
# Extreme rainfall event and floods of 3rd October 2015 – French Riviera

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# An exceptional rainfall event …

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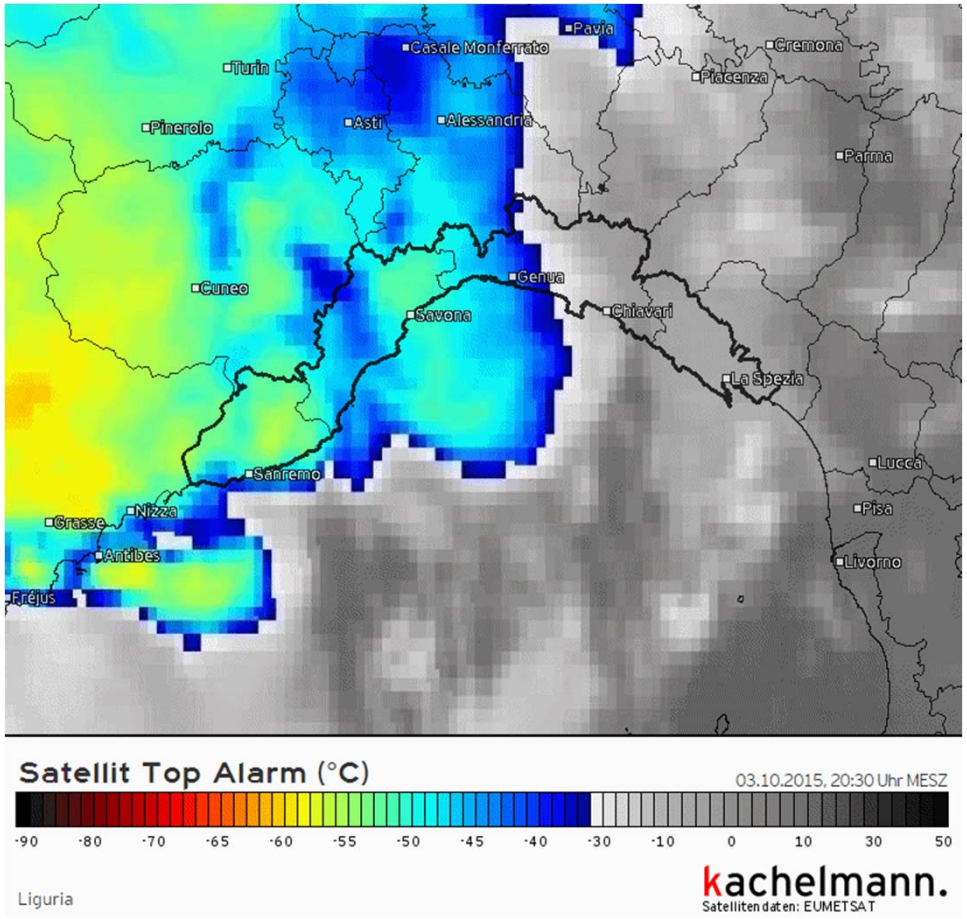


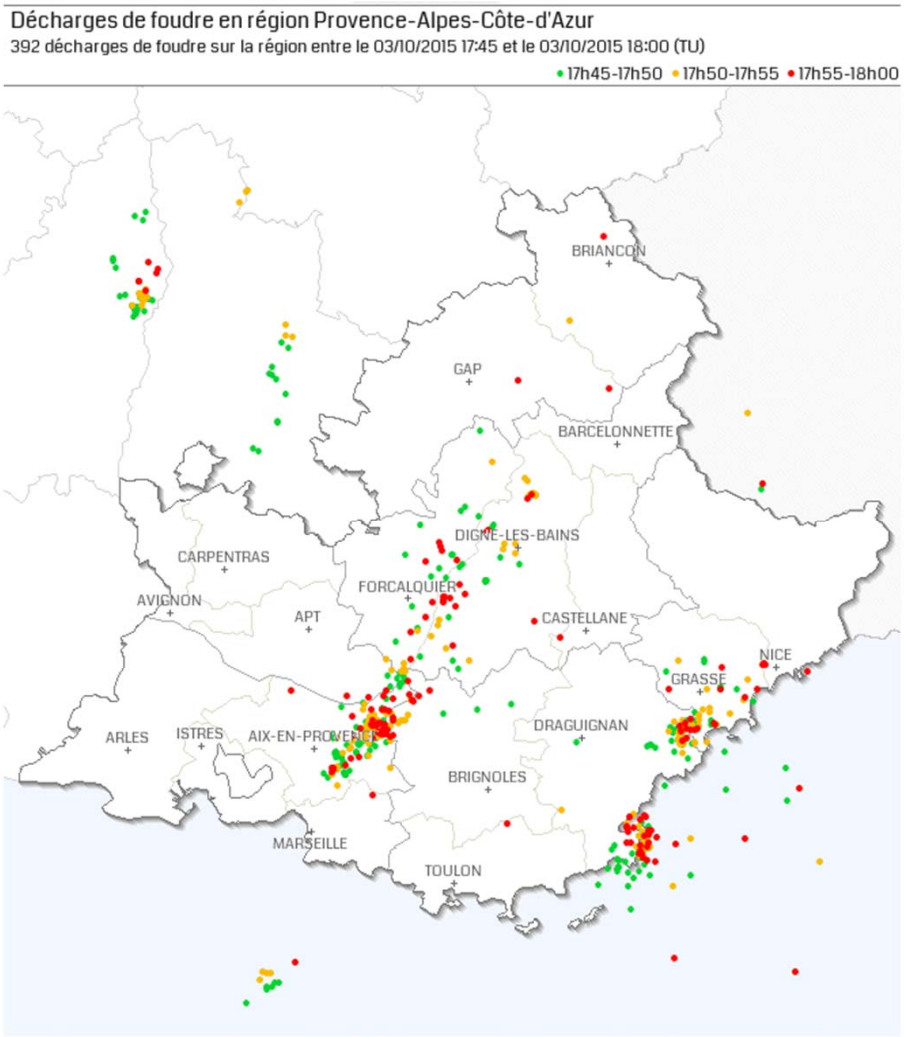


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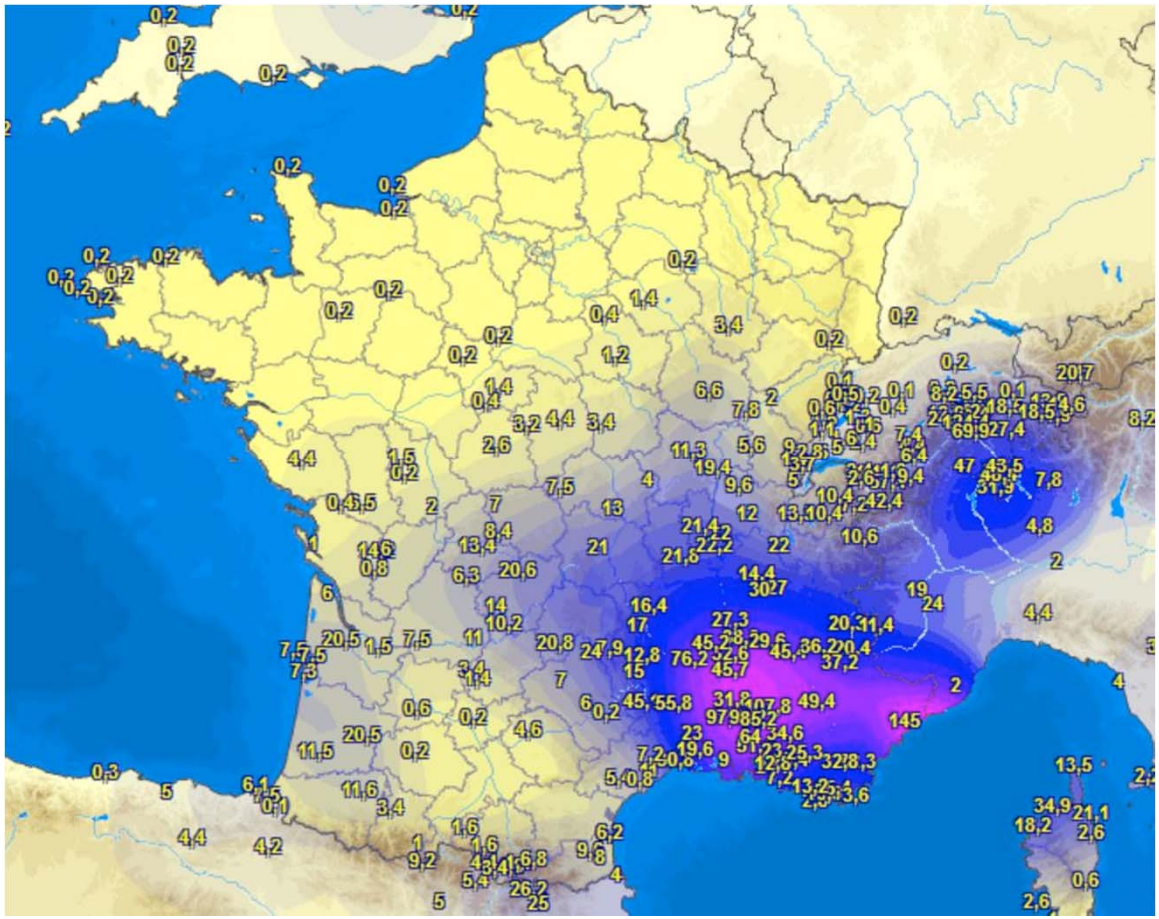

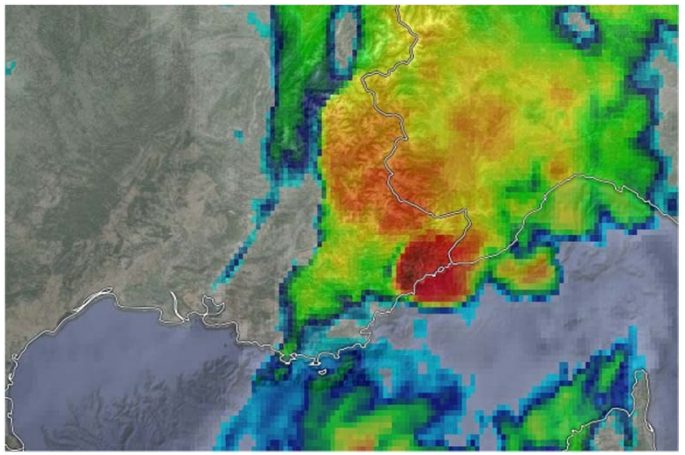

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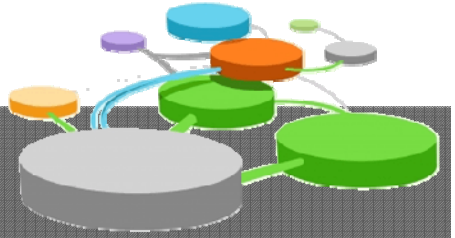
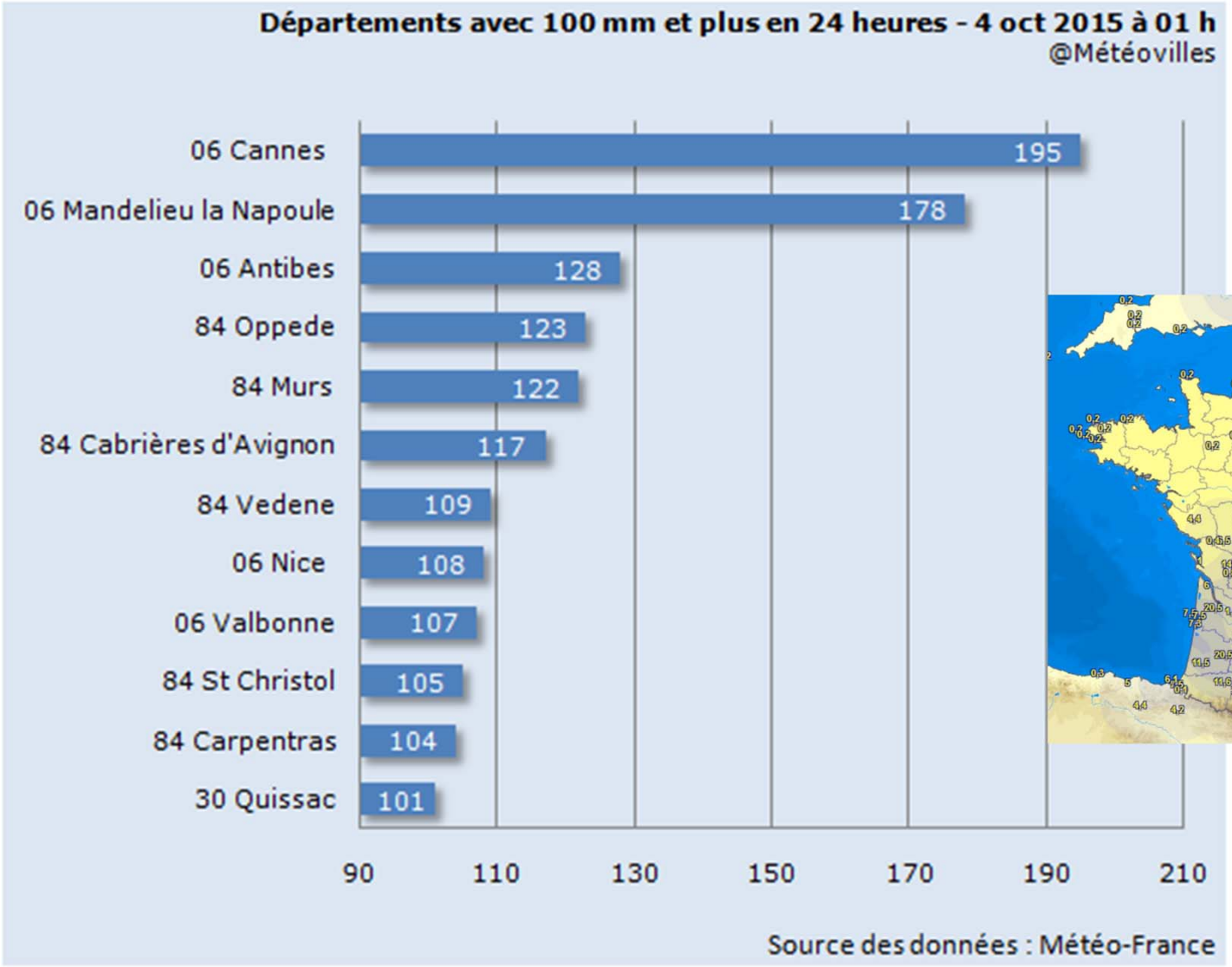
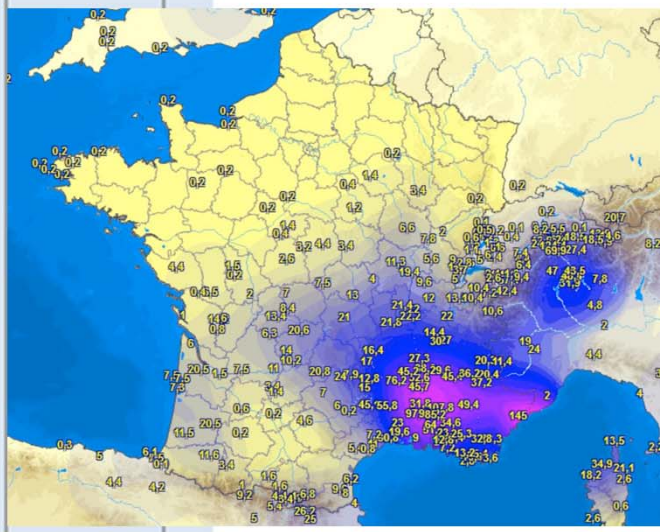
# Recorded values …





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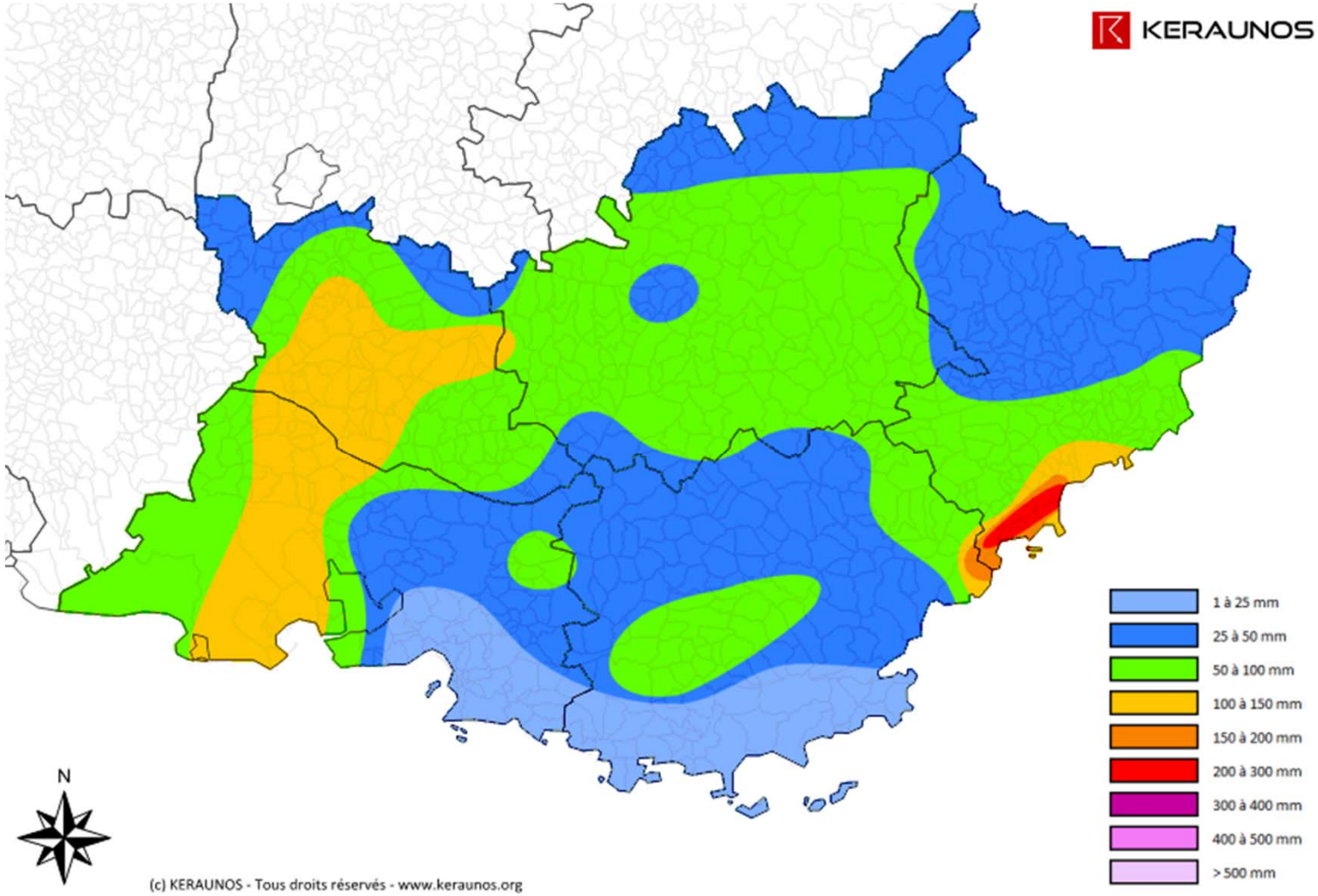


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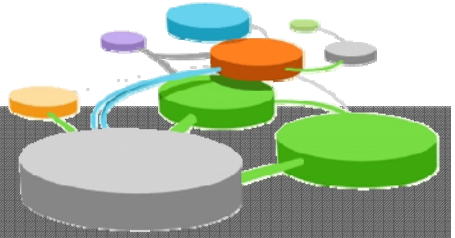

## ORAGE DILUVIEN SUR LA COTE D'AZUR - CUMULS DU 3 OCTOBRE 2015

| | | | |
|---|---|---|---|
| Cannes (06) | 196 mm | 175 mm en 2h | 106 mm en 1h |
| Mandelieu-la-Napoule (06) | 159 mm | 152 mm en 2h | 99 mm en 1h |
| Antibes (06) | 128 mm | 109 mm en 2h | 74 mm en 1h |
| Nice Côte-d'Azur (06) | 109 mm | 89 mm en 2h | 74 mm en 1h |
| Valbonne Sophia Antipolis (06) | 107 mm | 97 mm en 2h | 50 mm en 1h |
| Châteauneuf-Grasse (06) | 90 mm | 86 mm en 2h | 74 mm en 1h |

# Intense runoff …

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# Intense runoff …


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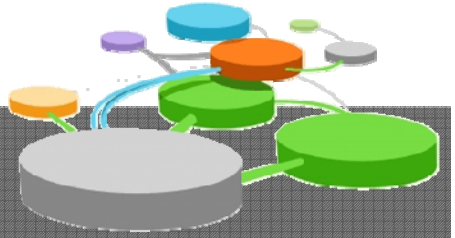
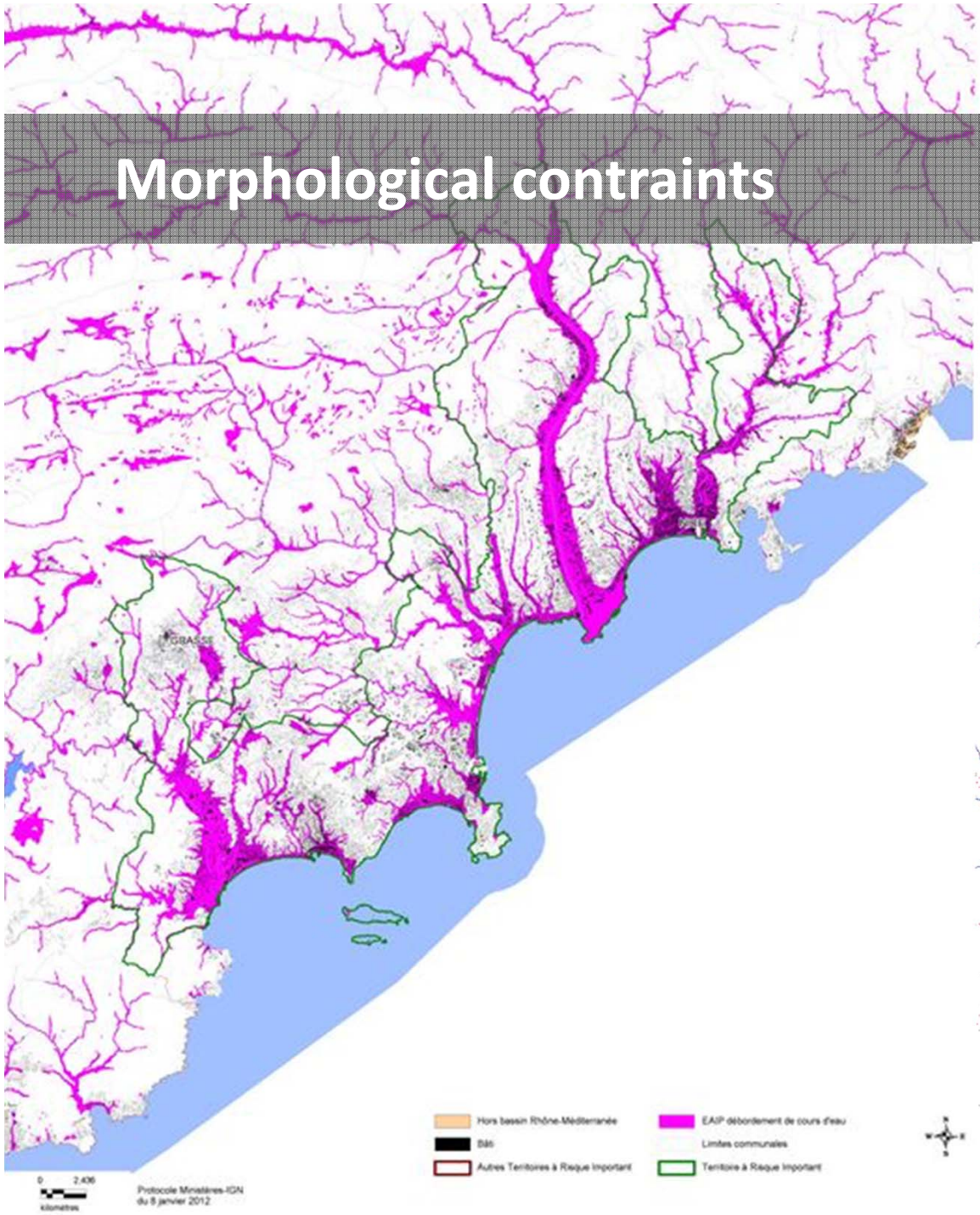
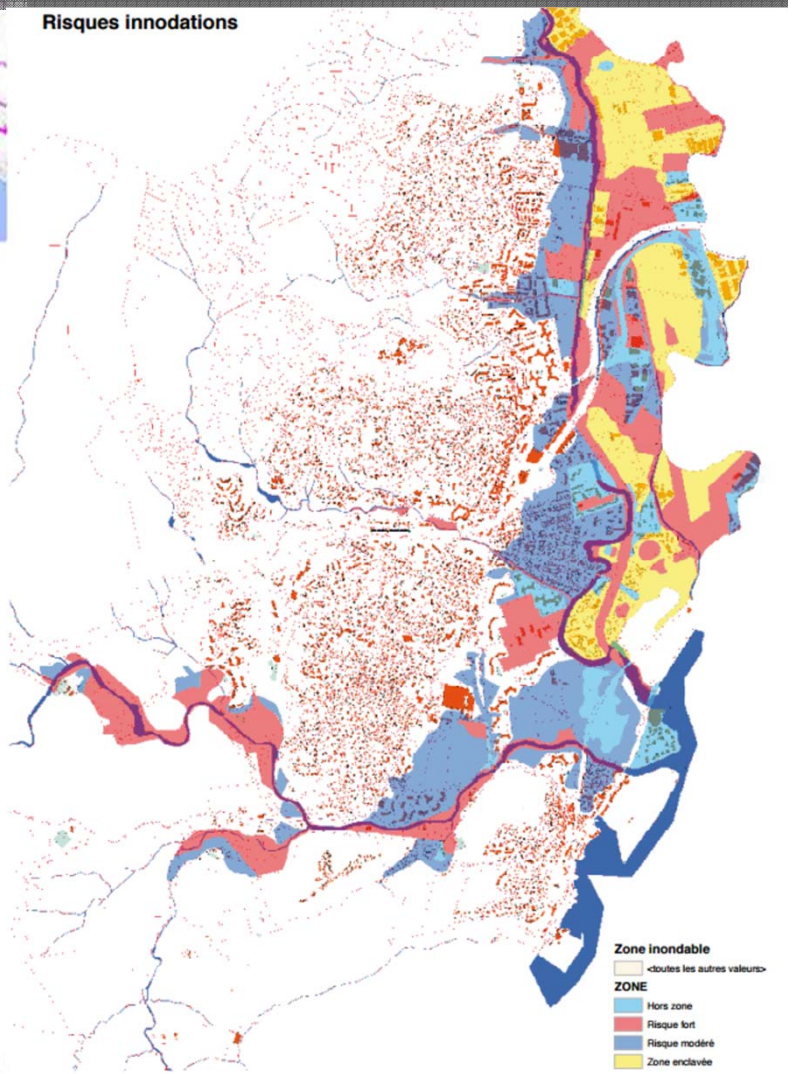
# Morphological contraints



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# Intense runoff …

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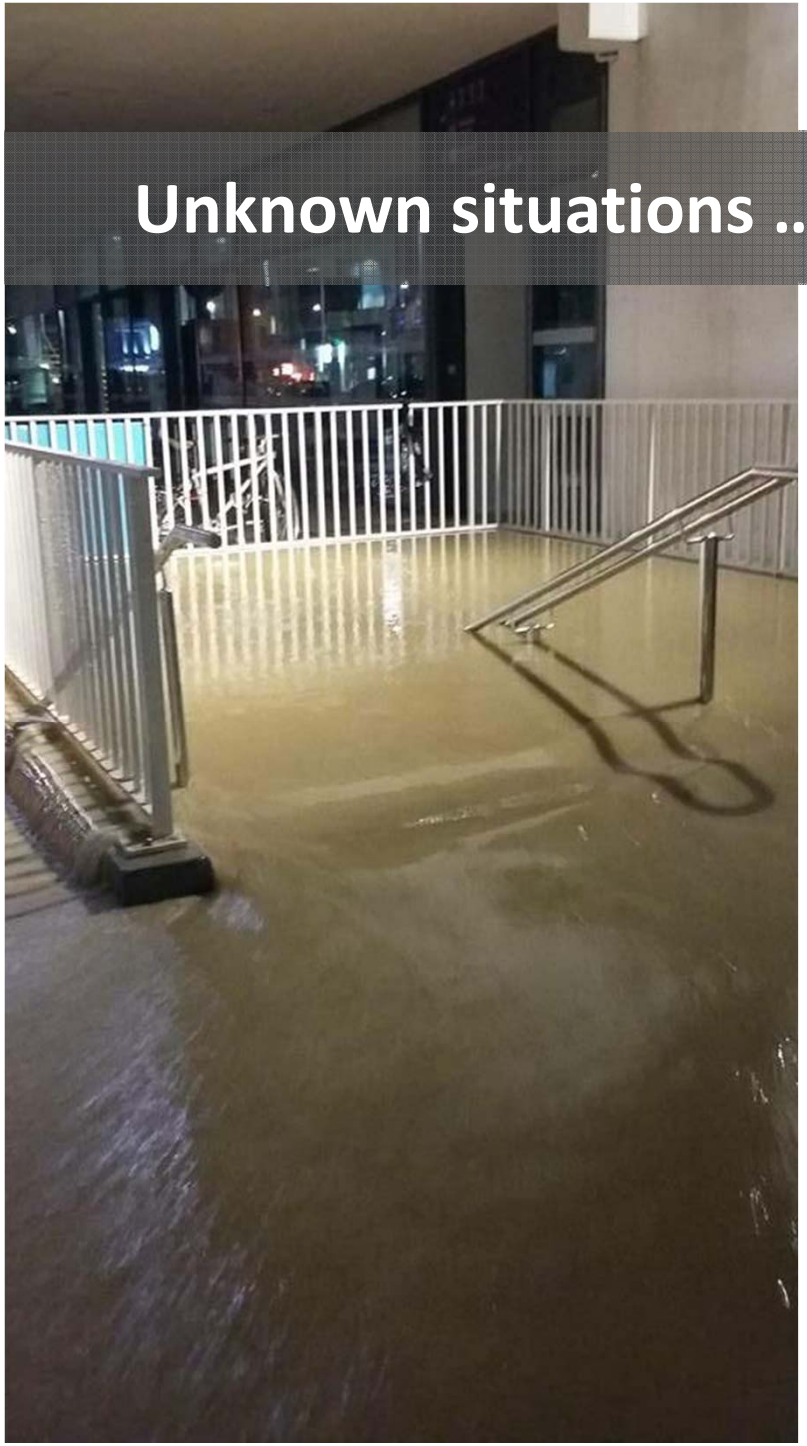
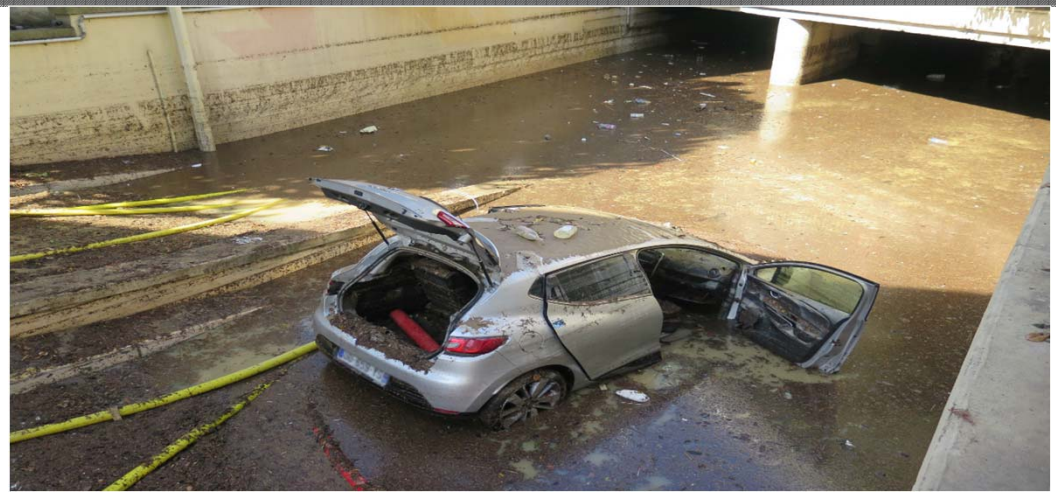
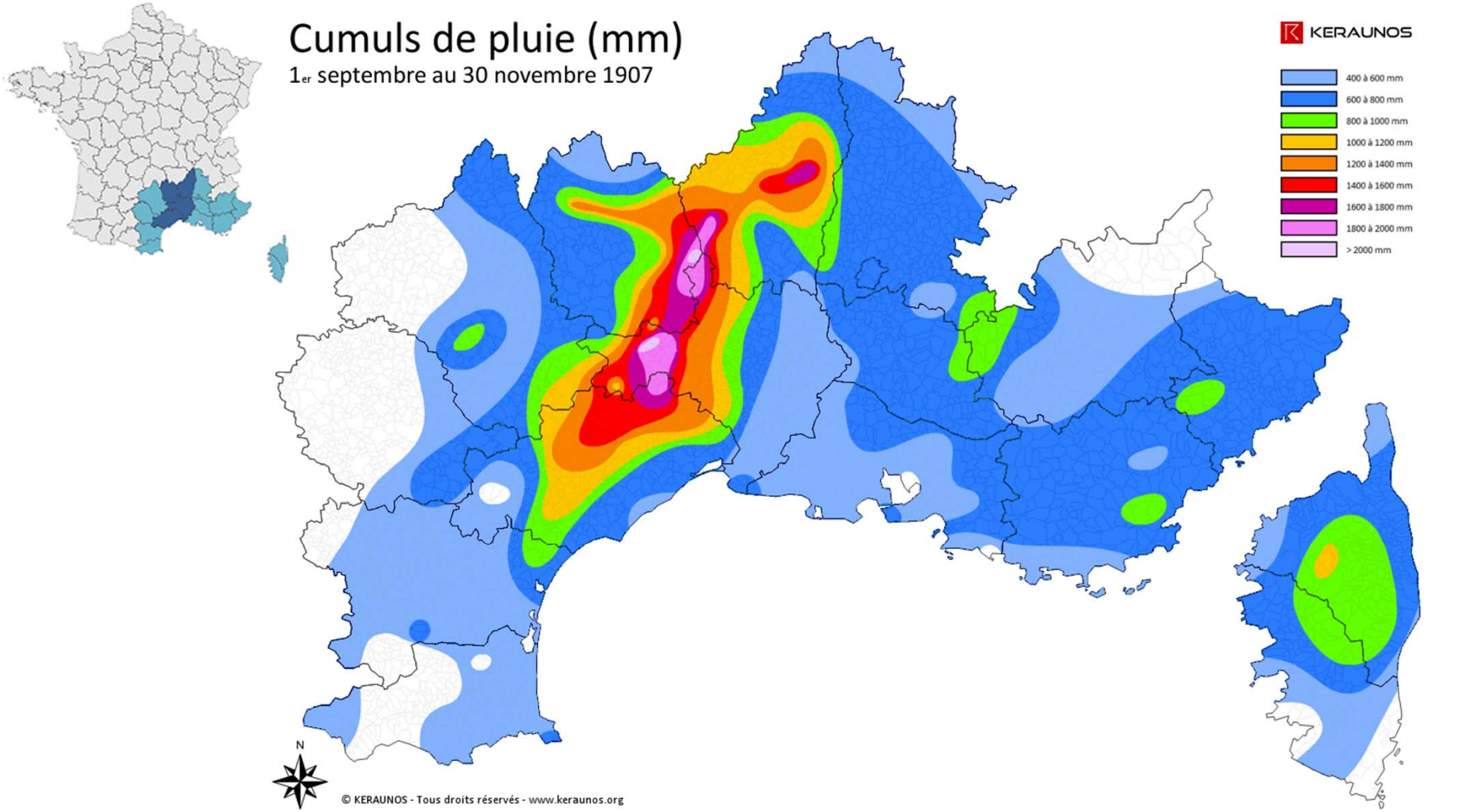
# Unknown situations …





# A similar event already recorded …

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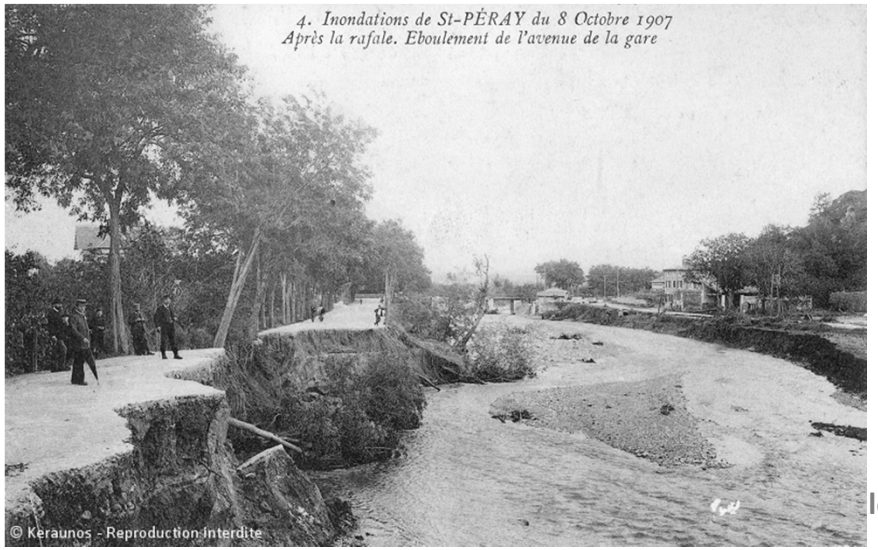
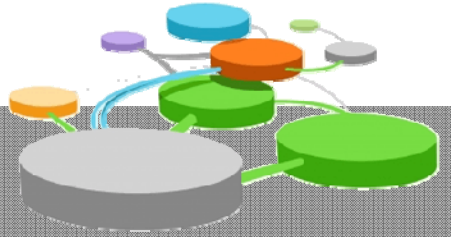
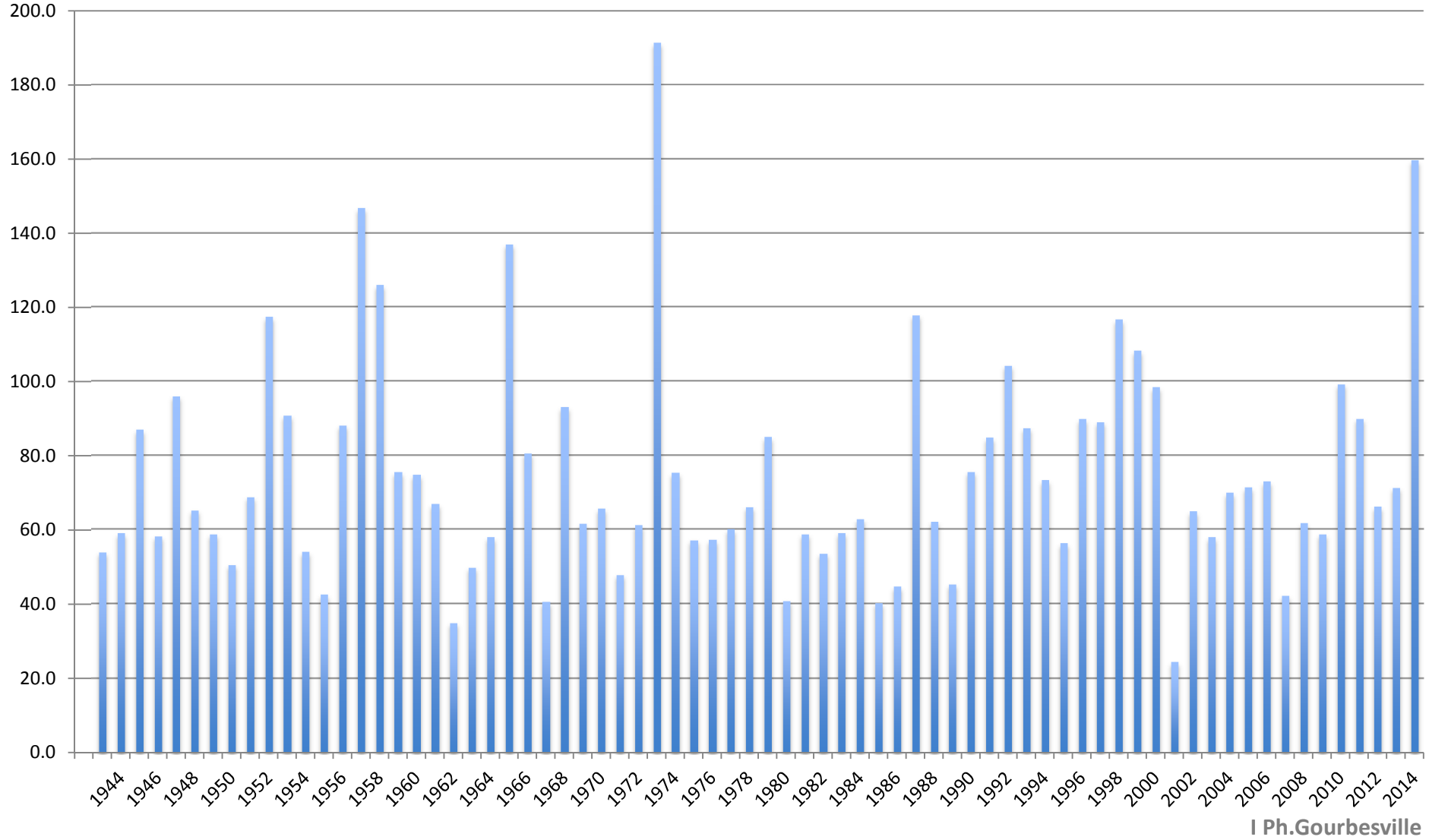


# Rainfall events 24h max/an at Nice airport



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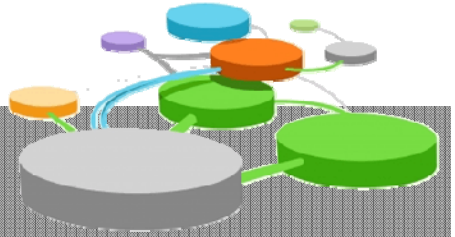
# Forecast & communication



## Vigilance météorologique

La carte est actualisée au moins 2 fois par jour, à 6h et 16h.

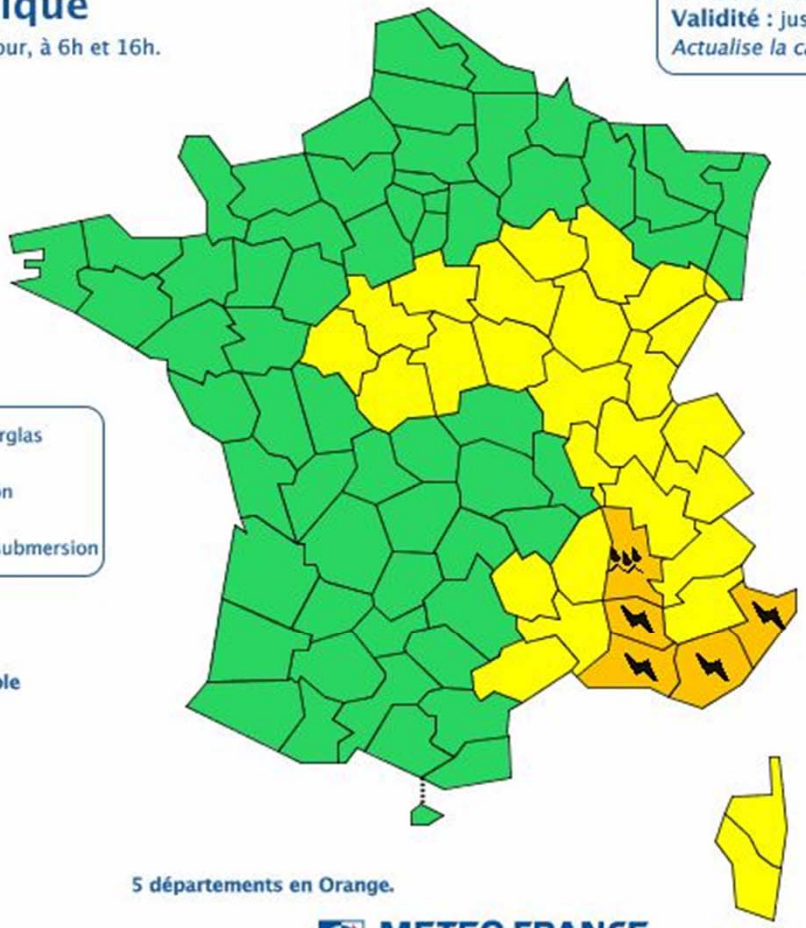
- **Une vigilance absolue s'impose** des phénomènes dangereux d'intensité exceptionnelle sont prévus...
- **Soyez très vigilant** , des phénomènes dangereux sont prévus ...
- **Soyez attentif** si vous pratiquez des activités sensibles au risque météorologique ...
- **Pas de vigilance particulière.**

| | |
|---|---|
| Vent violent | Neige-verglas |
| Pluie-Inondation | Inondation |
| Orages | Vagues-submersion |

Les **vigilances pluie-inondation et inondation** sont élaborées avec le réseau Vigicrues du **Ministère du Développement durable**

VIGICRUES

**Diffusion :** le samedi 03 octobre 2015 à 18h02
**Validité :** jusqu'au dimanche 04 octobre 2015 à 16h00
*Actualise la carte du samedi 03 octobre 2015 à 16h00*



5 départements en Orange.

Consultez le **bulletin national**

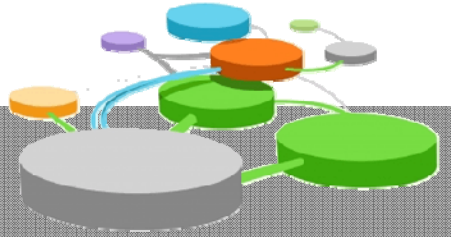
Episode de fortes précipitations orageuses le Vaucluse et le sud-est de la Drôme ainsi que les Bouches du Rhône, le Var et les Alpes-Maritimes.

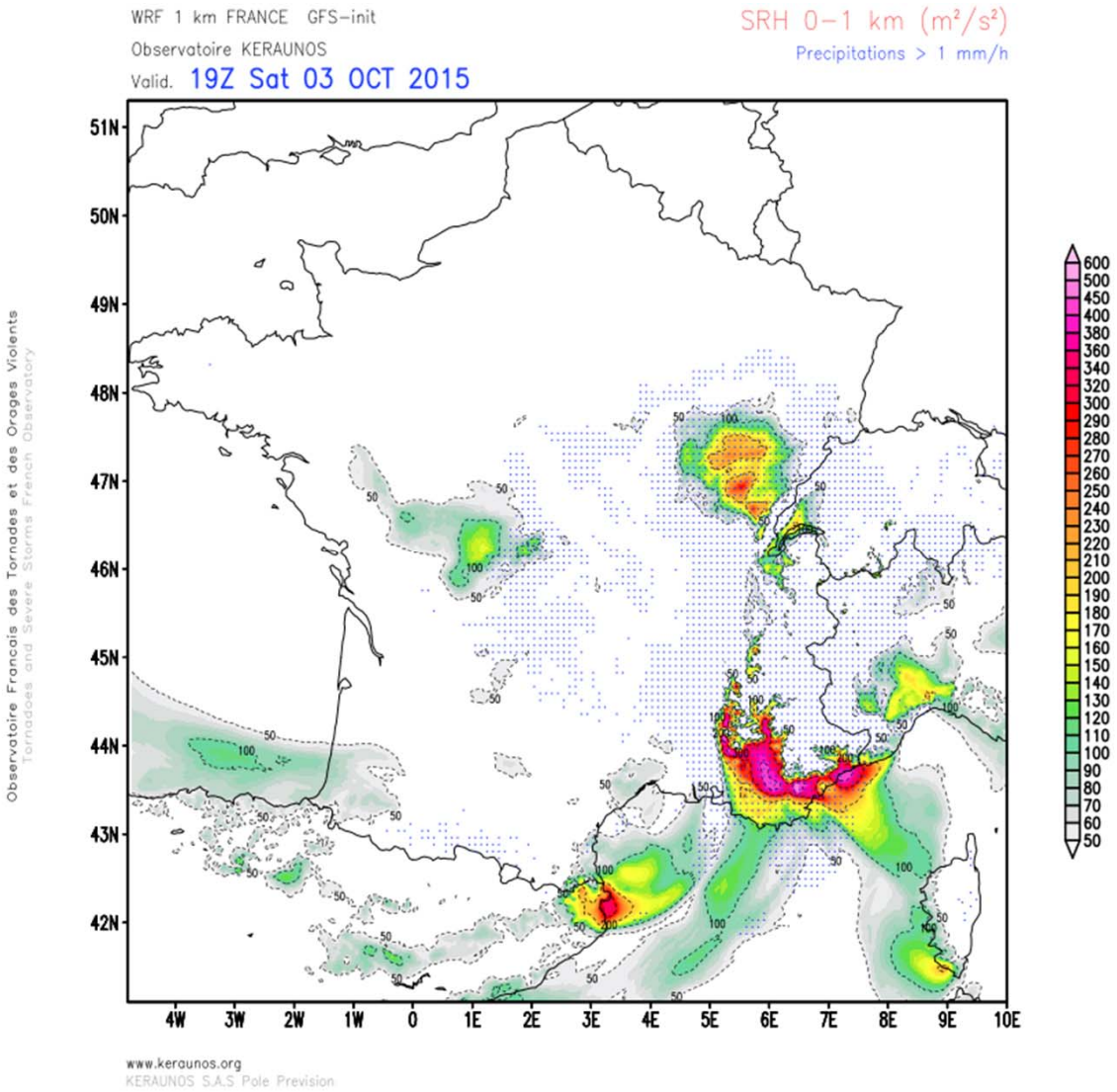
Cliquez sur la carte pour lire les **bulletins régionaux**

**Conseils des pouvoirs publics :**
Orages/Orange - Soyez prudents, en particulier dans vos déplacements et vos activités de loisir. - Evitez d'utiliser le téléphone et les appareils électriques. - A l'approche d'un orage, mettez en sécurité vos biens et abritez-vous hors des zones boisées. Précipitations/Orange - Evitez les abords des cours d'eau. - Soyez prudents face au risque d'inondations et prenez les précautions adaptées. - Renseignez-vous sur les conditions de circulation. - Ne vous engagez en aucun cas, à pied ou en voiture, sur une voie immergée ou à proximité d'un cours d'eau.

METEO FRANCE
Toujours un temps d'avance

# Forecast & communication






SRH 0-1 km, le 3 octobre 2015 à 21h locales.
Modèle WRF 1 km France.
Run du 03.10.2015 12Z.
(KERAUNOS)

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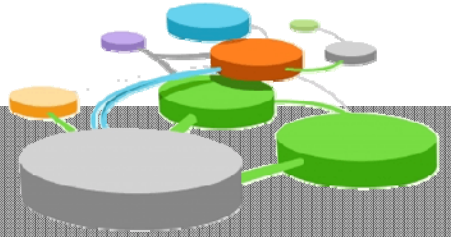
# Comments & Observations



- Rainfall event: exceptional but already observed in the past (T=100 ans)
- Strong runoff in Mediterranean catchments (morphological constraint)
- New and unexpected situation in the current urban environment
- Unknown risks and vulnerabilities
- Numerous & Important damages
- Limited information and limited efficiency of warning and communication systems/procedures

# Perspectives

*Earthquake + Tsunami, Japan, 2011*

*Sandy storm, USA, 2012*


# Perspectives

- No 100% safe infrastrure…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# Perspectives

- Promoting a risk culture

For additional information about what to do during a flood, visit *www.fema.gov/hazard/flood/fl_during.shtm.*

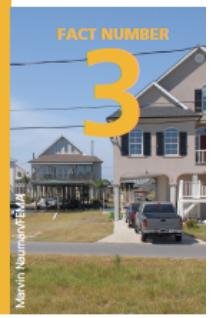

## Flooding *will* happen.

All rivers, streams, and lakes will flood eventually. This means that all levees will be called upon to combat floodwaters at some point. Don't think flooding can happen to you? Think again.

## Risks associated with flooding vary.

The flood risk associated with a levee depends first on the hazard or probability of a particular sized flood in a given location during a specific period of time, and second, on the potential loss of your property, your livelihood, or even the loss of your life or the lives of your loved ones as a result of flooding.

Find out more about flooding and flood risk at *www.floodsmart.gov/floodsmart/*




# Four Essential Levee Facts

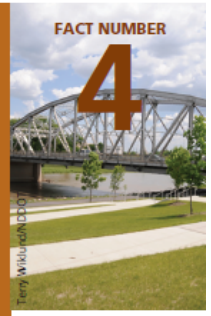

For detailed information about the National Flood Insurance Program (NFIP), see *www.floodsmart.gov.*

## No levee is flood-proof.

Levees *reduce* the risk of flooding. But no levee system can *eliminate* all flood risk. A levee is generally designed to control a certain amount of floodwater. If a larger flood occurs, floodwaters will flow over the levee. Flooding also can damage levees, allowing floodwaters to flow through an opening, or breach.

## Actions taken now will save lives and property.

There are many steps you can take, from purchasing flood insurance, to developing an evacuation plan, to flood-proofing your home, to reporting any problems that you see. The sooner you act, the better off you'll be when the next flood occurs.




For information about the National Flood Insurance Program's Community Rating System, see *www.fema.gov/business/nfip/crs.shtm.*

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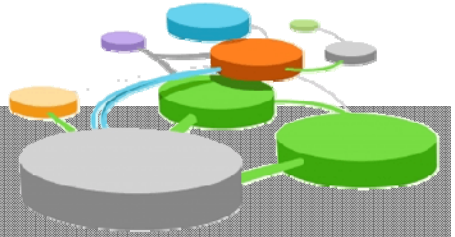
# Perspectives



- Improve knowledge & understanding the risks:
  - Understand the physical processes
  - Qualifying vulnerability of urban environment
- Developing reliable and robust information systems/protocols
- Adapt urban environment
- Promote and develop resilience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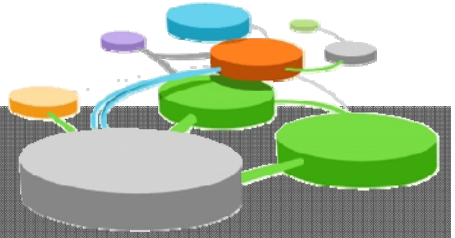
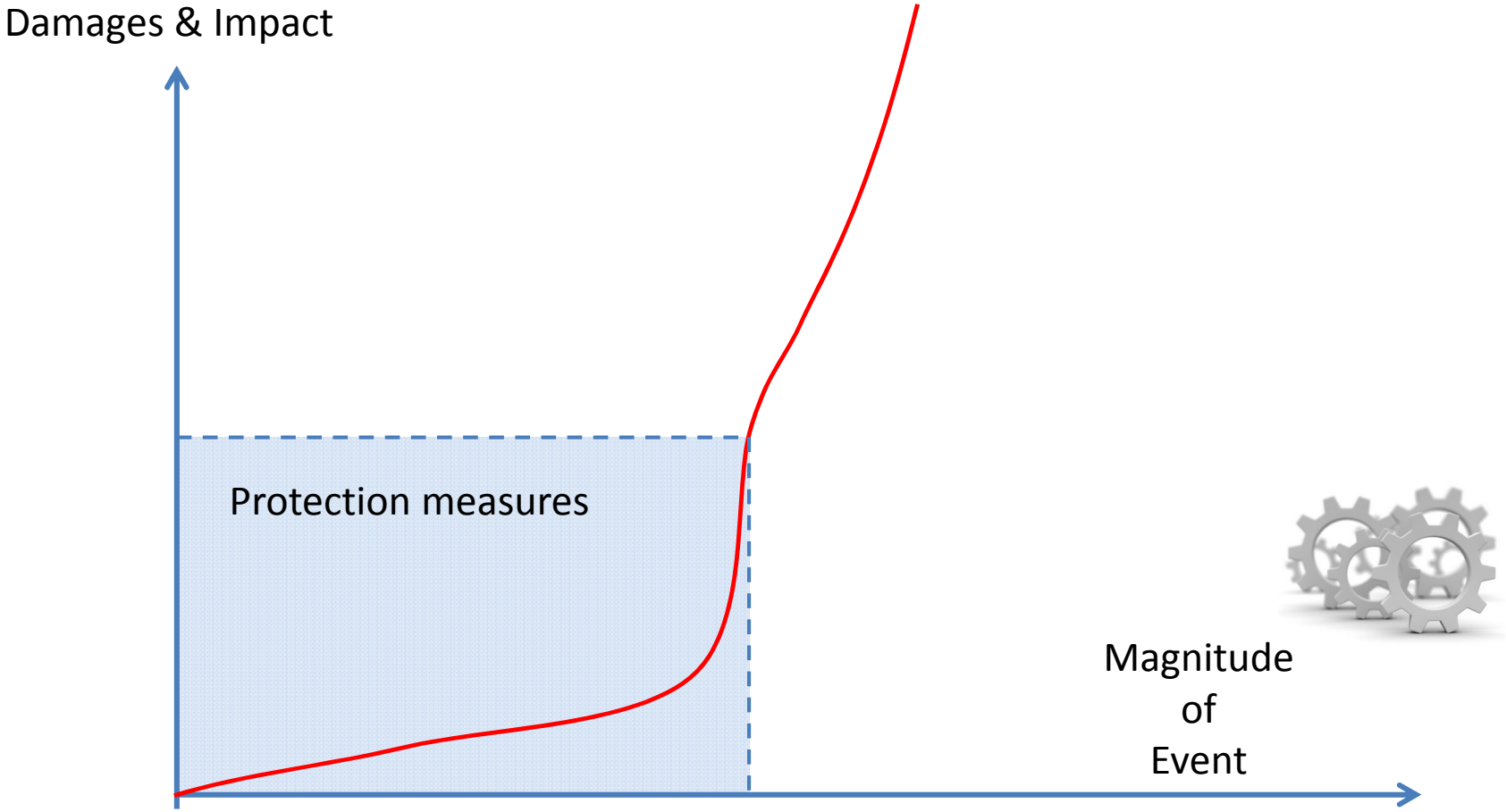
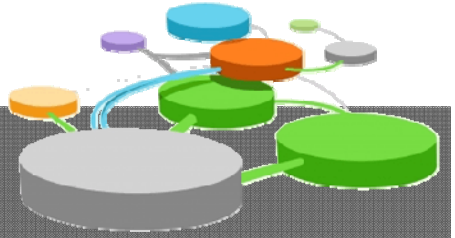
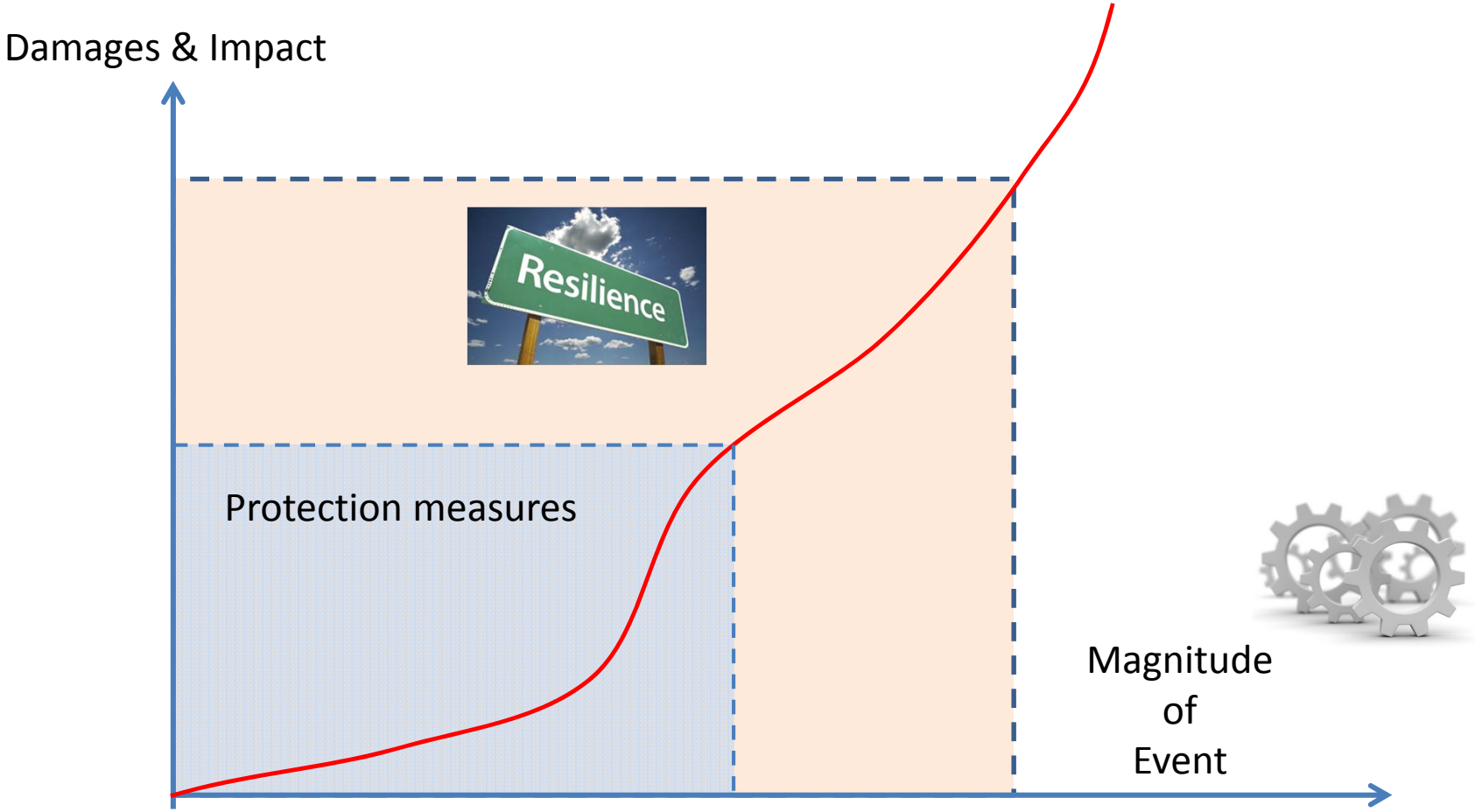
# Risk management approach





# The resilience concept





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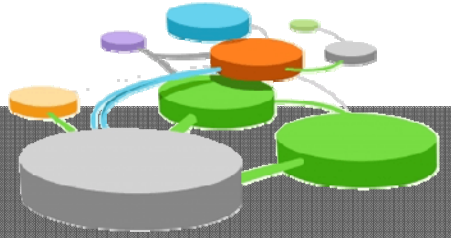

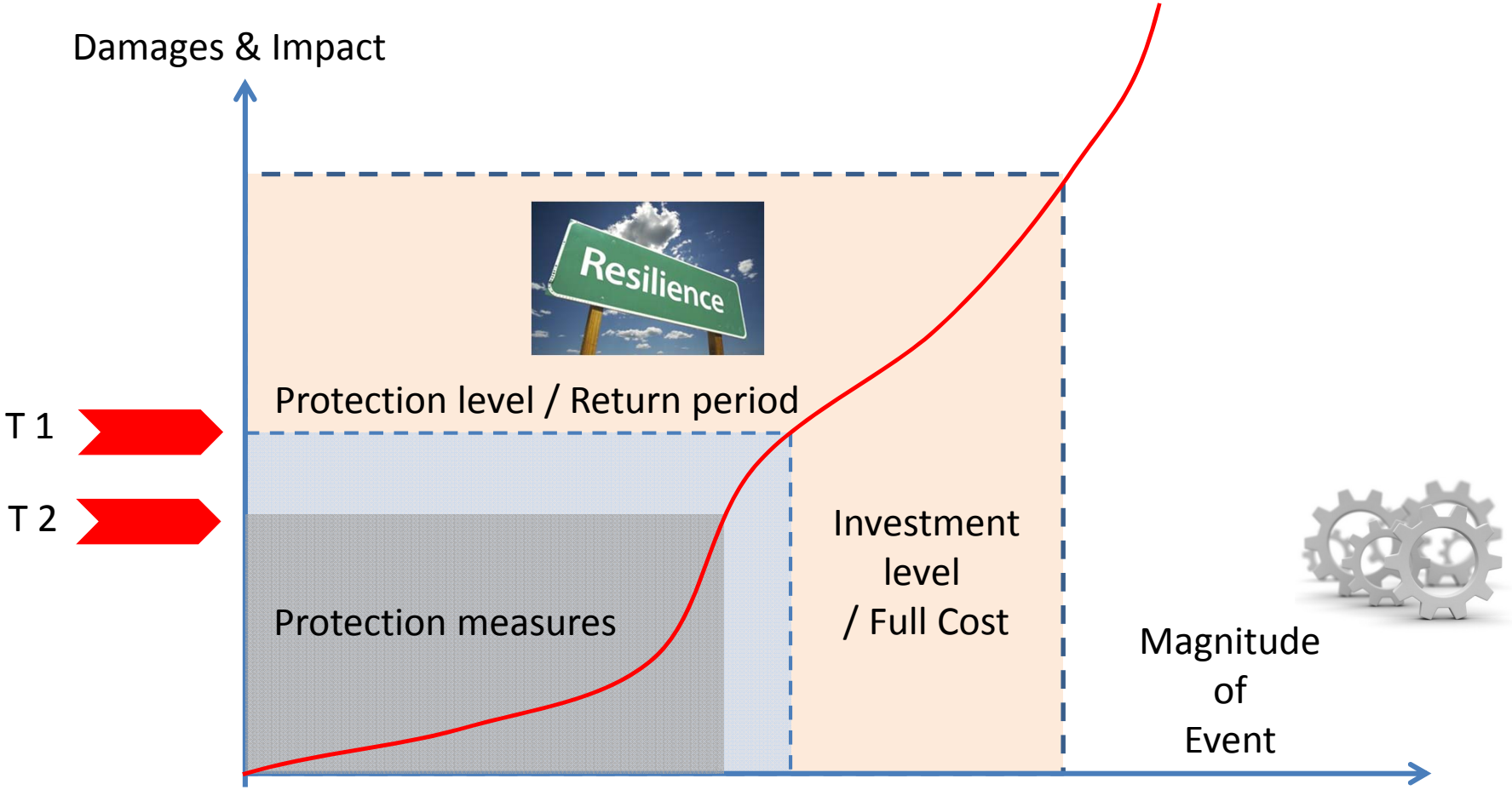

# Thanks for your attention!

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