COP31 TÜRKİYE ANTALYA

Antalya, Türkiye, 9–20 November 2026

SIDE EVENT

EARTH OBSERVATION FOR CLIMATE TRANSPARENCY: COPERNICUS SERVICES AND IRIDE FOR CLIMATE REPORTING



SCREENCAPTURE WELCOME

SLAPIS SAHEL
Système Local d'Alerte Précoce pour les Inondations au Sahel

Early Warning Systems and International Cooperation:

The Sahel experience

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Context

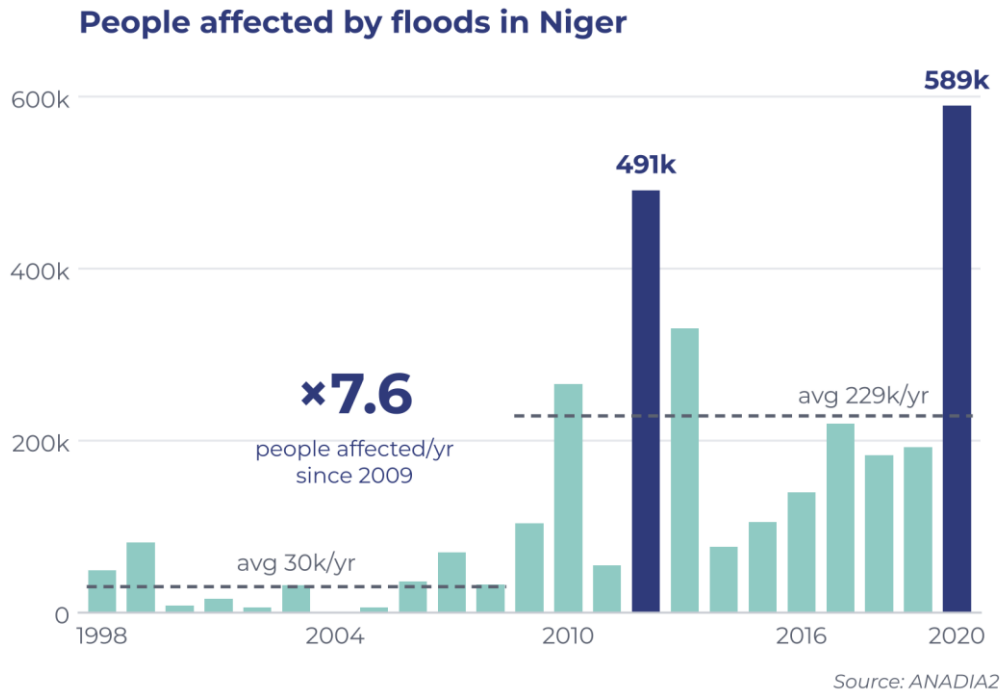
- In Africa, **climate change** amplifies hydrometeorological hazards on top of deep social and agro-ecosystem vulnerability

- **Flood impacts** are rising sharply in the Sahel: in Niger, people affected per year ×7.6 since 2009

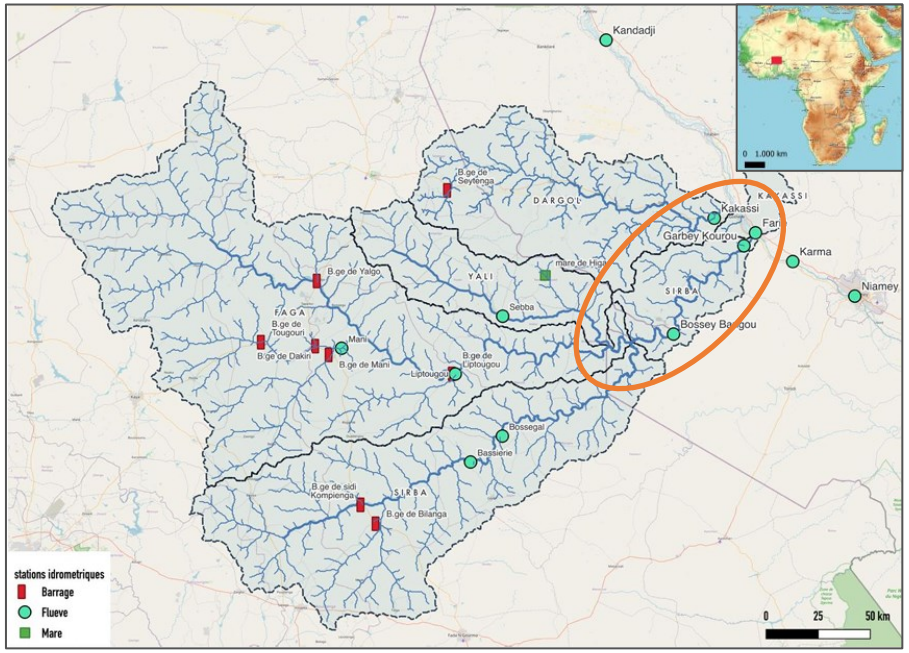
- **Early warning** is central to disaster risk reduction and climate adaptation (UN **EW4All**)

- **NWP** accuracy has improved, but a gap between rich and poor countries persists (Linsenmeier & Shrader, 2023)

- In EWS, a critical gap between knowledge/technical skills and **operational competence** (configuring, running, verifying…)



SLAPIS Sahel



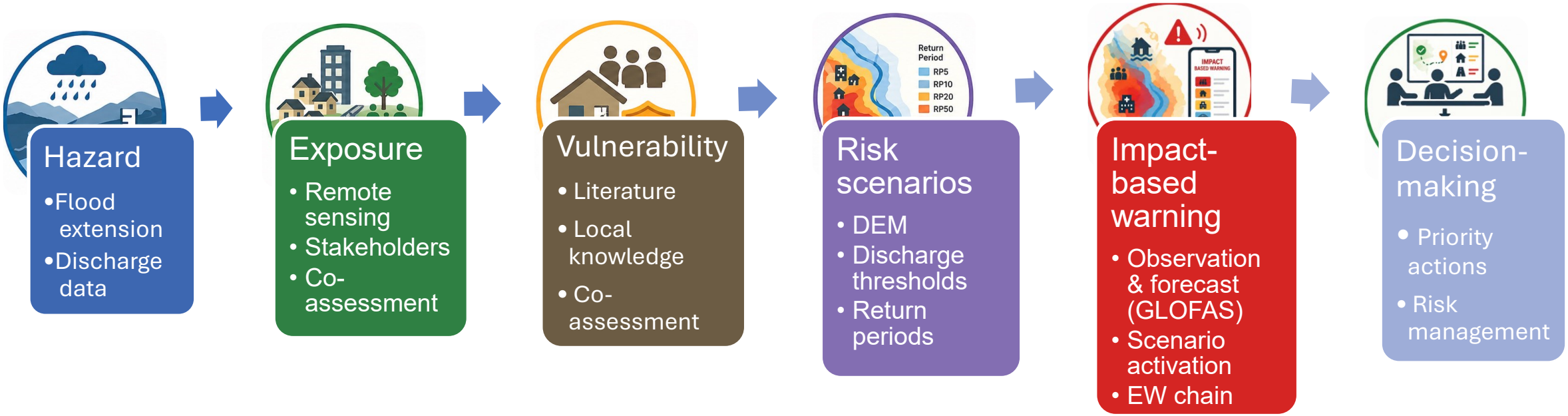
- Decades of Italian cooperation in the Sahel
- The Local Flood Early Warning System in the Sahel project is funded by the **Italian Agency for Development Cooperation (AICS)**
- **Transboundary, Impact and Community based Flood EWS** on the **Sirba** basin (main tributary of Niger River) shared by Burkina Faso (80%) and Niger (20%)
- Technical services in neighboring countries often do not share data and rarely cooperate across borders

Flood EWS approach

Linking discharge to risk levels through hydraulic-hydrological analysis and forecasts, participatory risk assessment and risk thresholds

- **Earth Observation** (satellite imagery, DEM, building, crops footprints) feeds hazard, exposure and risk scenarios

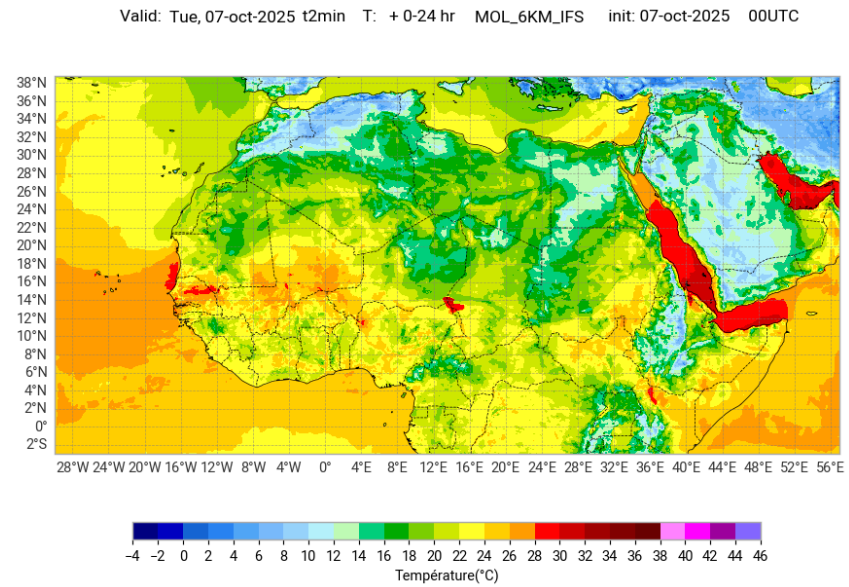
→ Co-produced, structured information for decision-making



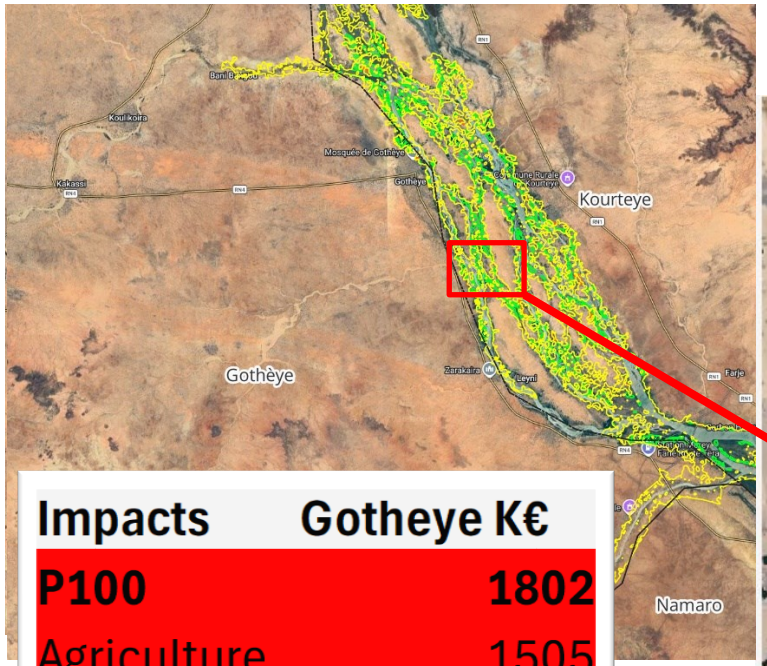
Impact based warning (Weather)

Weather forecasts → Hydrological modelling → Potential impacts → Warning

- Numerical weather forecasting for flood risk reduction:
  - CNR-IBE (ITA)
  - Agence Nationale de la Météorologie (BF)
  - Direction de la Météorologie Nationale (NER)
  - LaMMA (ITA)
- NWP models: WRF, MOLOCH
- From knowledge to competencies: embedding trainees in operational teams
- Sharing tools and resources
- Win-win: testing and improving MOLOCH in tropical areas



Impact based warning (Impacts)



Impacts	Gotheye K€
P100	**1802**
Agriculture	1505
Buildings	297
RP30	**1201**
Agriculture	1003
Buildings	198
RP10	**460**
Agriculture	346
Buildings	114

Satellite imagery + DEM + BASEMENT + Field observation → flood scenarios and impacts (K€)

Buildings	Hondobon m2
P100	624
RP30	177
RP10	177

HortiFlooded
GOOGLE_BUILDINGS
Flooded buildings
not flooded buildings
flooding area
GuineanFlood_RP10
GuineanFlood_RP30
GuineanFlood_RP100
0 75 150 m

Buildings	Hondobon Goungou m2
P100	867
RP30	842
RP10	842

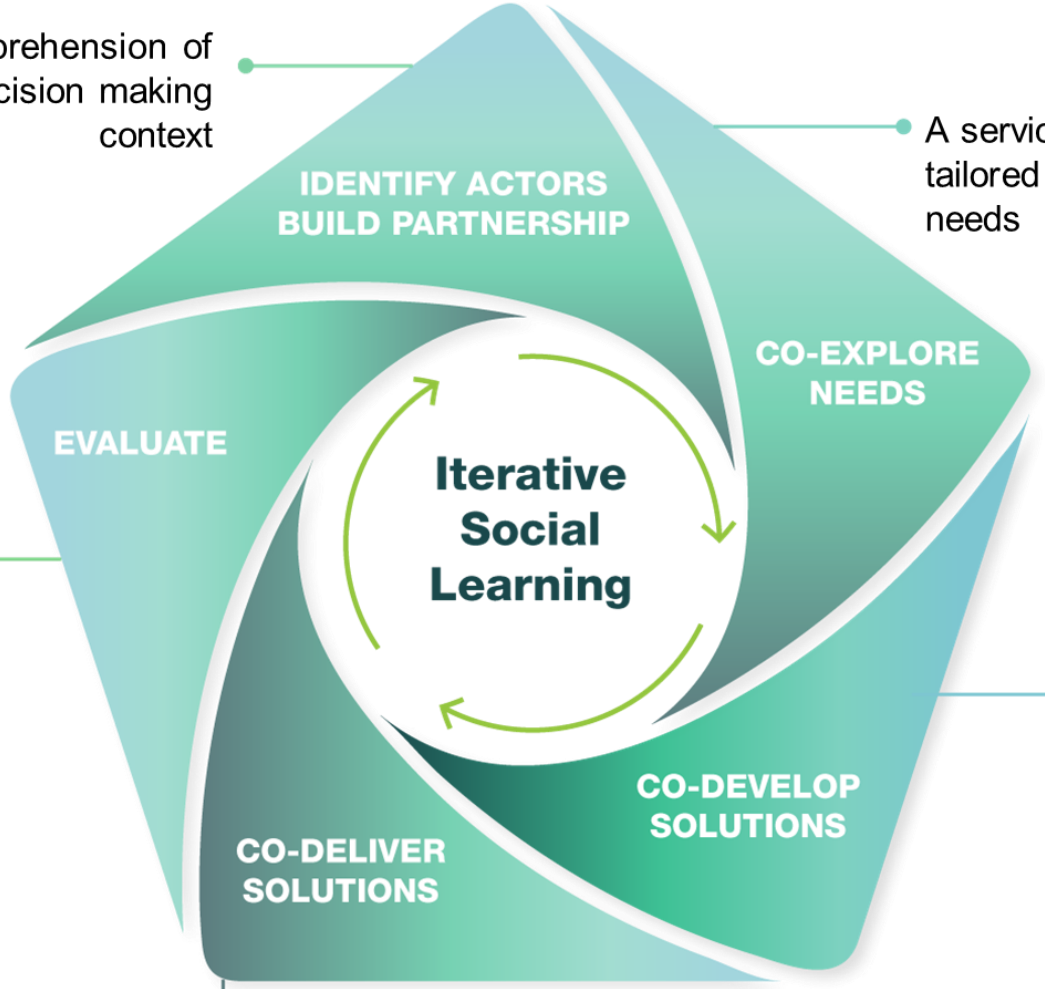
The transboundary co-production process

Identification of **counterpart** institutions in 2 countries, establish formal collaboration

Better comprehension of the decision making context

A service more tailored to users needs

Identify **common** needs and **specific** issues



Improved service, new services, new funding schemes, stronger and new partnership

More actionable and trusted information products

South-South cooperation and training

Collaborative **lobbying** toward funding agencies, evidence of success from SLAPIS Niger

More Efficient Outreach

Reciprocal valorization of experience and tools

Conclusions

Co-Production:
enables building context-appropriate, and sustainable operational EW competence

Embedding of trainers in operational teams:
enables mutual learning and strengthens the co-production approach

EO 4 impact-based:
impact scenarios enable decision-oriented warnings in data-scarce basins

Power relations and institutional asymmetries:
mitigated by co-production, public-to-public institutional cooperation

Sustainability:
A solid MEL framework is a powerful lever for recognition by decision-makers and the interest of funding agencies

Conflict:
Security issues common to both countries are slowing the implementation in the field

Tarchiani et al., EMS 2026

Thank you

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https://climateservices.it/progetto/slapis-sahel/

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