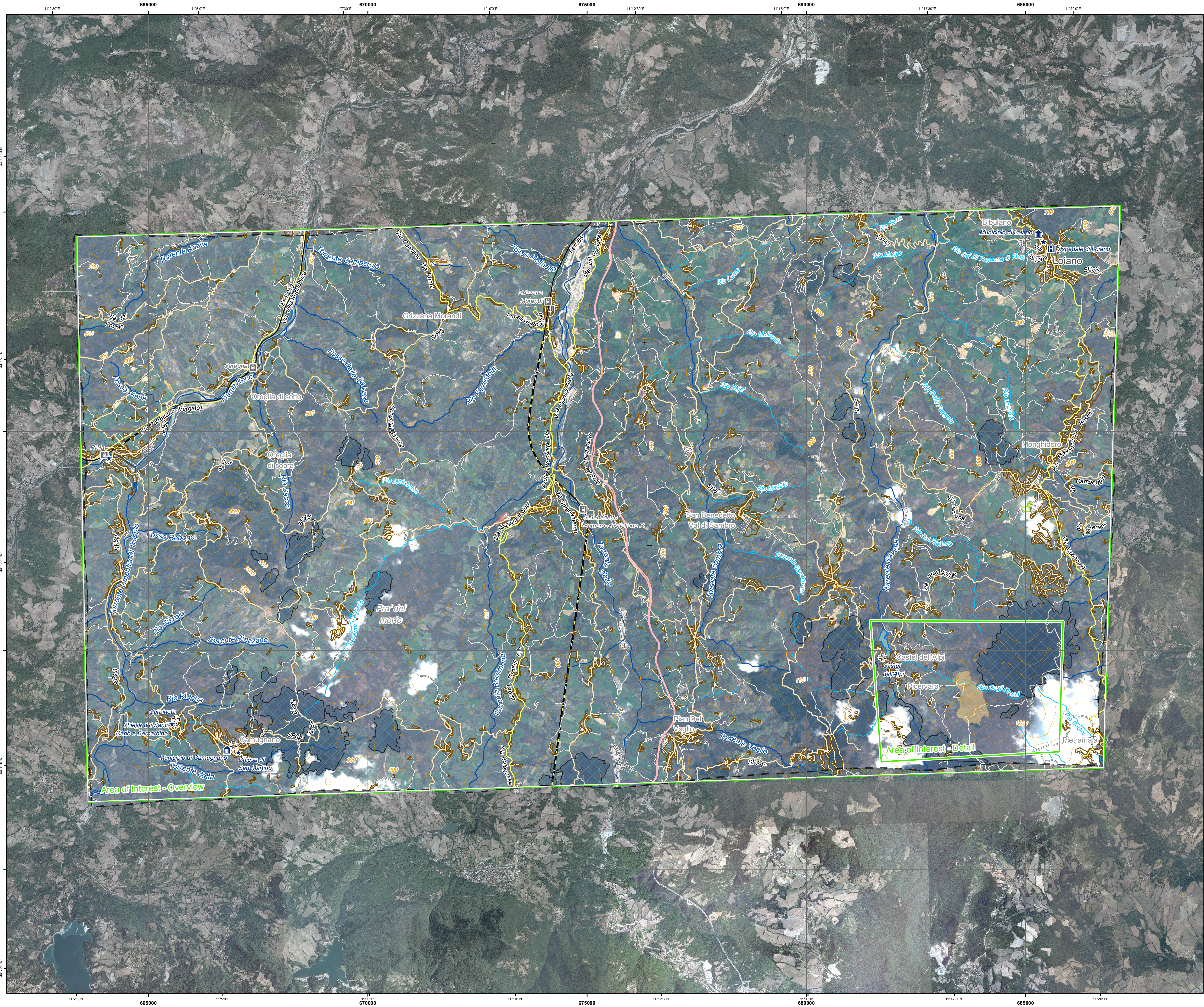




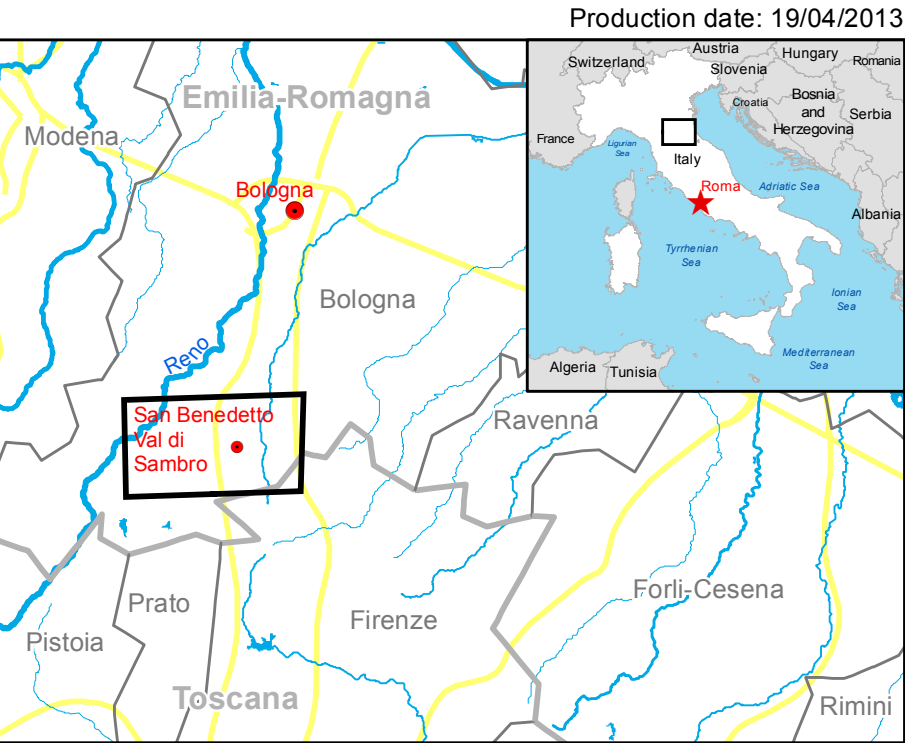
GLIDE number: N/A Activation ID: EMSR-037  
Product N.: 02SanBenedettoValdiSambro, v1

## San Benedetto Val di Sambro (BO) - ITALY

### Landslide - 11/04/2013

#### Delineation Map - Overview

## RESTRICTED USE



#### Cartographic Information

1:40000 Full color ISO A1, medium resolution (200 dpi)



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

#### Legend

| Crisis Information                | Hydrology                | Physiography                           |
|-----------------------------------|--------------------------|----------------------------------------|
| <b>General Information</b>        | <b>Hydrology</b>         | <b>Physiography</b>                    |
| <b>Area of Interest</b>           | <b>River</b>             | <b>Contour Lines and Elevation (m)</b> |
| WorldView-2 (18/04/2013 10:58)    | <b>Stream</b>            | <b>Transportation</b>                  |
| Lower Accuracy (Shadow)           | <b>Lake</b>              | <b>Station</b>                         |
| <b>Populated Place</b>            | <b>Point of Interest</b> | <b>Bridge</b>                          |
| <b>Settlements</b>                | <b>Institutional</b>     | <b>Railway</b>                         |
| <b>Commercial</b>                 | <b>Medical</b>           | <b>Motorway</b>                        |
| <b>Industrial</b>                 | <b>Religious</b>         | <b>Primary Road</b>                    |
| <b>Other or Unknown</b>           | <b>Cemetery</b>          | <b>Secondary Road</b>                  |
| <b>Recreational</b>               |                          | <b>Local Road</b>                      |
| <b>Religious</b>                  |                          | <b>Tunnel</b>                          |
| <b>Residential</b>                |                          |                                        |
| <b>Urbanized Multi-functional</b> |                          |                                        |

| Potentially Affected Population | Consequences within the Overview Area of Interest on 18/04/2013 |
|---------------------------------|-----------------------------------------------------------------|
| Landslide Affected Area         | < 5 inhabitants<br>76.4 ha                                      |

#### 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 km<sup>2</sup>.  
The worst affected areas include the municipalities of Capriglio, Signatice 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).  
Background imagery @ courtesy of AGEA (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/GN, 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 Landsat 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 (shapefile 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 delineation of the landslide affecting 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 2% 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 orthomages © 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 orthomage.  
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). Shadowed 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.  
Name of the release inspector (quality control): e-GEDS (GDO).  
E-mail: rush@ems-gmes.eu



Landslide

- Civil Protection
- Response
- Delineation Map - Overview
- Planning
- WorldView-2 (c) DigitalGlobe
- 11-04-2013

