# JRC Dataset

# Coastal flood risk analysis for population and assets, Portugal (2017-04-21)

## Description:

Activation date: 2017-04-21
Event type: Flood

Activation reason:
EMSN034 is a pre-disaster situation analyses to provide thematic information supporting planning for contingencies on vulnerable coastal areas along with a European framework directive on the assessment and management of the flood risk (2007/60/EC). Area of interest is 14 kilometres of beaches in Costa da Caparica, 10 km south of Lisbon, and the belt of land of with width of 1,5 km, along the shore line. Main earth observation data, imagery and digital elevation models, were provided by the activator ANPC (airborne) and JRC (RPAS-borne).Risk and recovery products are oriented to minimize casualties and economic impact in case of Tsunami event. Two sets of coastal flooding and storm surges hazards are developed. First based on computing values of total sea level elevation (SLE) integrating the different components that contribute to total water level during a storm: barometric setup, wind setup, wave setup and astronomical tide, plus a component of sea level rise to account for future climate change. The second approach is constructed based on the creation of a Flood Hazard Index. The four variables that compose the index are breaking wave height, beach slope, nearshore slope and presence of engineering structures. Results for five different probability scenarios ranging from frequent (corresponding to a return period of 5 years) to improbable (corresponding to a return period of 100 years) are calculated.This work is complemented by coastal erosion hazard analyses assessed by constructing an Erosion Hazard Index (EHI), which is composed of three variables: recent rates of shoreline change, presence and characteristics of dunes, and presence of artificial protection structures.Potential suitable locations for first response activities and access roads and evacuation routes are proposed. Mitigation, preparedness and response measures are also described and include, among the others: relocation of sensitive buildings, safe shelters, sand dunes protection, coastal structures, information, warning and alert system, etc.

## How to cite:

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## Keywords:

CEMS, Copernicus, Copernicus EMS, Copernicus Emergency Management Service, Copernicus Emergency Management Service Risk and Recovery Mapping Activation, Copernicus Service, EMSN034, Emergency, Emergency Management, Flood, Mapping, Orthoimagery, PRT, Portugal, Risk and Recovery Mapping

## Related resources:

### Data access

Copernicus EMS Risk and Recovery Mapping Activation [EMSN034]: Coastal flood risk analysis for population and assets, Portugal (2017-04-21)

Maps produced in scope of this Copernicus EMS Risk and Recovery Mapping activation downloadable as georeferenced PDFs, TIFFs and JPEGs together with relevant geodatabase (GDB) and complete final report as well.

https://emergency.copernicus.eu/EMSN034

## Additional information:

Issue date: 2017-04-21

Landing page: https://emergency.copernicus.eu/EMSN034

Language: English

Data theme(s): Regions and cities; Science and technology

EuroVoc domain(s): 72 GEOGRAPHY

## Geographic information:

Lineage: No additional information

Geographic bounding box: 38.66708425° N, -9.15156537° E, 38.54428501° S, -9.28056371° W

Coordinate Reference System: ETRS89 / LAEA Europe