_up	10
Shape	Point
Sls_lin	
Sls_pol	
Sls_pt	
Tsu_pt	IT00008
Type	1
Vcc_lin	
Vcc_pol	
Vcc_pt	

Attività future

- Approfondire le informazioni riguardanti i singoli eventi utilizzando tutte le fonti bibliografiche disponibili per definire in modo maggiormente dettagliato le principali manifestazioni e conseguenze dei singoli eventi.

- Definire con precisione attendibile i tratti di costa colpiti dagli effetti dei singoli eventi (affected coast).

GRAZIE PER L’ATTENZIONE