



GLIDE number: N/A Activation ID: EMSR-037
 Product N.: 02SanBenedettoValdiSambro_v1

San Benedetto Val di Sambro (BO) - ITALY Landslide - 11/04/2013 Grading Map - Detail **RESTRICTED USE**

Production date: 19/04/2013



Cartographic Information
 1:7000 Full color ISO A1, medium resolution (200 dpi)



Map Coordinate System: WGS 1984 UTM Zone 32N
 Graticule: WGS 84 geographical coordinates

Legend

| Crisis Information | General Information | Hydrology | Physiography |
|------------------------|--------------------------------|-------------------|---------------------------------|
| Landslide (18/04/2013) | Area of Interest | River | Contour Lines and Elevation (m) |
| Transportation Grading | WorldView-2 (18/04/2013 10:58) | Stream | Transportation |
| Severely damaged | Lower Accuracy (Shadow) | Lake | Canal/Inlet |
| Collapsed/destroyed | Populated Place | Point of Interest | Secondary Road |
| Severely damaged | Industrial | Cemetery | Local Road |
| Moderately damaged | Religious | | |
| | Residential | | |

| | Consequences within the Detail Area of Interest on 18/04/2013 |
|--|---|
| Potentially Affected Population | < 5 inhabitants |
| Landslide Affected Area | 60.1 ha |
| Destroyed Residential Assets | 4 |
| Highly Affected Residential Assets | 11 |
| Moderately Affected Residential Assets | 9 |
| Destroyed Local Road | 1 km |
| Damaged Local Road | 0.5 km |

Map Information
 Following the extraordinary heavy rains of the last weeks in the Emilia-Romagna region, several landslides occurred. The landslides are spread throughout the region. A synthetic description of the situation is the following:
 - 1400 landslide events till now; more are likely to occur;
 - 60 people evacuated;
 - 100-150 municipalities affected, spread over 11.000 km²
 The worst affected areas include the municipalities of Caprioglio, Signatico and Boschetto, close to Tizzano Val Parma (Parma) and San Benedetto Val di Sambro (Bologna).
 The users of the map are Civil Protection authorities involved in field operations. The purpose of the map product is the support of emergency response activities.

Data Sources
 Inset maps based on: Administrative boundaries (JRC 2013, GISCO 2010, © EuroGeographics), Hydrology (CCM2 2007 © JRC), Transportation (Natural Earth, 2012), Settlements (OpenStreetMap, 2013), WorldView-2 © DigitalGlobe (acquired on 18/04/2013 10:58 UTC, GSD 0.58 m, approx. 14% cloud coverage, 27.5° off-nadir angle).
 Background imagery outside satellite footprint © AGEA 2013 (acquired in 2010, GSD 0.5 m, 0% cloud coverage).
 Base vector layers based on Regione Emilia-Romagna datasets (settlements, http://dati.emilia-romagna.it/, approx. 1:5.000, extracted on 15/04/2013), Geoportale Nazionale (transportation and hydrology, http://wms.pcn.minambiente.it/IGN, approx. 1:15.000, extracted on 17/04/2013), OpenStreetMap and Geonames (approx. 1:10.000, extracted on 15/04/2013), refined by ITHACA.
 Population estimates based on Landscan 2010 © UT BATTELLE, LLC.
 Elevation data: EU-DEM (25 m posting).
 All Data sources are complete and with no gaps.

Dissemination/Publication
 RESTRICTED USE.
 Delivery formats are GeoTIFF, GeoPDF, GeoJPEG and vectors (shapetile and KML formats).

Framework
 The products elaborated in the framework of current mapping in rush mode activation are realized to the best of our ability, within a very short time frame during a crisis, optimising the available data and information. All geographic information has limitations due to scale, resolution, date and interpretation of the original data sources. The products are compliant with GIO-EMS RUSH Product Portfolio specifications.

Map Production
 The present map shows the landslide damage assessment in the area of San Benedetto Val di Sambro (Bologna), derived by means of visual interpretation of post-event WorldView-2 © DigitalGlobe (acquired on 18/04/2013, GSD 0.58 m, approx. 14% cloud coverage, 27.5° off-nadir angle). The basic topographic features are derived from public datasets, refined by means of visual interpretation of pre-event aerial orthomosaics © 2013 courtesy of AGEA (acquired in 2010, GSD 0.5 m, 0% cloud coverage).
 Post-event satellite imagery has been radiometrically enhanced and ortho-projected with RPC approach (using EU-DEM elevation data).
 The estimated geometric accuracy of this product is 5 m CE90 or better, from native positional accuracy of the background aerial orthomosaics.
 The estimated thematic accuracy of this product is 85% or better, as it is based on visual interpretation of recognizable items on very high resolution optical imagery (detecting changes in respect to the reference data). Shaded area, included in the map, are zones of lower interpretation accuracy due to the poorer image radiometry.
 Map produced on 19/04/2013 by ITHACA under contract 257219 with the European Commission. All products are © of the European Commission.
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