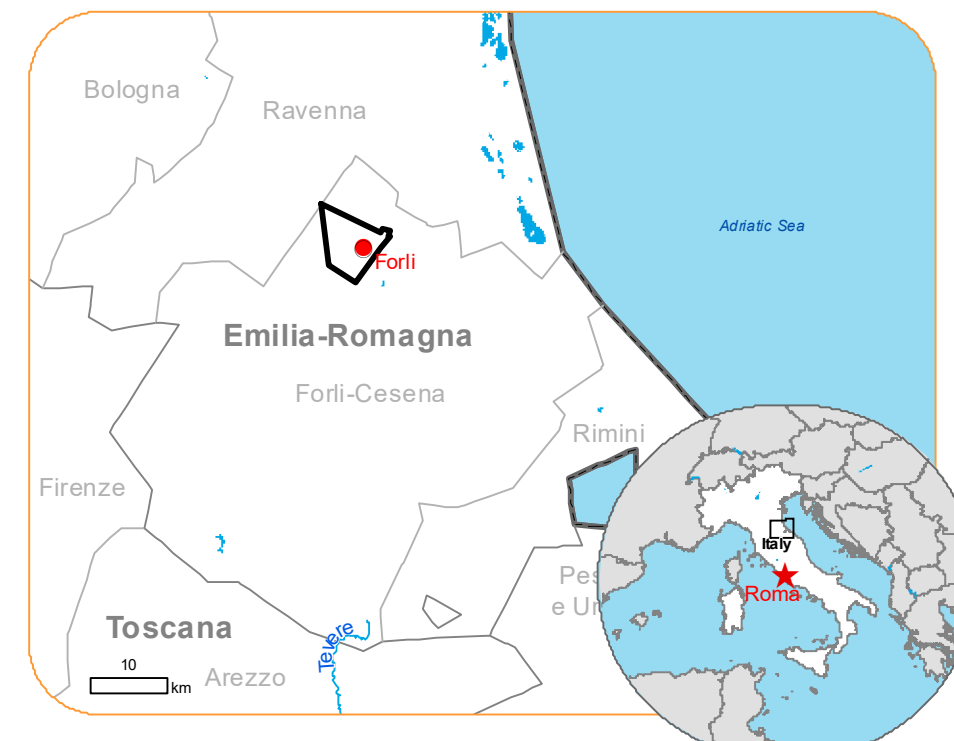




**EMSR664 - AOI01**  
Flood in Italy  
FORLÌ

**Situation as of 22/05/2023 10:27 UTC**  
Grading - Overview map 01






Flood trace 551.8 ha  
Flooded area 218.7 ha




Potentially affected population  
~ 11000


**Affected Built-up, Facilities and Transportations**




Built-Up  
3941 No.



Facilities  
44.1 ha





Road  
70.8 km








Railway  
3.4 km



**Crisis Information**

-  Flooded Area
-  Flood trace











**Built-Up Grading**

-  Residential Building, Possibly damaged
-  Non residential Building, Damaged
-  Non-residential Building, Possibly damaged
-  Unclassified Building, Damaged
-  Unclassified Building, Possibly damaged



**Facilities Grading**

-  Damaged
-  Possibly damaged


**Transportation Grading**

-  Road, Damaged
-  Road, Possibly damaged
-  Railway, Damaged
-  Railway, Possibly damaged
-  Highway, No visible damage
-  Main road, No visible damage
-  Local road, No visible damage
-  Track, No visible damage
-  Railway, No visible damage
-  Airfield and Helipod, No visible damage




**General Information**

-  Area of Interest
-  Detail map

**Administrative boundaries**

-  Province

**Hydrography**

-  River
-  Stream
-  Lake

All data displayed on the map(s), as well as the Land Use -Land Cover layer, is available in the Crisis Information Package and the Base Layer Package (for reference data). All products and data are also available for download on the activation webpage.

**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

**Data sources and analysis:**  
Pre-event image: Pléiades-1A/B © CNES (2023), distributed by Airbus DS (acquired on 02/02/2022 at 10:22 UTC, resolution 0.5 m).  
Pre-event image: Pléiades-1A/B © CNES (2023), distributed by Airbus DS (acquired on 10/07/2022 at 10:07 UTC, resolution 0.5 m).  
Post-event image: Pléiades-1A/B © CNES (2023), distributed by Airbus DS (acquired on 22/05/2023 at 10:27 UTC, resolution 0.5 m). This image is used as background image.  
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Base vector layers: OpenStreetMap © OpenStreetMap contributors (2023), Wikimapia.org, GeoNames 2015, Corine Land Cover (CLC) 2018, EuroBoundaryMap 2017 © EuroGeographics, refined by the producer.  
Inset maps: JRC 2013, GISCO 2010 © EuroGeographics, Natural Earth 2012, CCM River DB © EUJRC2007, GeoNames 2015.

Population data: GHS Population Grid © European Commission, 2022  
[https://ghsl.jrc.ec.europa.eu/ghs\\_pop2022.php](https://ghsl.jrc.ec.europa.eu/ghs_pop2022.php)  
Digital Elevation Model: SRTM (90 m) or (30 m) (NASA/USGS).

The thematic layer has been derived from post-event satellite image by means of visual interpretation. Please be aware that the thematic accuracy might be lower in urban areas due to inherent limitations of the SAR analysis technique).  
The scale of analysis is 1:25000. The estimated geometric accuracy (RMSE) is 10 m or better, from native positional accuracy of the background satellite image. The minimum mapping unit (MMU) is 100 sq. m.

This analysis has been supplemented by the social media.

Map produced by ITHACA released by e-GEOS on the 24/05/2023.

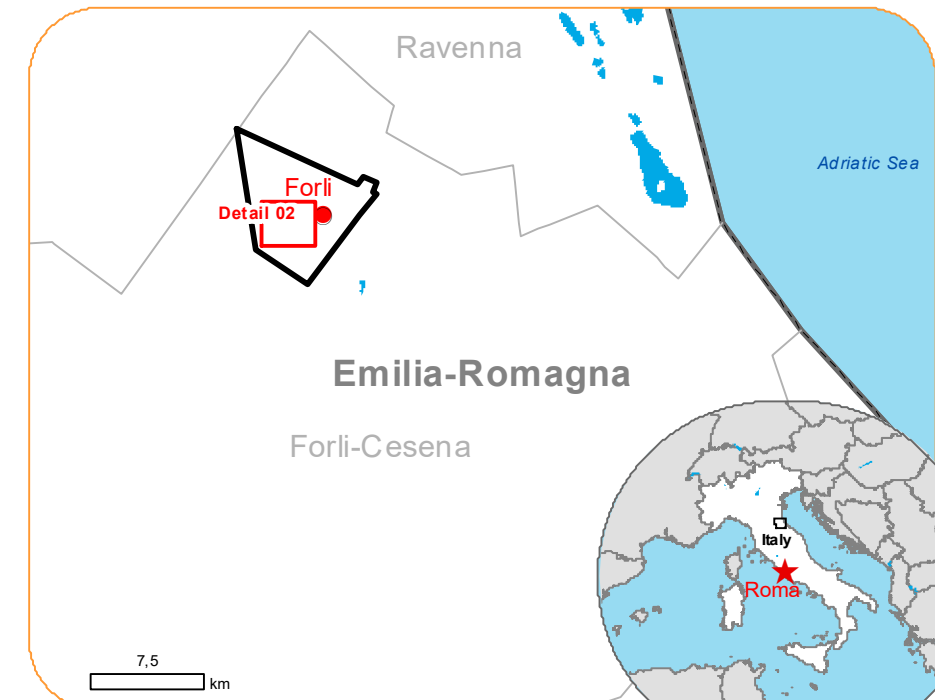
Details on this activation and service conditions available through the QR code or at the link:  
<https://emergency.copernicus.eu/EMS/R664>







Situation as of 22/05/2023 10:27 UTC  
Grading - Detail map 02



Flood trace 246.8 ha  
Flooded area 54.5 ha  
44.7% and 24.9% of total  
in AOI, respectively

Potentially affected  
population  
~ 4200  
38.2% of total affected

Affected Built-up, Facilities and Transportations

**Built-Up**  
1427 No.  
36.1% of total affected

**Facilities**  
4.6 ha  
10.4% of total affected

**Railway**  
2.8 km  
82.4% of total affected

**Road**  
26.8 km  
37.8% of total affected

#### Crisis Information

Flooded Area  
Flood trace

#### Built-Up Grading

Residential Building, Possibly damaged  
Non-residential Building, Possibly damaged  
Unclassified Building, Damaged  
Unclassified Building, Possibly damaged

#### Facilities Grading

Damaged  
Possibly damaged

#### Transportation Grading

Road, Damaged  
Road, Possibly damaged  
Main road, No visible damage  
Local road, No visible damage  
Track, No visible damage  
Railway, No visible damage  
Airfield and Heliport, No visible damage

#### Hydrography

River  
Stream  
Lake

All data displayed on the map(s), as well as the Land Use -Land Cover layer, is available in the Crisis Information Package and the Base Layer Package (for reference data). All products and data are also available for download on the activation webpage.

#### Event:

A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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Population data: GHS Population Grid © European Commission, 2022  
https://ghsl.jrc.ec.europa.eu/ghs\_pop2022.php  
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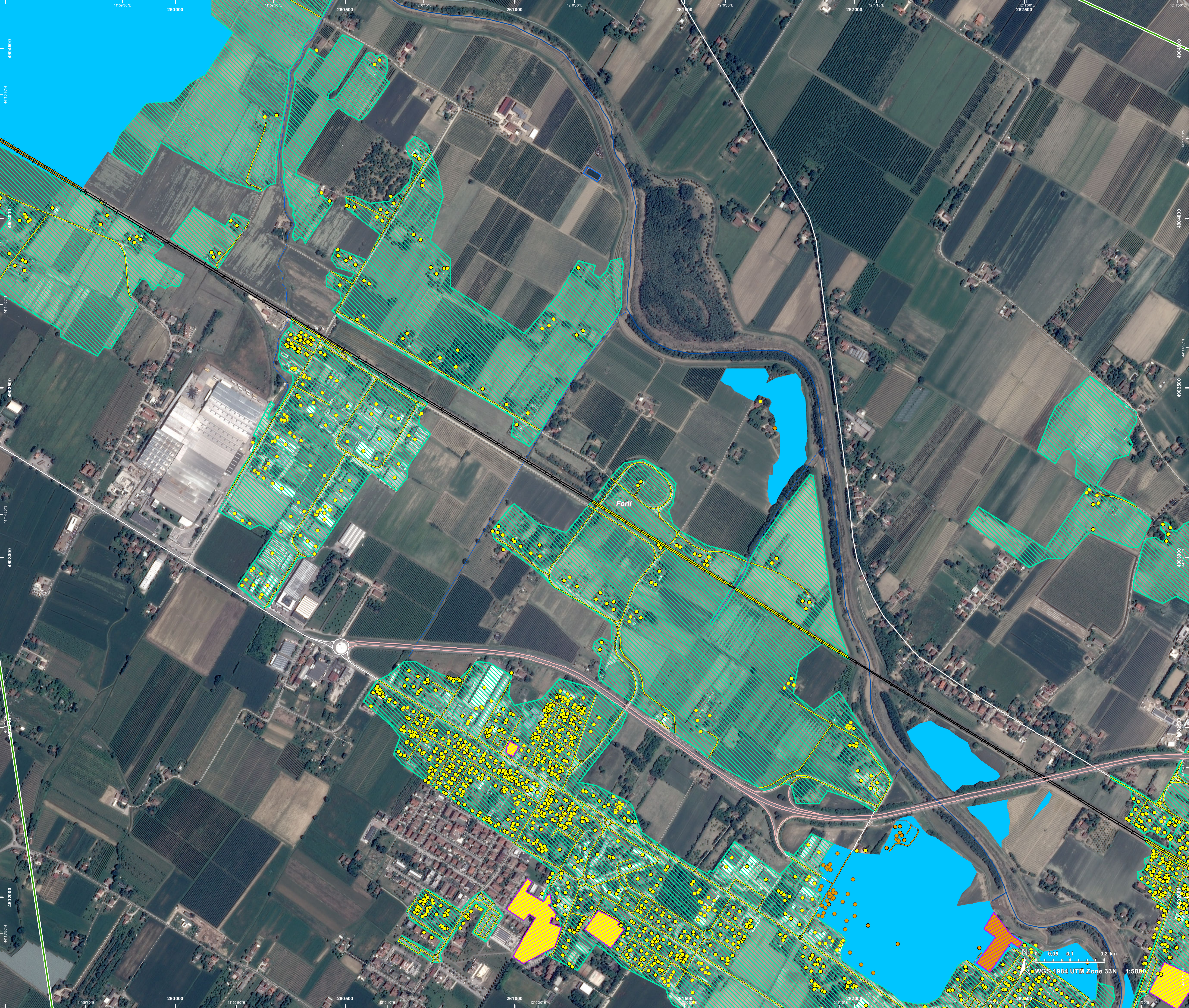
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Map produced by ITHACA released by e-GEOS on the 24/05/2023.

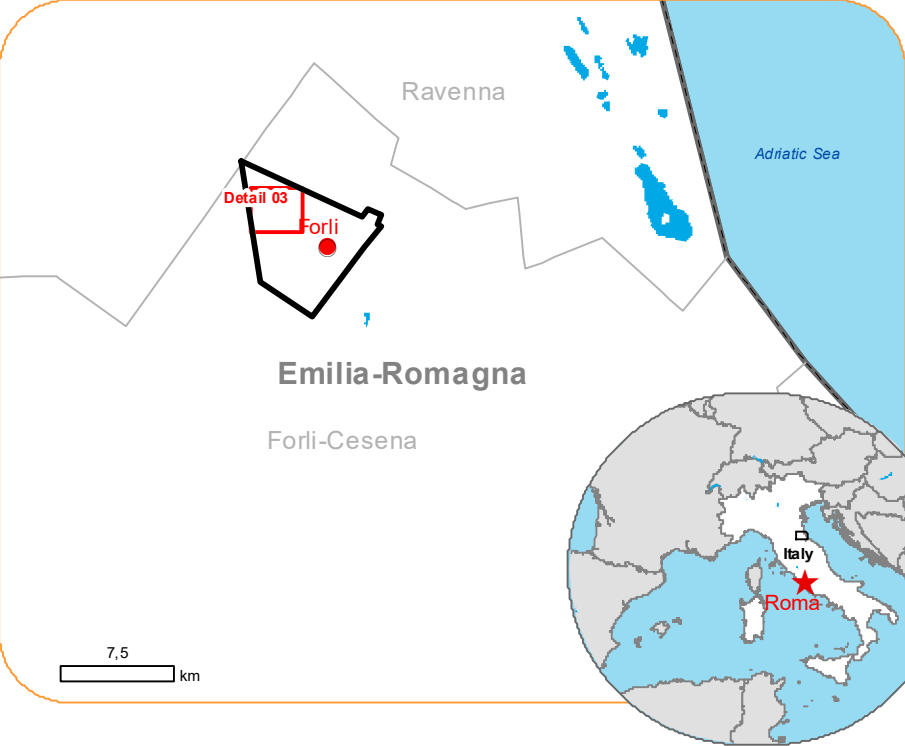
Details on this activation and service conditions available through the QR code or at the link:  
https://emergency.copernicus.eu/EMSR664







**Situation as of 22/05/2023 10:27 UTC**  
Grading - Detail map 03



**Flood trace 116.4 ha**  
**Flooded area 56.6 ha**  
21.1% and 25.9% of total  
in AOI, respectively

**Potentially affected population ~ 4000**  
36.4% of total affected

**Affected Built-Up, Facilities and Transportations**

**Built-Up**  
1525 No.  
38.7% of total affected

**Facilities**  
31.2 ha  
70.7% of total affected

**Road**  
21.1 km  
31.2% of total affected

- Crisis Information**
- Flooded Area
  - Flood trace
- Built-Up Grading**
- Non residential Building, Damaged
  - Non-residential Building, Possibly damaged
  - Unclassified Building, Damaged
  - Unclassified Building, Possibly damaged
- Facilities Grading**
- Damaged
  - Possibly damaged
- Transportation Grading**
- Road, Damaged
  - Road, Possibly damaged
  - Railway, Damaged
  - Railway, Possibly damaged
  - Highway, No visible damage
- General Information**
- Area of Interest
- Hydrography**
- River
  - Stream
  - Lake
- Main road, No visible damage  
Local road, No visible damage  
Track, No visible damage  
Railway, No visible damage

**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Voltre, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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Consequences within the AOI								
	Unit of measurement			Destroyed	Damaged	Possibly damaged*	Total affected**	Total in AOI
Flood trace		ha						551.8
Flooded area		ha						218.7
Estimated population	Number of inhabitants						~ 11,000	~ 95,000
Built-up	Residential Buildings	ha		0.0	0.0	0.0	0.0	1,682.2
	Office buildings	ha		0.0	0.0	0.0	0.0	1
	Institutional	ha		0.0	0.0	0.0	0.0	2
	Police station	ha		0.0	0.0	0.0	0.0	1
	Wholesale and retail trade buildings	ha		0.0	0.0	0.0	0.0	10
	Industrial buildings	ha		0.0	0.0	0.0	0.0	253.4
	Reservoirs, silos and warehouses	ha		0.0	0.0	0.0	0.0	1,876
	Public entertainment buildings	ha		0.0	0.0	0.0	0.0	2
	School, university and research buildings	ha		0.0	0.0	0.0	0.0	31.2
	Hospital or institutional care buildings	ha		0.0	0.0	0.0	0.0	37.2
	Non-residential farm buildings	ha		0.0	0.0	0.0	0.0	760
	Buildings used as places of worship and for religious activities	ha		0.0	0.0	0.0	0.0	168
	Historic or protected monuments	ha		0.0	0.0	0.0	0.0	1
	Other buildings not elsewhere classified	ha		0.0	0.0	0.0	0.0	4
	Military	ha		0.0	0.0	0.0	0.0	5.4
	Cemetery	ha		0.0	0.0	0.0	0.0	17.1
	Hotel buildings	ha		0.0	0.0	0.0	0.0	7
	Communication buildings, stations, terminals and associated buildings	ha		0.0	0.0	0.0	0.0	4
	Garage buildings	ha		0.0	0.0	0.0	0.0	1
	Unclassified	ha		0.0	0.0	0.0	0.0	25,024
	Residential Buildings	No.		0	0	48	48	161
	Office buildings	No.		0	0	0	0	1
	Institutional	No.		0	0	0	0	2
	Police station	No.		0	0	0	0	1
	Wholesale and retail trade buildings	No.		0	0	1	1	10
	Industrial buildings	No.		0	0	0	0	5
	Reservoirs, silos and warehouses	No.		0	36	272	308	1,911
	Public entertainment buildings	No.		0	0	0	0	2
	School, university and research buildings	No.		0	0	0	0	18
	Hospital or institutional care buildings	No.		0	0	0	0	22
	Non-residential farm buildings	No.		0	20	88	108	764
	Buildings used as places of worship and for religious activities	No.		0	0	20	20	170
	Historic or protected monuments	No.		0	0	0	0	1
	Other buildings not elsewhere classified	No.		0	0	1	1	4
	Hotel buildings	No.		0	0	0	0	7
	Communication buildings, stations, terminals and associated buildings	No.		0	0	0	0	4
	Garage buildings	No.		0	0	0	0	1
	Unclassified	No.		0	123	3,332	3,455	25,219
Transportation	Airfield runways	ha		0.0	0.0	0.0	0.0	23.0
	Helipad	ha		0.0	0.0	0.0	0.0	0.0
	Highways	km		0.0	0.0	0.9	0.9	36.5
	Primary Road	km		0.0	3.7	1.7	5.4	20.2
	Secondary Road	km		0.0	0.0	6.5	6.5	42.1
	Local Road	km		0.0	3.7	37.7	41.3	252.4
	Cart Track	km		0.0	1.7	11.7	13.3	121.9
	Long-distance railways	km		0.0	0.7	2.7	3.4	25.4
Facilities	Settling Basin	ha		0.0	0.0	5.4	5.4	5.4
	Constructions for mining or extraction	ha		0.0	6.5	0.0	6.5	6.5
	Power plant constructions	ha		0.0	0.0	0.0	0.0	1.3
	Sport and recreation constructions	ha		0.0	23.4	8.9	32.3	121.0
	Long-distance pipelines, communication and electricity lines	km		0.0	0.0	8.3	8.3	29.1
	Local pipelines and cables	km		0.0	0.0	0.0	0.0	1.1
			Very high damage	High damage	Moderate damage	Negligible to slight damage	Total affected**	Total in AOI
Land use	Heterogeneous agricultural areas	ha	NA	NA	NA	NA	265.7	1,815.5
	Other	ha	NA	NA	NA	NA	253.5	1,942.5
	Arable land	ha	NA	NA	NA	NA	251.3	1,282.0
* Presence of damage proxies and proximity with destroyed/damaged asset								
** Sum of all damage classes								

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Full disclaimer and other helpful information available in the online manual:  
<https://emergency.copernicus.eu/mapping/ems/online-manual-rapid-mapping-products>  
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PROGRAMME OF THE  
EUROPEAN UNION

