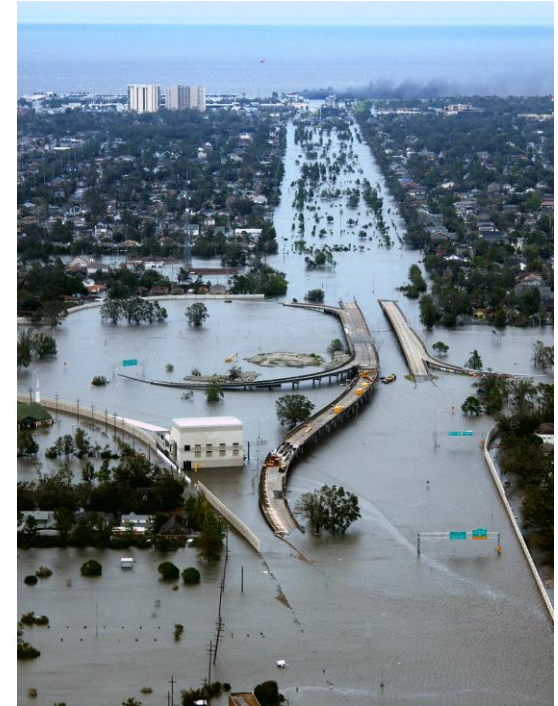


Integrated Risk Management for more resilient societies in the era of global change.

Gilles Grandjean (BRGM), Soraya Boudia (CNRS/UPCité), Didier Georges (UGA)

The socio-economic fabrics and planet Earth: 2 systems in complex interaction... .. which generate complex effects!



as risques pour des sociétés plus résilientes à l'ère des changements globaux

France 2030 program on Risks



Méthodologies and scientific framework



Science & Society: adaptation strategies, Risks and crises management

2 project

Decision making: data, models and algorithms

1 project



Case studies



Mountains & coastal domains

2 projects



Urban & industrial areas

1 project



Overseas

1 project

Implementation

IT Platforms :

Numerical data management and dissemination

1 project



Services
Education
Economical valorization

France2030 Program on Risks (IRIMA)

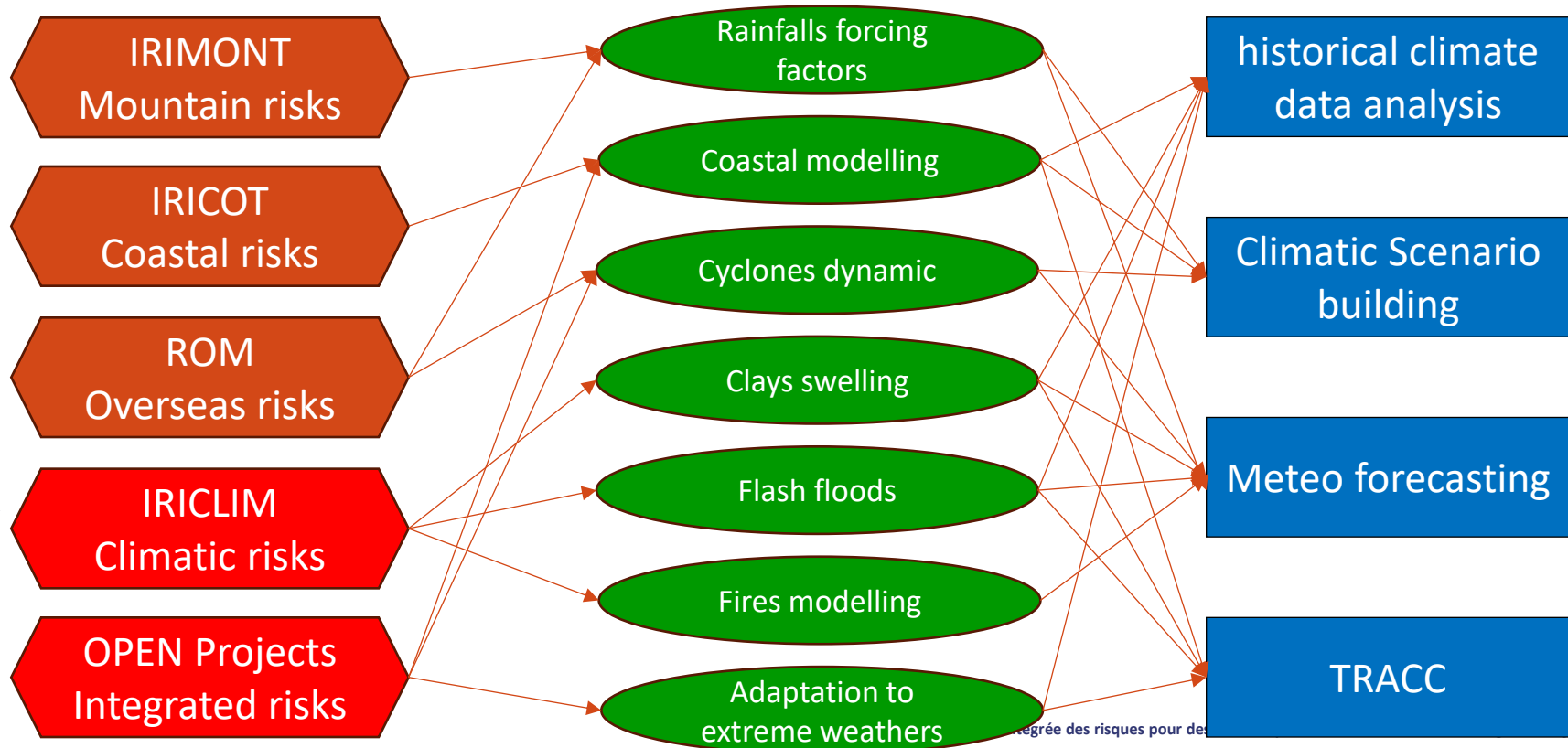
Integrated Risks Management for more resilient societies at the global changes era



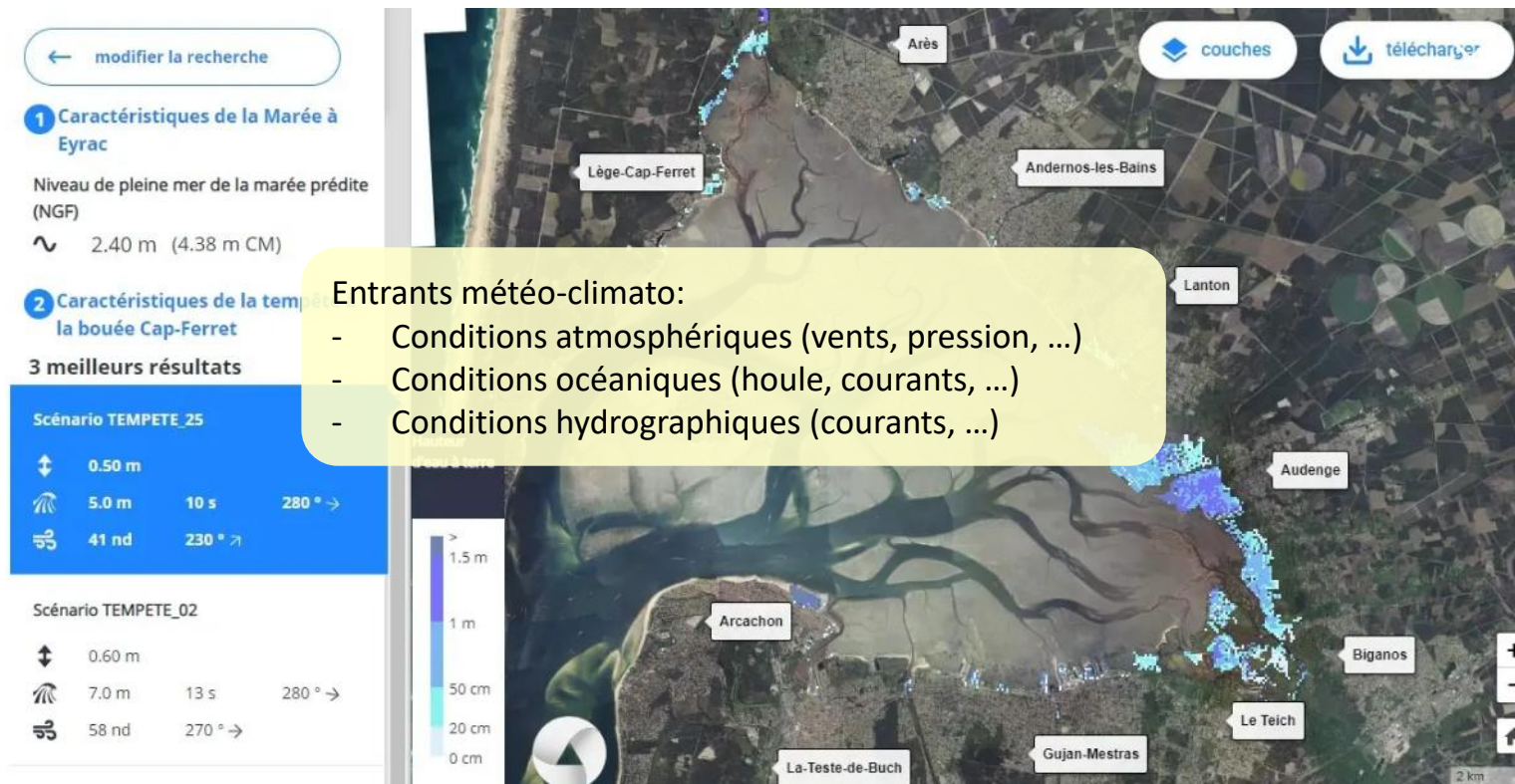
- **Launching:** may 2023 for a duration of 8 years
- **Budget:** 52 M€ granted
- **1 Gouvernance project** for management, scientific exchanges and scientists visibility (~7M€, BRGM [*G.Grandjean*], CNRS [*S.Boudia*], UGA [*D.Georges*])
- **8 thematic focused projects** (29M€, 2024 → 2029):
 - Risks in **MONTAINS** (2.5M€, INRAE/UAM),
 - Risks in **OVERSEAS** (2.5M€, IPGP/BRGM),
 - **NUMERICAL PLATFORMS** (7M€, BRGM),
 - **CHAIRS** (7M€, CNRS),
 - **COASTAL** risks (2.5M€, UB/BRGM),
 - **NATeCH** risks (2.5M€, INERIS/IRSN),
 - **RISK & SOCIETY** (2.5M€, CNRS),
 - **INTERNATIONAL ACTIONS** (2.5M€, UGA)
- **Call for proposal** (15M€, 2024, 25, 26 → 2030):
 - **1 call** on extreme climate-driven risks → 1 project
 - **1 call** open → 10-12 projects

9 french research centers
involved in the scientific board
+30 partners involved in the
thematic projects

IRIMA projects' needs in terms of climatic information



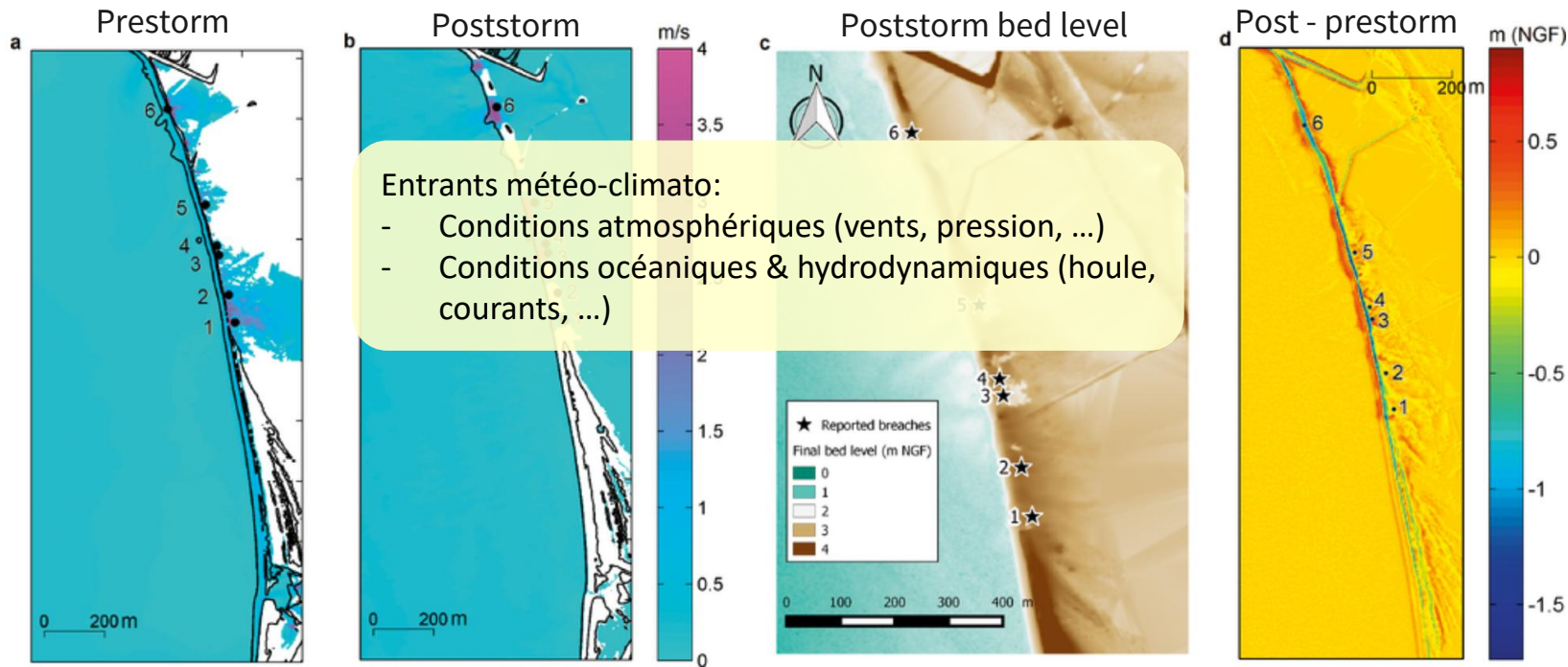
Submersion scenarios around Arcachon



Coastal erosion simulations during storms



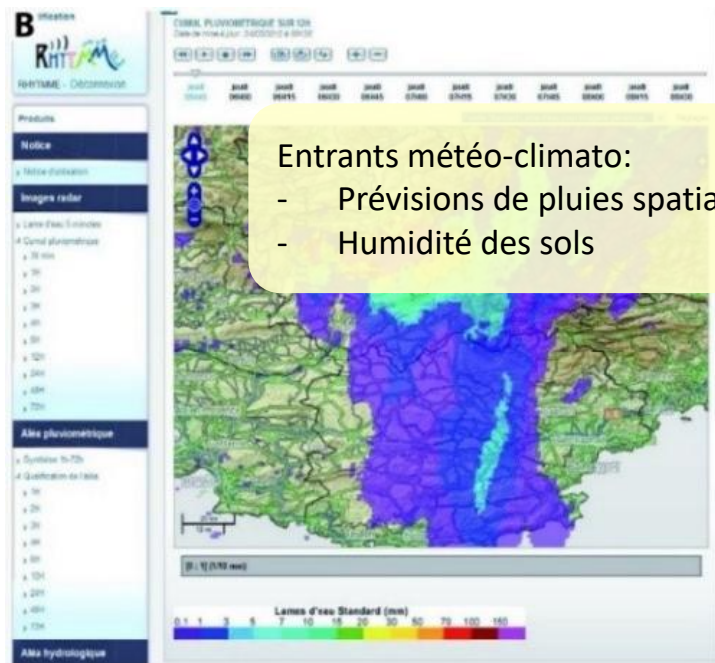
Poststorm XBeach results zoomed in on the dune system



Landslide EWS



- Coupling landslide susceptibility map and rainfall forecasting maps (i.e., RhyTMME service)

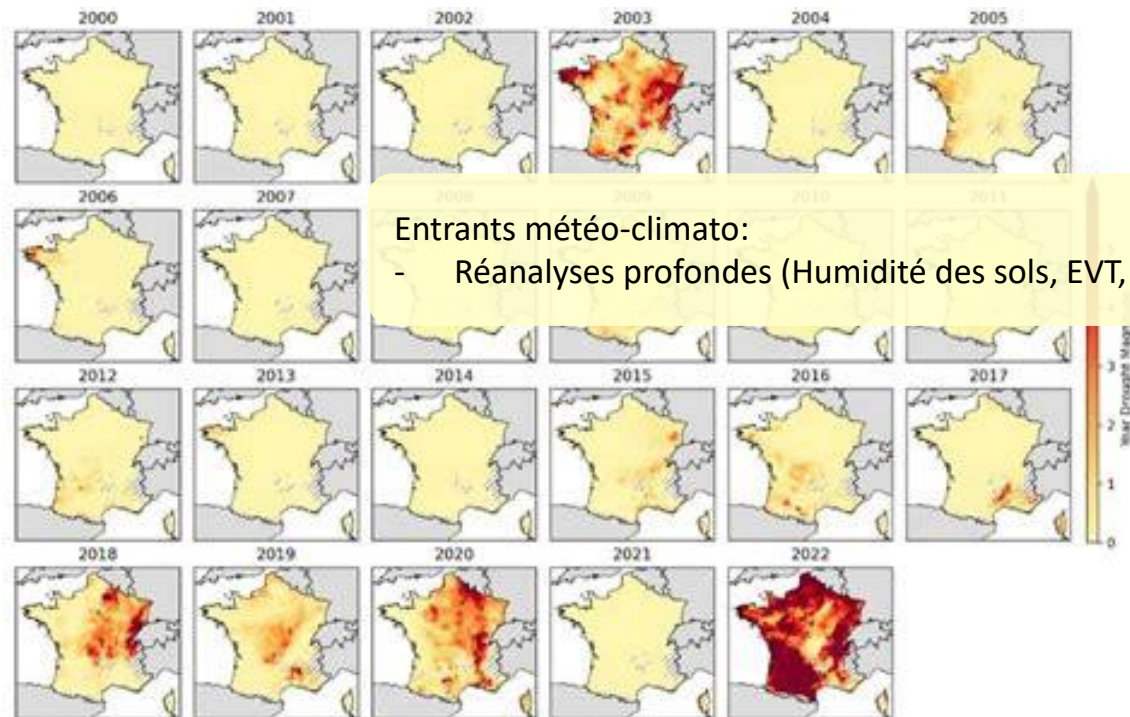


Entrants météo-climato:

- Prévisions de pluies spatialisées (radar)
- Humidité des sols



Drought impact on building (clays swelling risk)



Entrants météo-climato:

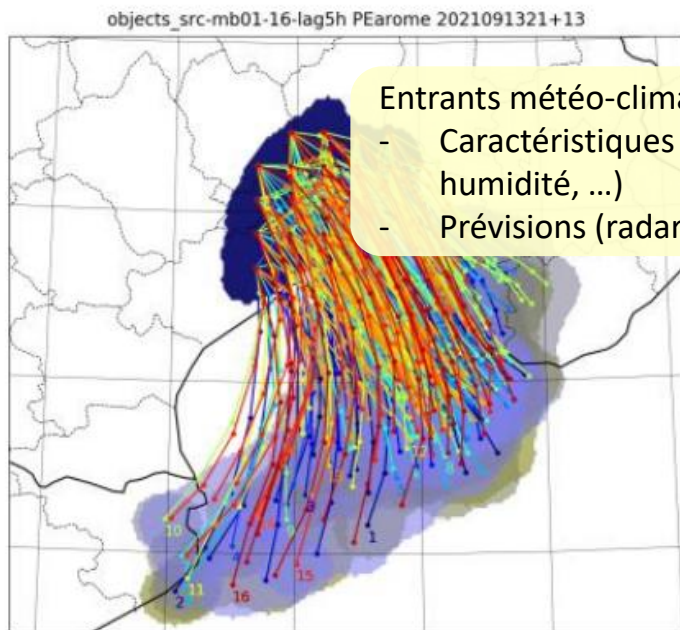
- Réanalyses profondes (Humidité des sols, EVT, ...)

Drought magnitude
indicator for clays
swelling risk
management from
2000 to 2022

Rainfall impacts forecasting

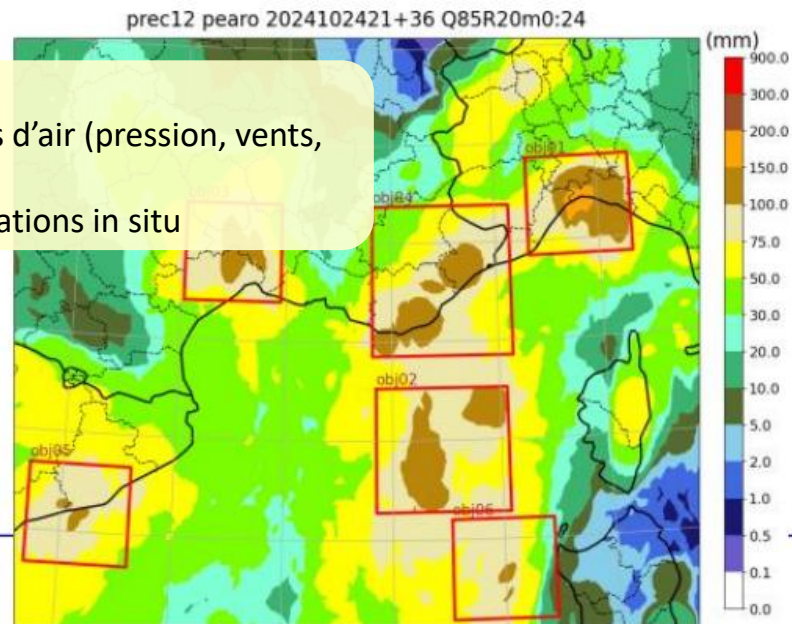


- Convective airmass backtrajectories to select rain nowcast predictors
- high-rain objects for impact oriented forecast scenario generation

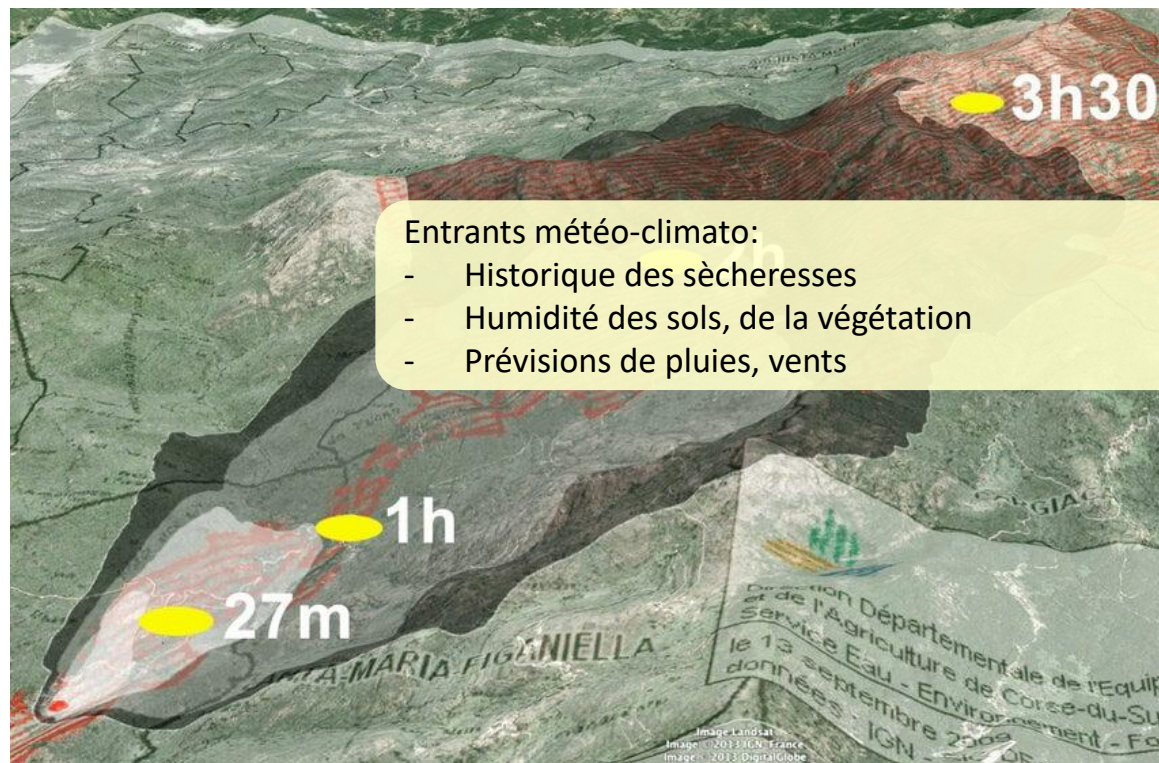


Entrants météo-climato:

- Caractéristiques des masses d'air (pression, vents, humidité, ...)
- Prévisions (radar) et observations in situ



Fire modelling



View of the "coupled" fire simulation (grey scale) 27 min, 1 h, 2 h and 3 h 30 after the beginning of the fire, with corresponding observed fire passing points (yellow marks), superimposed on the real burnt area including fire fighting actions (dashed red area). The horizontal extension at the base of the figure is 5 km.

Synergies between IRIMA and TRACCS



- Dissemination of TRACCS meteorological data to IRIMA community
 - Re-analyses, forecasting
 - Climate services
- Exchange between IRIMA and TRACCS
 - Best climatic scenarios supporting public policies
 - Uncertainties of climatic information
- Dissemination IRIMA of climatic impacts (type, intensity, distribution, ...) to TRACCS community
 - What: clay swelling, flooding, landslides, coastal submersion/erosion, fires, ...
 - Who: Population, buildings, infrastructures, ecosystems, ...

Thank you !



PROGRAMME
DE RECHERCHE
RISQUES

PILOTÉ
PAR



RECHERCHE

MENU

- <https://www.pepr-risques.fr/fr>
- g.grandjean@brgm.fr



IRIMA – Gestion intégrée des risques pour des sociétés plus résilientes à l'ère des changements globaux