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Cerema
CLIMAT & TERRITOIRES DE DEMAIN

Study visit of Vietnam DPM to Cerema

Planning management: Policies, tools and methods



17th September 2026

Agenda

<u>Objective of the meeting :</u> Sharing Cerema's experience, approaches and tools to supporting the development and implementation of planning policies in France

1. **Introduction to Cerema**
2. **Territories and cities technical division: Supporting local governments planning management**
3. **Risks, Water and Seas technical division: Specific contributions to coastal planning and integration of risk management into planning**
4. **Discussion**

Introduction



Cerema*, a public authority in regional planning, supports the State, local authorities and businesses in adapting regions to the climate challenge.

* Cerema is a public institution under the authority of the ministries responsible for regional planning and Ecological Transition.

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Cerema

A PUBLIC EXPERTISE SERVICE FOR ALL TERRITORIES, URBAN, RURAL, COASTAL OR MOUNTAIN

1st public institution at both national and local level

2,500 multidisciplinary staff members

27 locations across mainland France and overseas territories

Over **70** years of experience

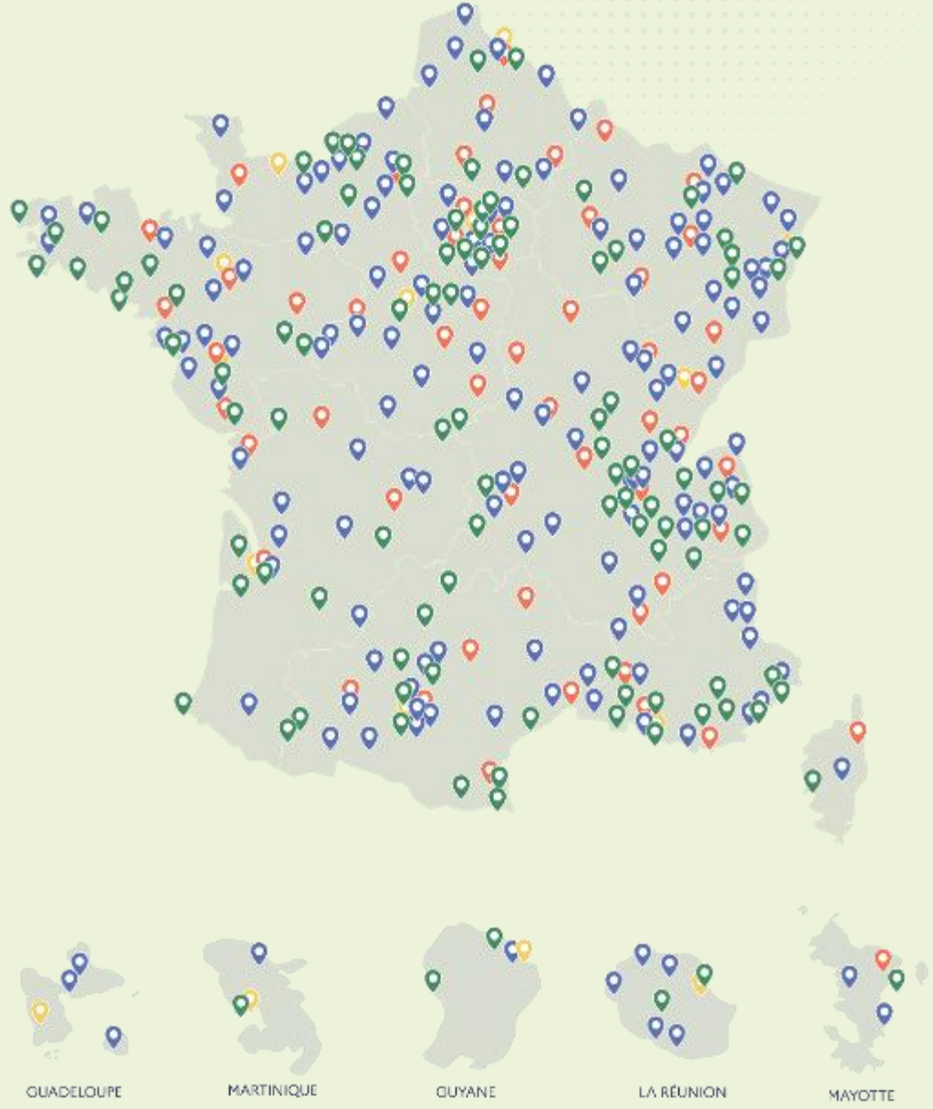
1,000 More than member local authorities

11,000 references available freely accessible

100 new editions per year

FIRST PUBLIC INSTITUTION BOTH NATIONAL AND LOCAL

Throughout mainland France and its overseas territories, alongside government departments and local authorities, Cerema plays a key role in developing and implementing national public policies and regional projects adapted to the climate of tomorrow.



1,000

local authorities in mainland France and overseas territories that are members of Cerema in May 2025, including:

16	87	467	430
regions	departments	municipalities	EPCI

CEREMA'S THREE MISSIONS

A local, innovative, collaborative and unifying approach.



Advise & Design

Supporting local authorities, government departments and businesses in adapting public policies and projects to climate change .

Be a trusted centre for regional climate challenges



Develop, disseminate & facilitate

Produce and disseminate freely accessible knowledge (standards, doctrine, rules , studies, tools and methods, etc.).

Act as a key knowledge hub



Research & Innovate

Conduct research focused towards operational applications to accelerate the expertise of tomorrow.

Drive the development of tomorrow's expertise and solutions

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TAKING ACTION FOR TERRITORIES ADAPTED TO CLIMATE CHANGE

Cerema plays a key role in the development and implementation national public policies and regional projects adapted to the climate of tomorrow **in six areas of activity:**

Regional planning and strategies
Envisioning and designing new ways of developing territories

Buildings
Adapting buildings to climate change and improving their quality of use and accessibility

Mobility
Developing carbon-free, secure mobility services for everyone and for all regions

Transport infrastructure
Ensuring the efficiency and sustainability of transport networks

Environment and risks
Prevent natural risks and preserve the environment in the context of development projects

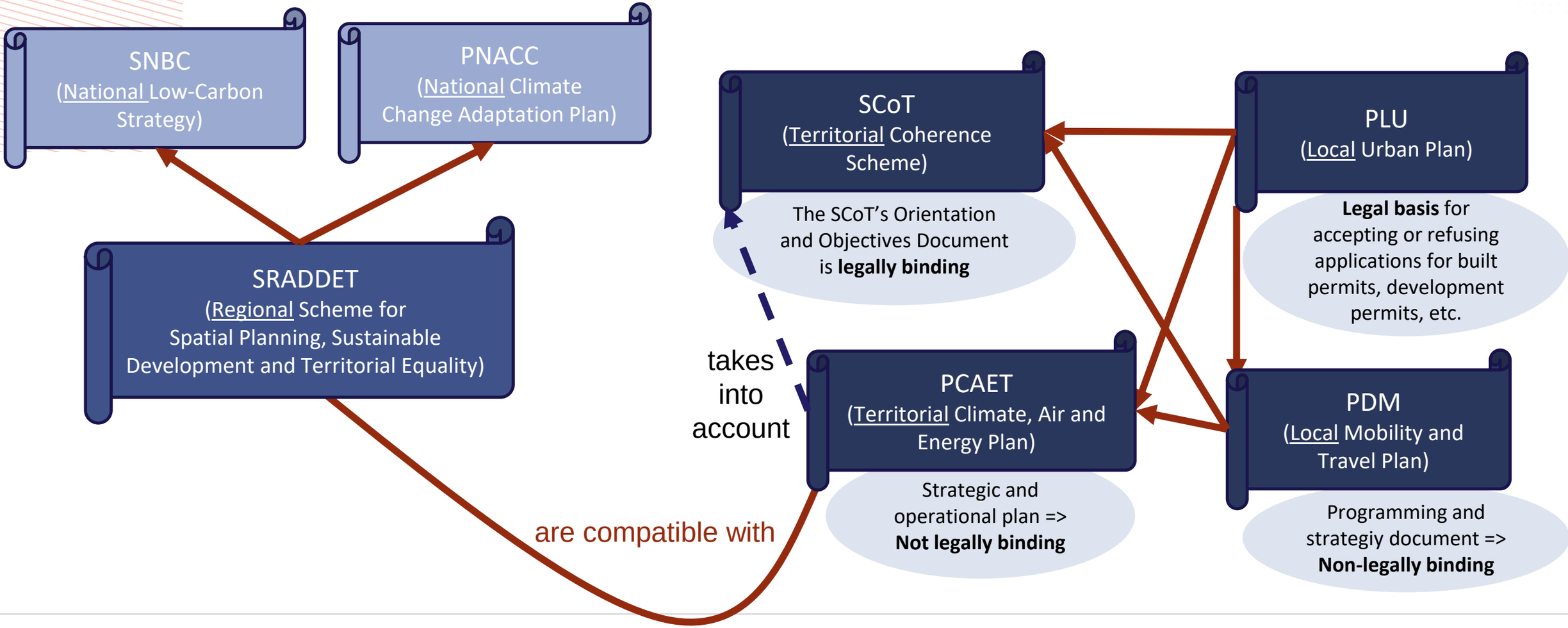
Sea and coastline
Adapting coastal areas to climate change and ensuring the safety of maritime and river activities

Territories and cities technical division

Supporting local governments planning management

Coordination of the various planning documents

The French normative architecture
Coordinating national and local planning documents



Case study #1: Cerema's assistance to the Rouen Metropolis Integration of its climate change policy into its urbanism document

SCoT-AEC
(= SCoT + PCAET)

is compatible with

PLU

MITIGATION LEVERS

efficacity

Encourage energy-efficient renovation of the buiding stock

sobriety

Aim for compact urban forms with high-quality public and natural space

Build new housing in areas accessible by public transport and bicycle

RE

Deploy rooftop solar energy

ADAPTATION LEVERS

The PLU protects watercourses and bodies of water

Prohibit urban development In flood-prone areas

Carbon sink

Avoid urbanizing land with high multifunctinality

Cerema will help to find levers for PLU, corresponding to each SCoT-AEC mitigation and adaptation levers (= political choices)

Preliminary mapping study of the Rouen Metropolis territory : evaluation of land potential based on climate and ecological criteria

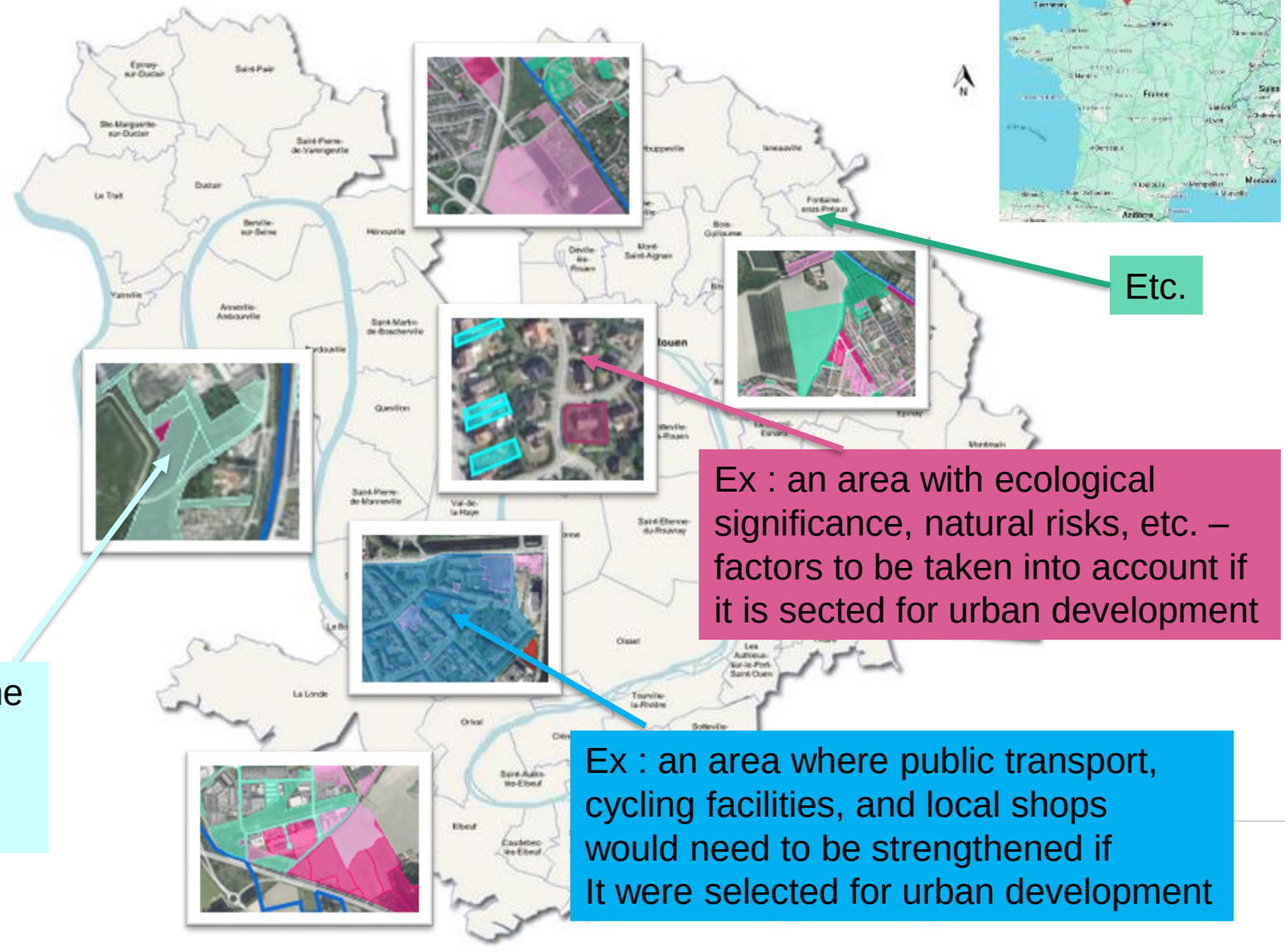
Criteria for each land parcel :

Low carbon objectives :

- Proximity to urban heating and mobility networks: public transport and cycling infrastructure
- Proximity to a grocery store, a school, a pharmacy, a green space

Climate and ecological risks :

- Natural hazards (floods, clay shrinkage-swelling, Fire, rockfall
- Urban overheating, ecological continuity



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Case study #2: Low carbon territories program by Cerema
Support to local authorities for the final evaluation of their PCAETs

The Saint Brieuc urban Area :

Cerema's mission **:** Assist the local authority in defining its own PCAET evaluation framework



1- Evaluate what ?

- Strategy *(ex : reduce transport-related GHG emissions)*,
- Measurement indicators, for :
  - proper implementation of actions *(ex : new cycling infrastructures)*,
  - success criteria *(ex : more cycling trips)*,
- Governance *(ex : Was the coordination and mobilization of stakeholderts sufficient ?)*
- Link and coherence with other planning documents : sufficient or not (ex : with the Mobility and Travel Plan)

2- Evaluate with whom ?

With the stackeholders involved in the implementation of the PCAET : interviews, workshops…

3- What result ?

The table of their PCAET evaluation framework… now to be filled in

Land Use Frugality: changing the development model

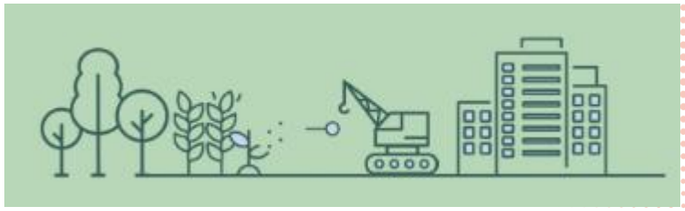
Why is the current development model of land use a problem?

A **post-war development model** that depends on **car use** and pushes households **away from jobs** in order to give them access to **cheaper housing**.

This model consumes the equivalent of **three football fields per hour**, spreads cities outward, and causes scattered development in rural areas.



"Zero Net Land Take" (ZAN) trajectory



The preservation of **Natural, Agricultural, and Forest spaces (NAF)** lies at the heart of national public policies, particularly through the "**Zero Net Land Take**" (ZAN) trajectory set by the **Climate and Resilience Law.**

Based on a national observation and measurement system, led by the General Directorate for Planning, Housing and Nature (DGALN) and implemented by public operators: **Cerema, IGN.**

⇒ Cerema produce, analyze and release **national NAF urbanization data.**



halving NAF urbanization over the decade 2021-2031 compared to the previous period 2011-2021.

Role of Cerema in ZAN challenges

Some actors oppose a numbers-based, accounting approach to planning — “calculator urbanism” — to project-based, field-driven planning : metrics are only meant to objectify a situation or support evaluation.

This is a complex issue, and the impacts of **urbanization** cannot be reduced to a simple number of hectares consumed.

Cerema addresses ZAN in a cross-cutting and multidisciplinary way, at different scales, while taking into account the diversity of public policies and territorial specificities.



Solutions and tools developped by Cerema to power local action

- Cerema's tools and outputs help address a minimum technical support need across territories and also provide a basis for local technical capacity.
- They offer a common framework for all, while allowing territories to build on their own data and tools.



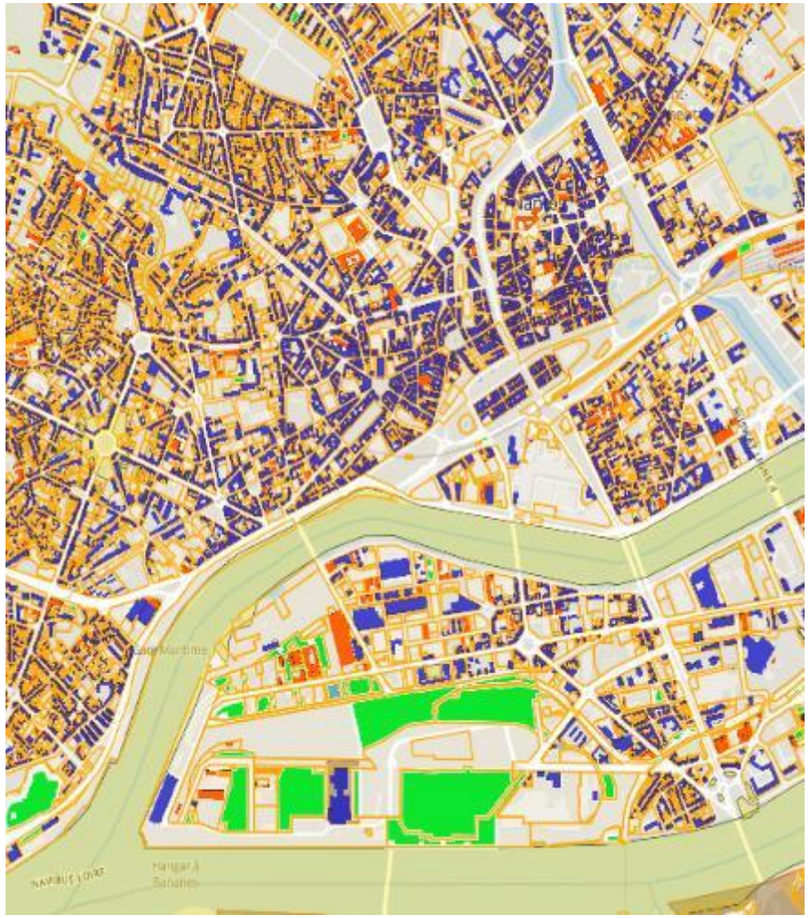
Knowledge	Observation and prospection		Action
Outils de l'aménagement Map planning tools	**Datafoncier** Gather reference data	**Urbansimul** Identify land use and real estate potentaials	**Zéro Logement Vacant** Mobilise unoccupied housing
Otelo Estimate housing demand	**Portail de l'artificialisation** Measure land-use consumption	**Cartofriches** Map brownfield sites	**Urbanvitaliz** Recycle brownfield sites CONSEIL INDIVIDUEL
Dynmark Evaluation land and real estate prices	**Muse** Evaluate soil quality METHODE EN COURS		**France Foncier +** Mobilize land to foster re-industrialization processes

Focus on UrbanSimul

A digital software for public land actors

Try an analysis and decision support tool for your land sobriety stratégies

- View land data on your own territory
- Asses land and real estate dynamics and build your land diagnostics
- Identify the potential for buiding land
- Analyse your urban development solutions



www.urbansimul.cerema.fr

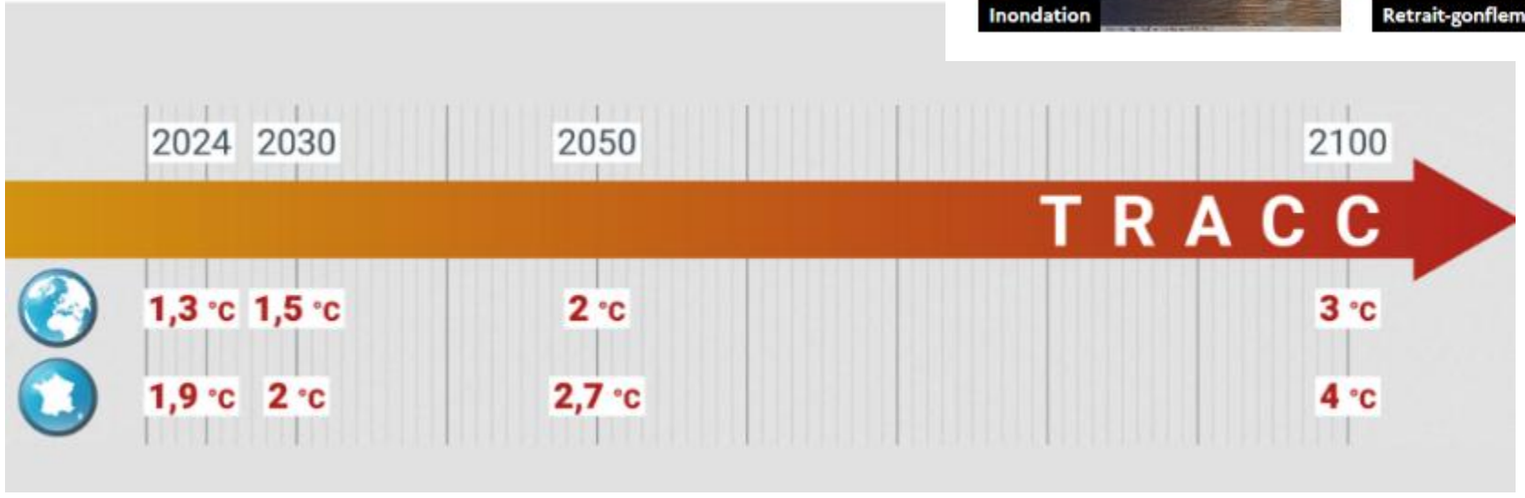
Integration of Climate Adaptation into planning management

IN FRANCE,
A REFERENCE WARMING TRAJECTORY FOR CLIMATE ADAPTATION

« France has to prepare to a temperature rise of +4°C »

« Climate Adaptation must become a reflex »





- **With a legal mandate**
- **Establishing a framework and a shared reference for all stakeholders**
- **As the foundation of the Third National Adaptation Plan**

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NATIONAL PROGRAM ON CLIMATE ADAPTATION
PROVIDING EXPERTISE TO 23 LOCAL AUTHORITIES

ADAPTATION + 4°C

Support and expertise to local authorities

- **Climate and risk vulnerability assessment + Climate adaptation pathways and action plan**
- In-depth thematic analysis for some of them (infrastructure, natural risk, water, public buildings)



Collective and peer-to-peer learning

- **Capacity building** : return of experience, creation of common tools
- **Organisation of webinars / face-to-face meetings**
- **Facilitation** via the **Expertises.Territoires** collaborative platform

Dissemination and communication

- Publications to have a leverage effect : methods, tools, best practices and key learnings

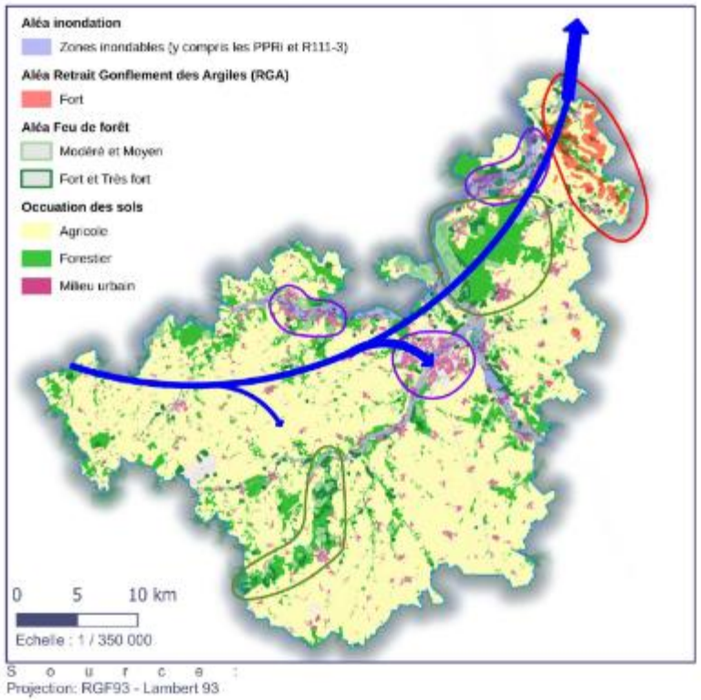


NATIONAL PROGRAM ON CLIMATE ADAPTATION
PROVIDING EXPERTISE TO 23 LOCAL AUTHORITIES

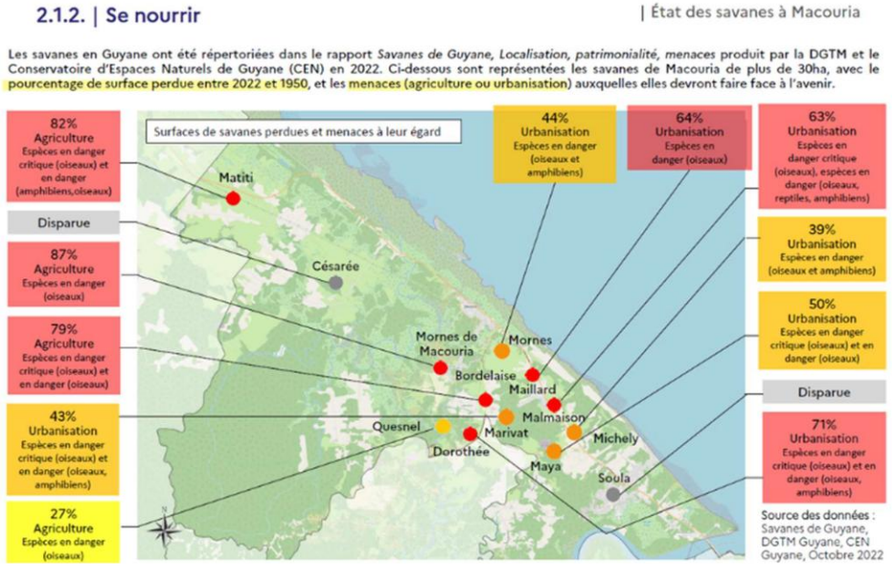
ADAPTATION + 4°C

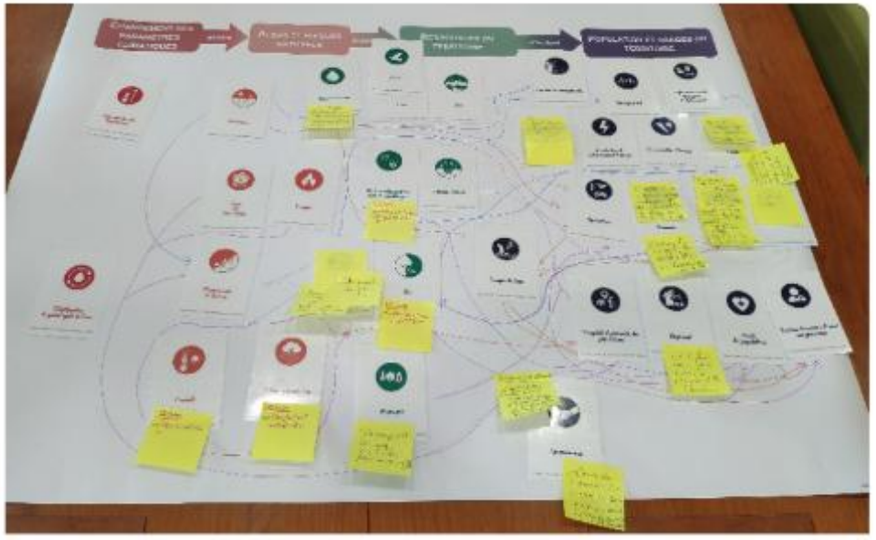
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ADAPTATION HUBS
SUPPORTING COORDINATED CLIMATE RESILIENCE

Adaptation Hubs

MULTI-LEVEL GOVERNANCE

National Adaptation Hubs (NAHs)

across 27 Member States



- A governance mechanism, not a technical centre.
- Connects institutions, supports regions and municipalities, and ensures long-term continuity.
- Flexible and tailored to each Member State - no single model.
- Bridges EU-level knowledge and national/local implementation.
- A place for dialogue and trust between stakeholders



ADAPTATION HUBS
SUPPORTING COORDINATED CLIMATE RESILIENCE

Adaptation Hubs

MULTI-LEVEL GOVERNANCE

FOR LOCAL AUTHORITIES

Raising Awareness

Advising

Sharing

ENHANCE EXISTING MULTI-PARTNERS INITIATIVES

Adaptation Resource Centre

A knowledge centre with reliable data and information covering all aspects of adaptation to raise awareness, promote adaptation solutions and provide sources of inspiration

+

French Adaptation Mission

A joint initiative of national public agencies providing local authorities with guidance on the resources, tools, methods and services available to them

Dissemination

Communication and speeches

Knowledge capitalization

Lessons learnt

Twinning

Inspiring and drawing inspiration from other EU countries

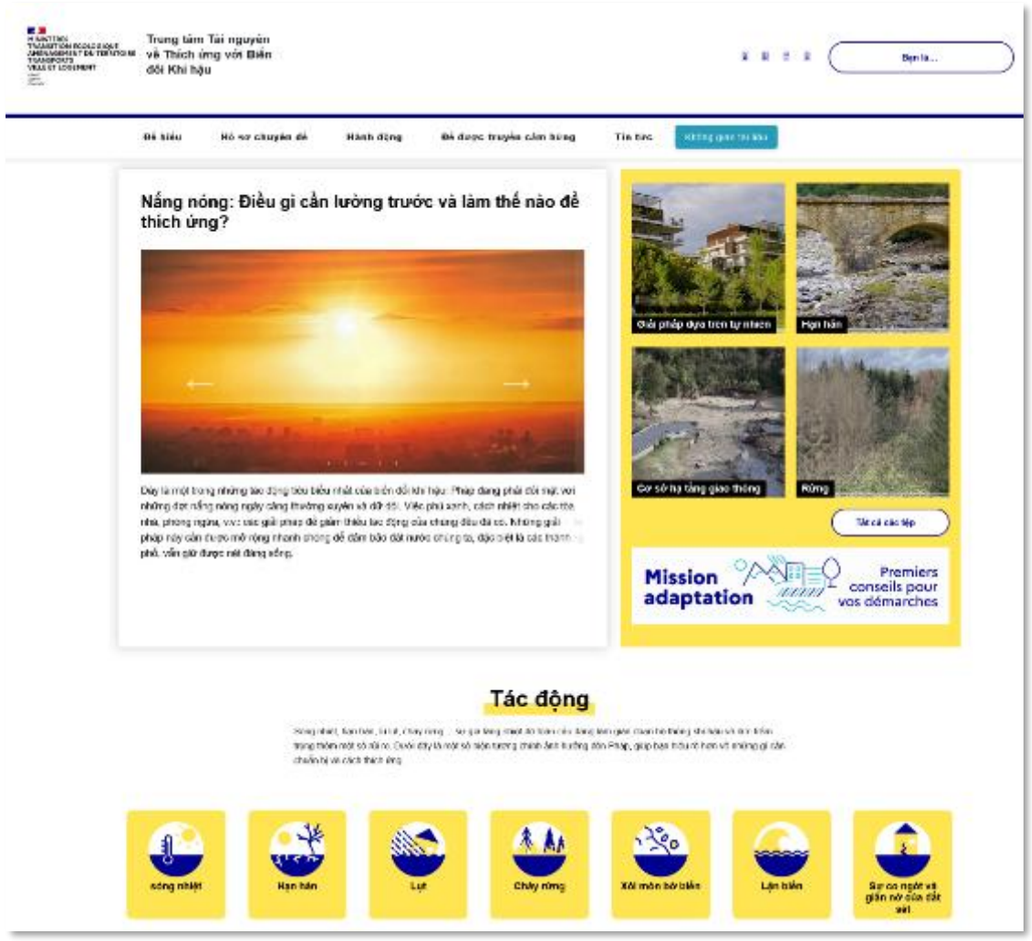


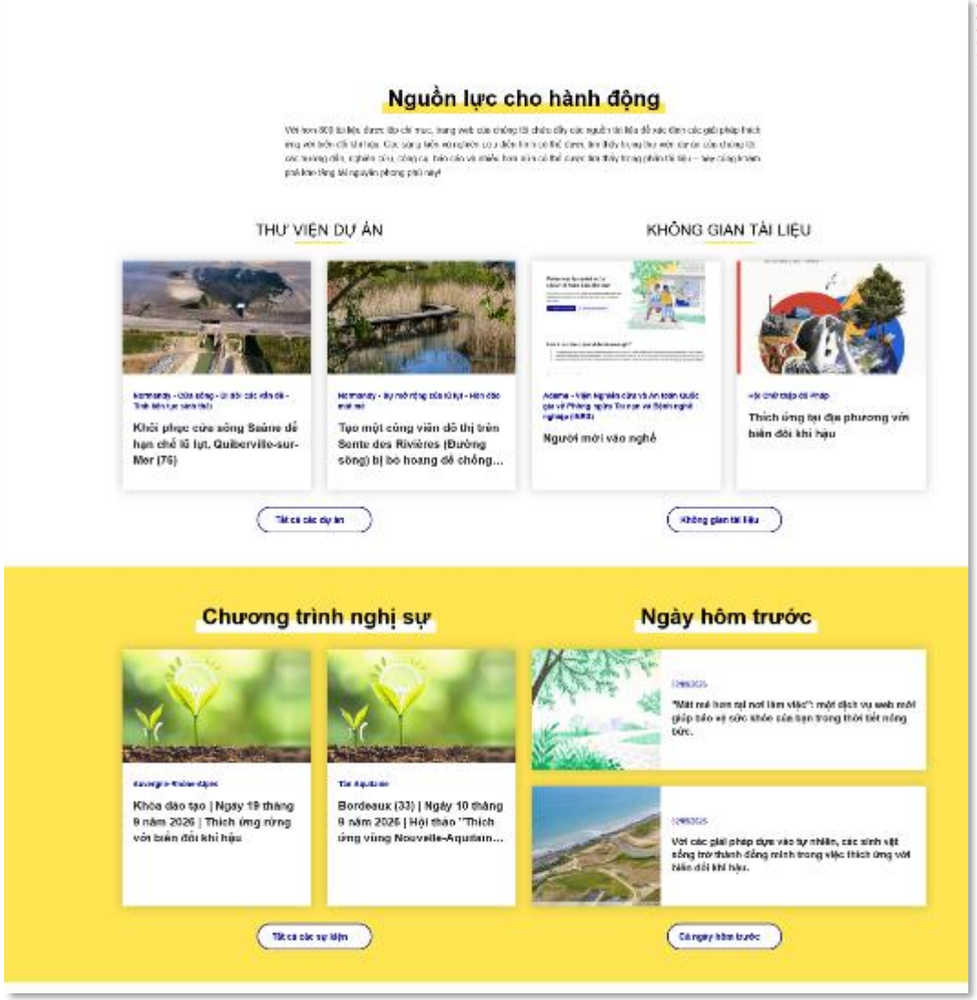
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RESOURCE CENTRE FOR CLIMATE ADAPTATION







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Risks, Water and Seas technical division:

Specific contributions to coastal planning and integration of risk management into planning

STEPS and *Uncertainties*

Physical processes

Climate change, extreme events, natural variability,



STEPS and *Uncertainties*



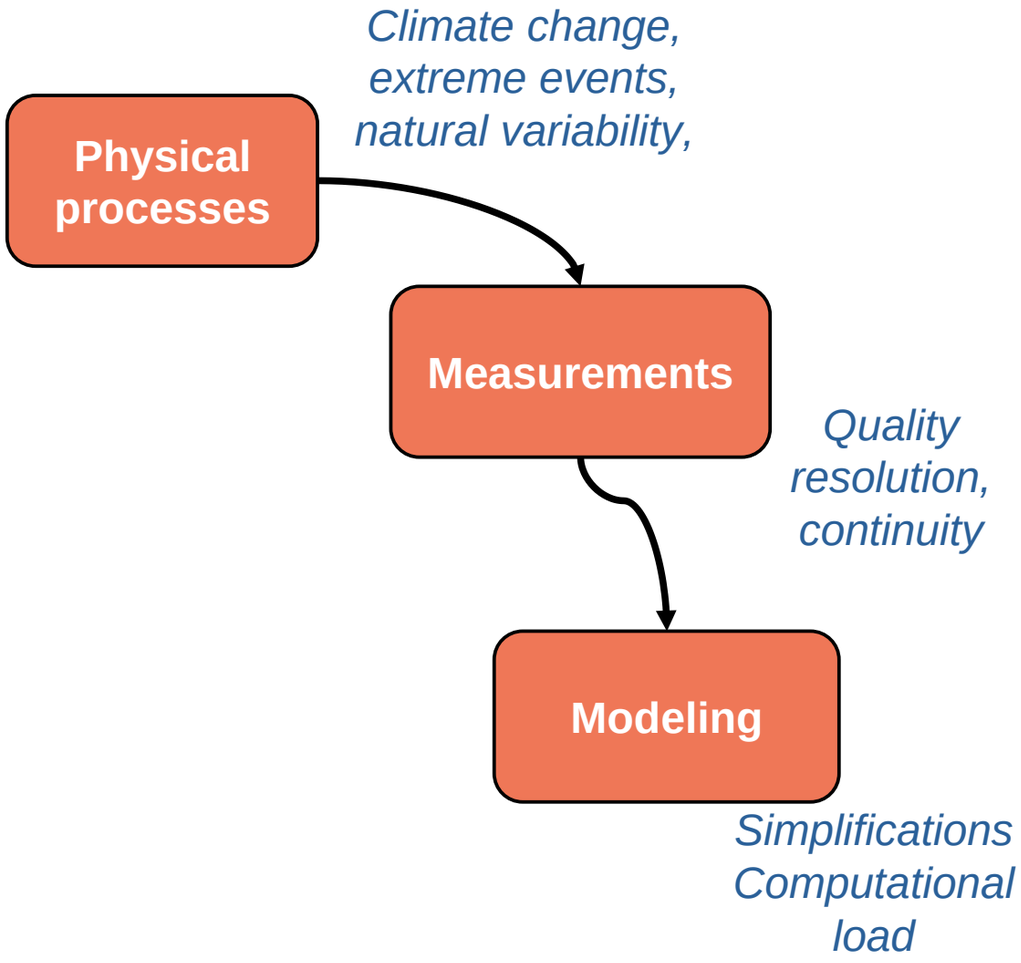
Climate change, extreme events, natural variability,

Physical processes → **Measurements**

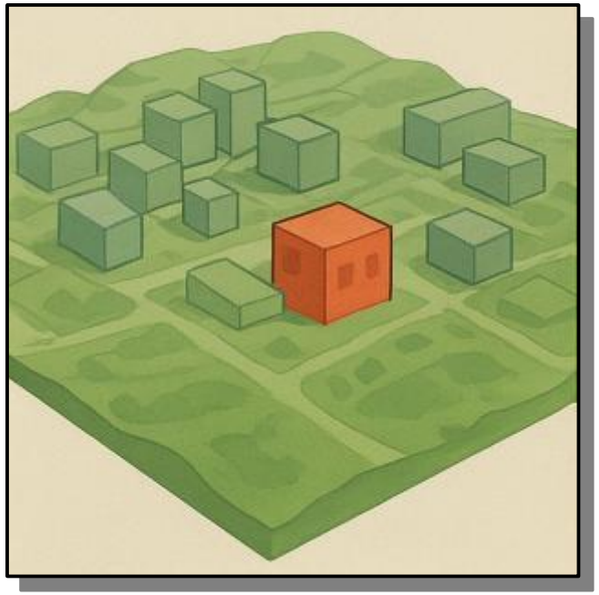
Quality resolution, continuity

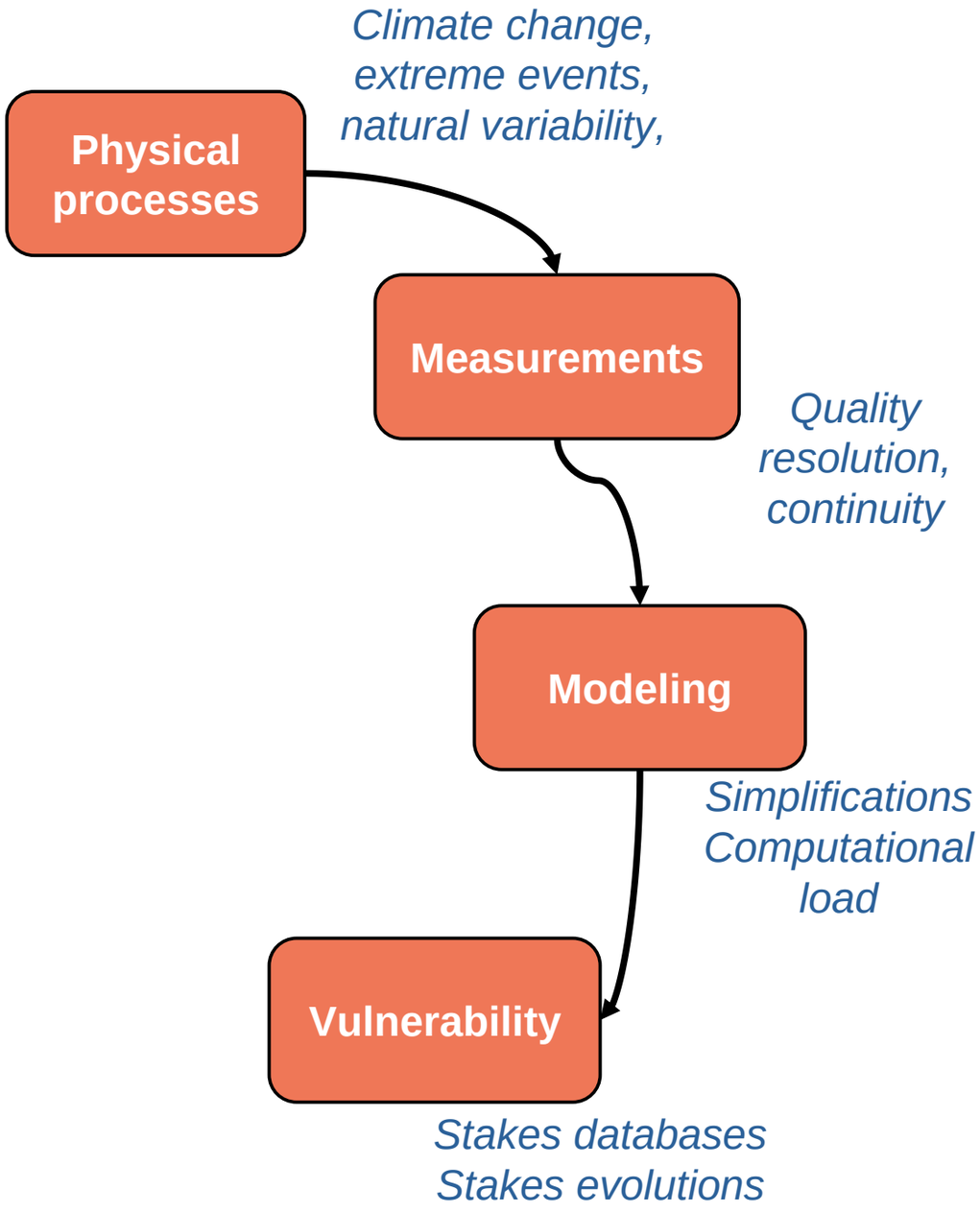
STEPS and *Uncertainties*





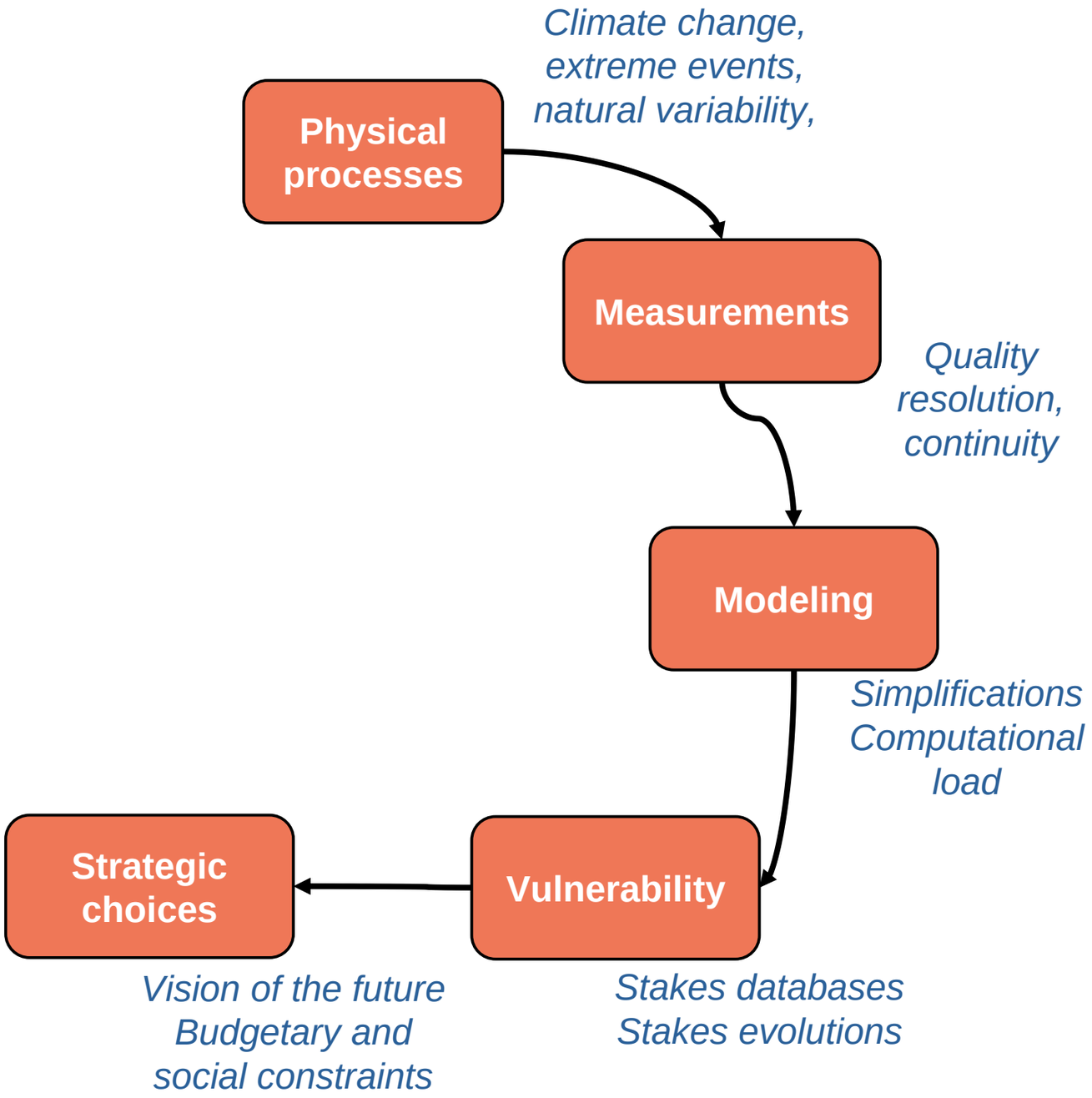
STEPS and *Uncertainties*





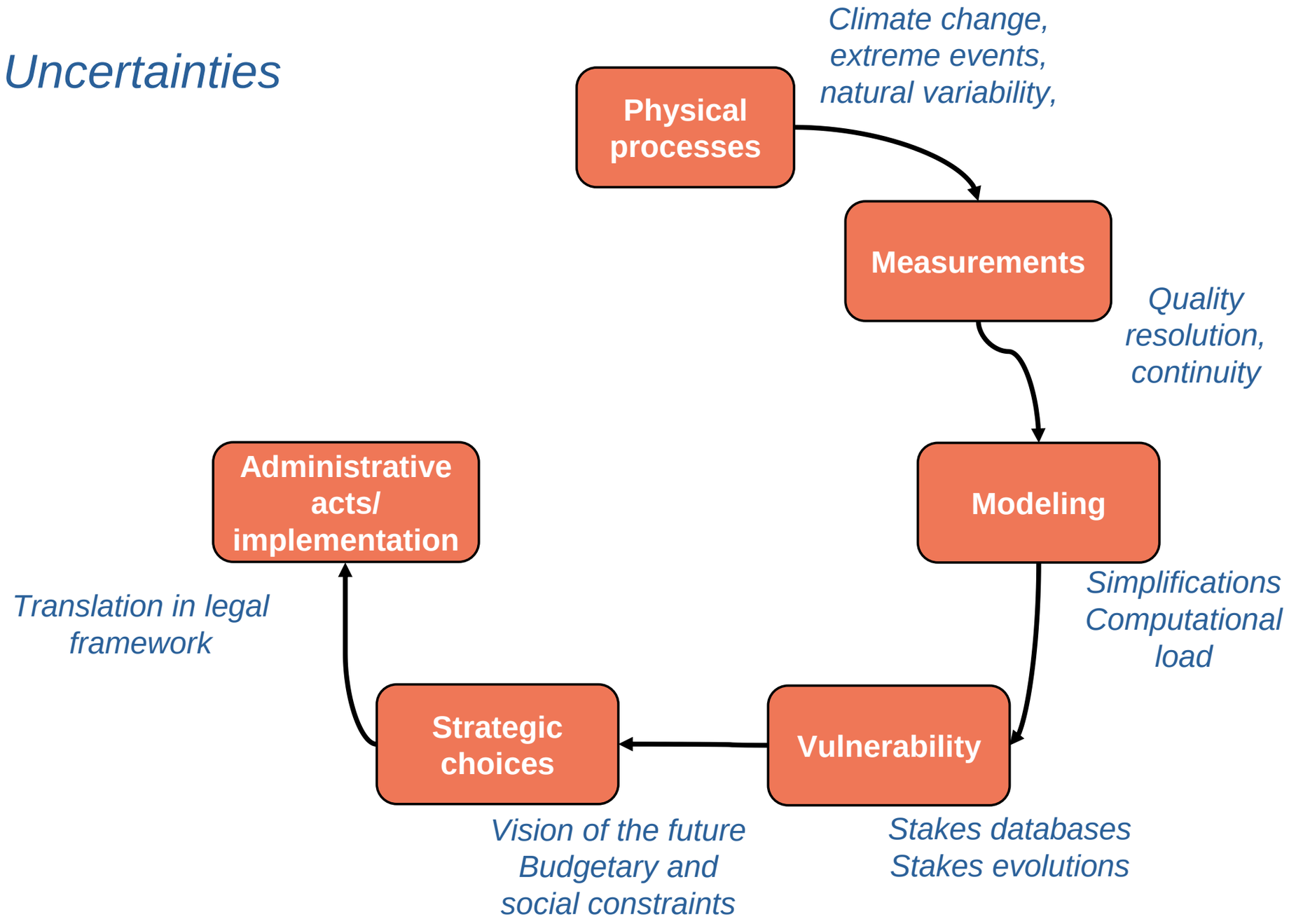
STEPS and *Uncertainties*





STEPS and *Uncertainties*





STEPS and *Uncertainties*



Climate change, extreme events, natural variability,

Physical processes

Measurements

Quality resolution, continuity

Modeling

Simplifications Computational load

Vulnerability

Stakes databases Stakes evolutions

Strategic choices

Vision of the future Budgetary and social constraints

Administrative acts/ implementation

Translation in legal framework

Compliance

Unsufficient funds violation of regulations Informal settlements

STEPS and *Uncertainties*

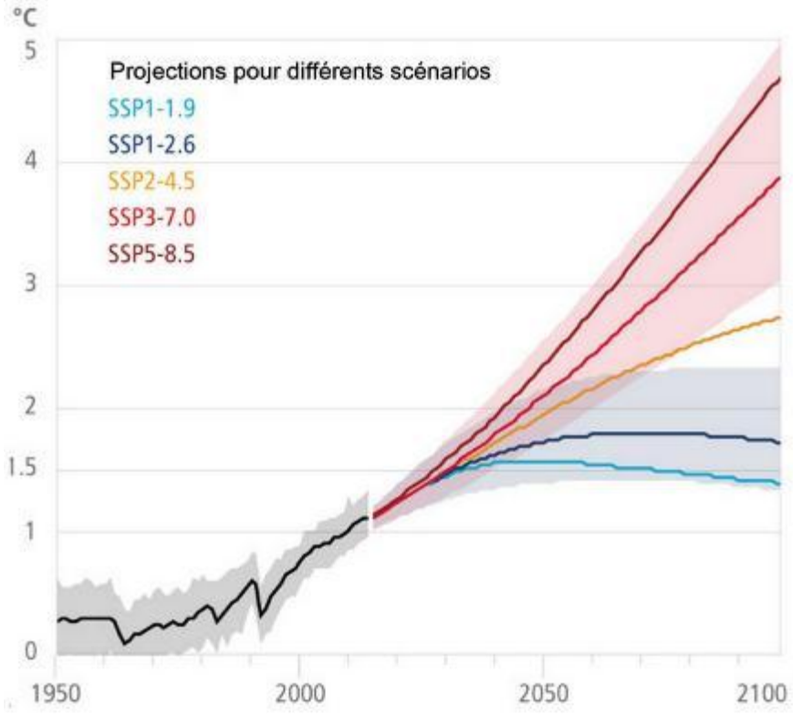
Physical processes

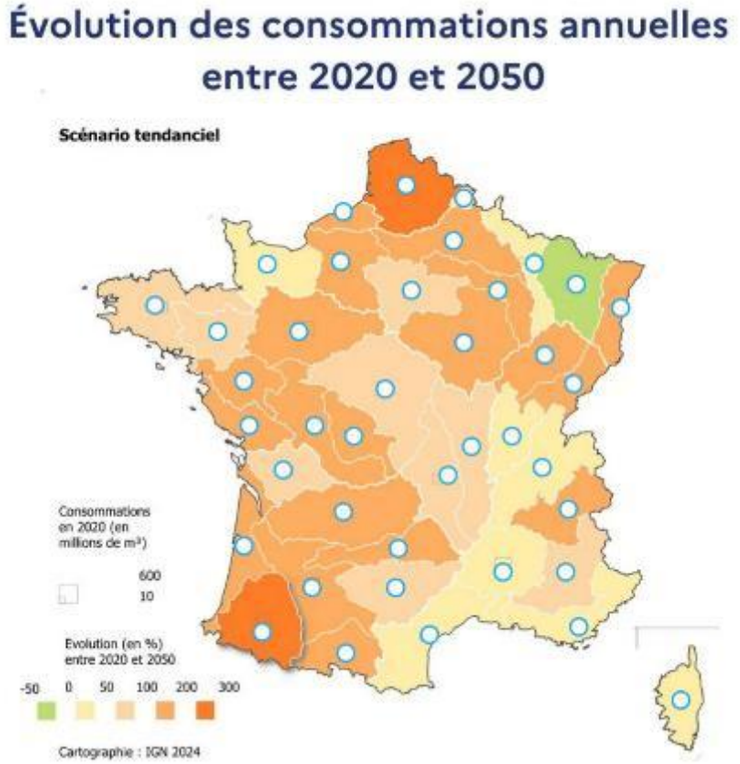
Climate change, extreme events, natural variability,

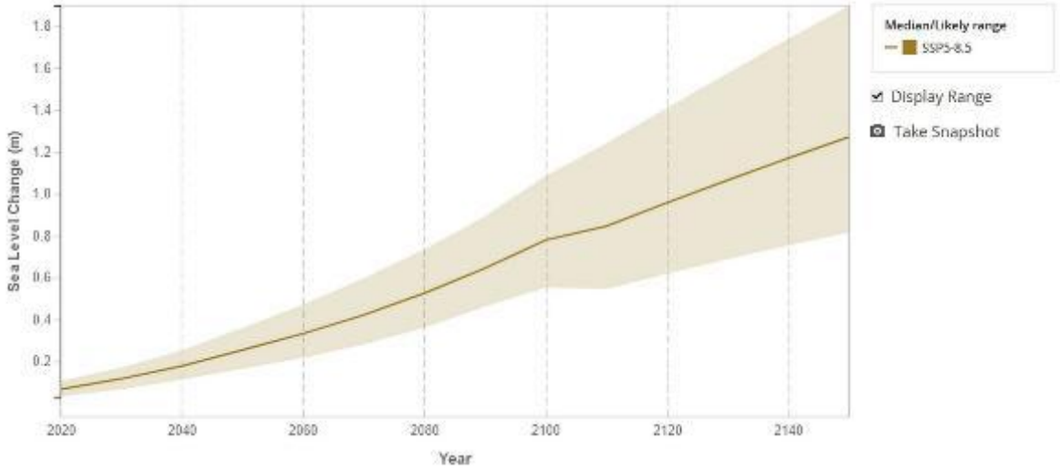


Climate change

- 👉 Sea level rise
- 👉 temperature rise
- 👉 Water management







STEPS and *Uncertainties*



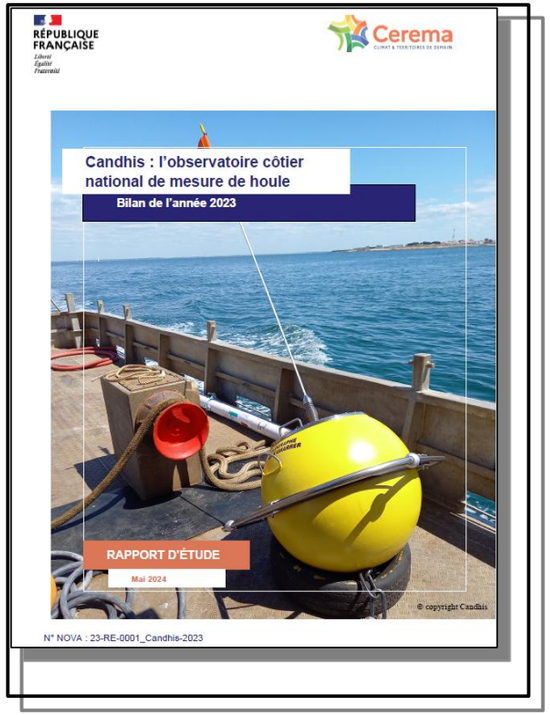
Climate change, extreme events, natural variability,

Physical processes → **Measurements**

Quality resolution, continuity

Wave measurements buoys

- ☑ Network
- ☑ Buoys maintenance & communication
- ☑ Data processing
- ☑ Data platform
- ☑ Studies

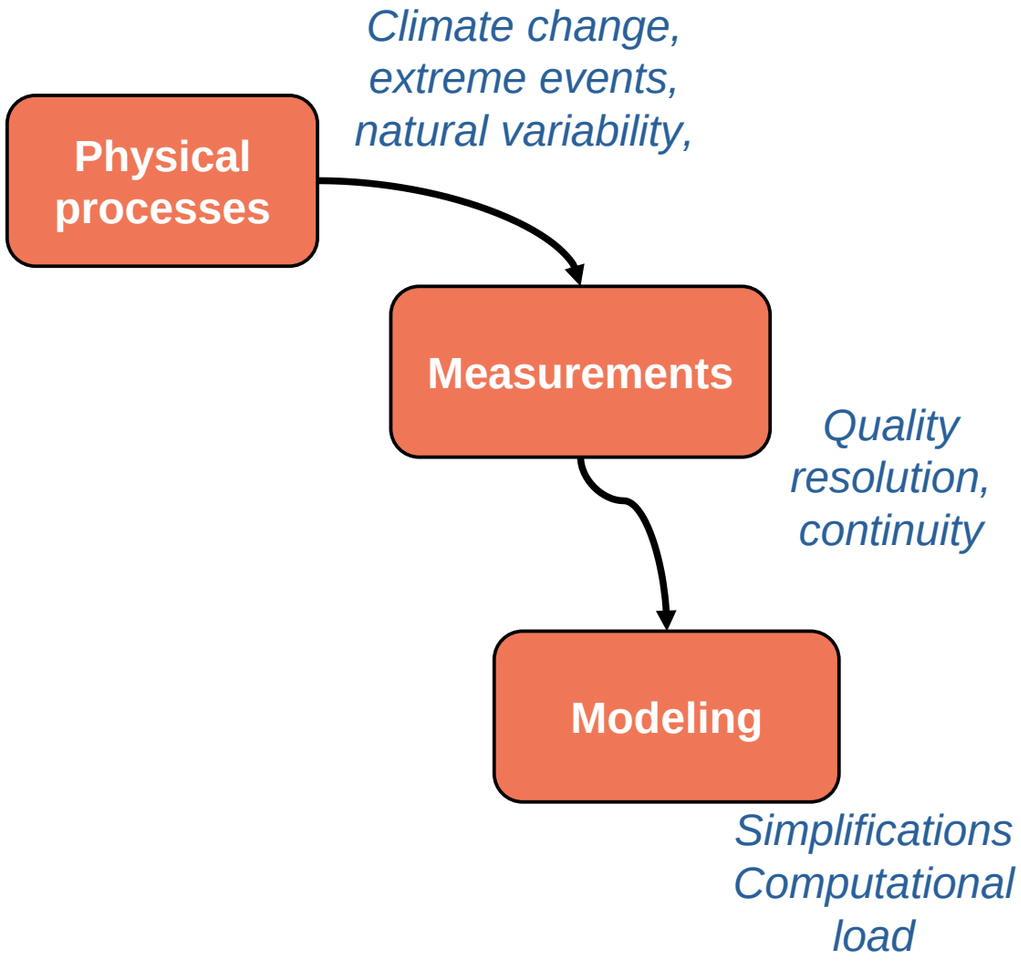




https://candhis.cerema.fr/

STEPS and *Uncertainties*

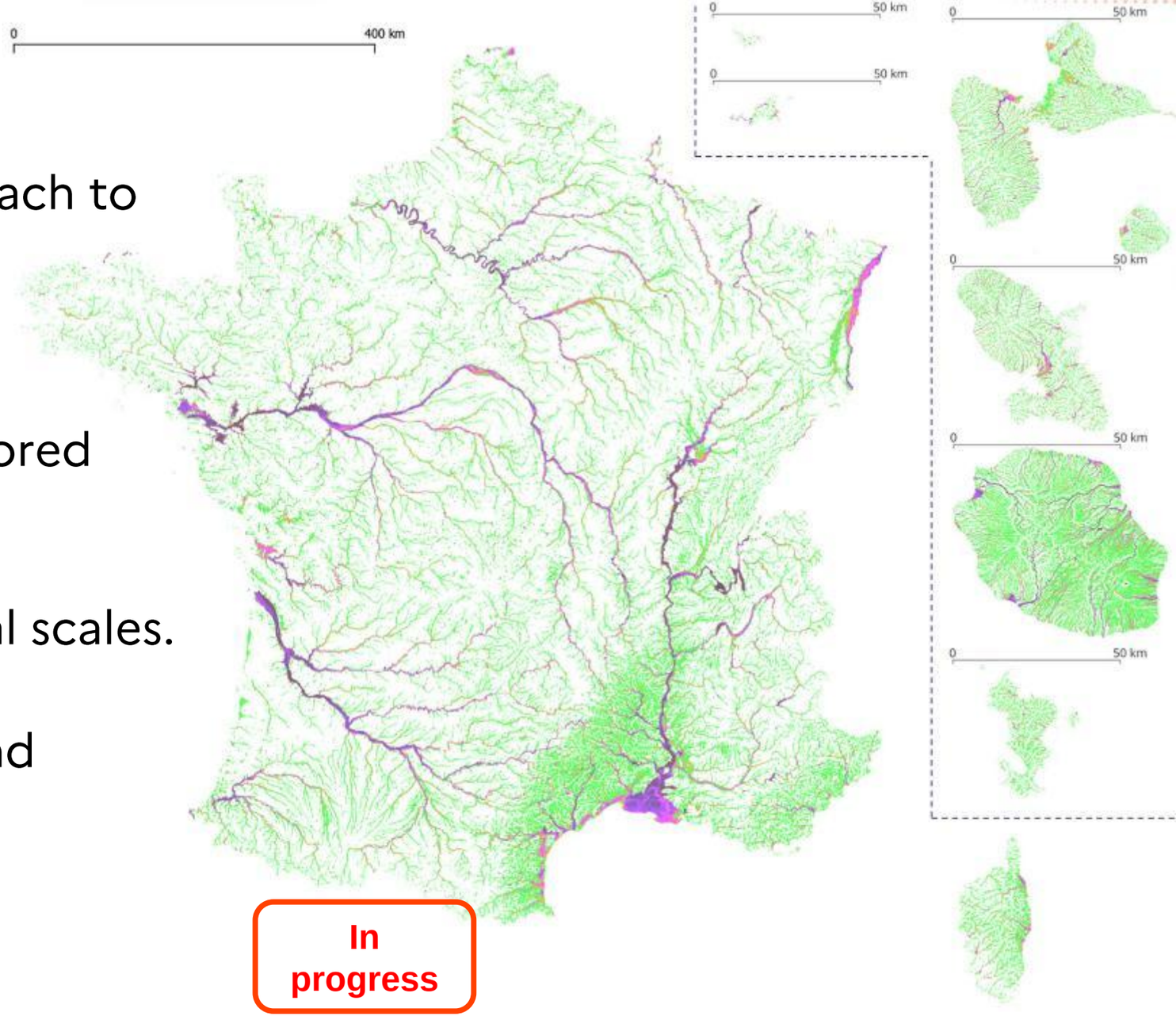




Example 1/3 - Flood map

- Cartino2D: An Innovative Approach to the Telemac2D Hydraulic Model
- Key Benefits:

  - **Efficiency & Precision**: Fast, tailored simulations for local territories.
  - **Scalability**: Flexible approach, adaptable from local to national scales.
  - **Real-World Impact**: Supports emergency response analysis and extreme event modeling.

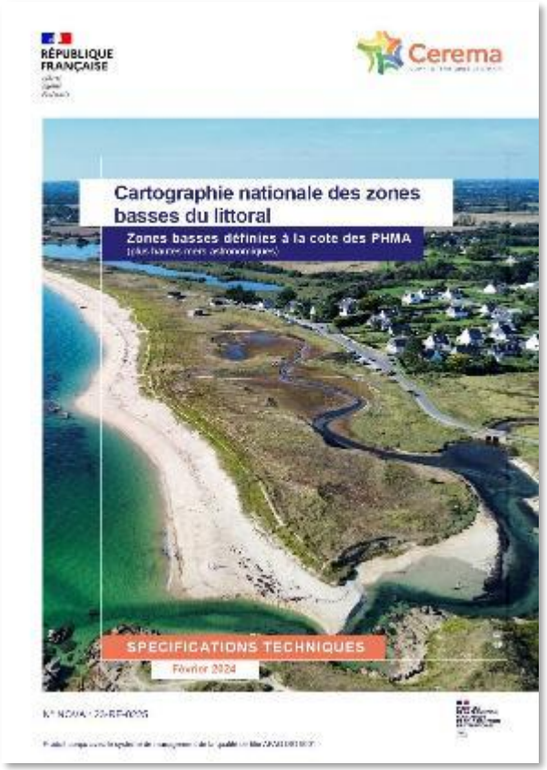


In progress

Example 2/3 - Marine flooding - low lying lands





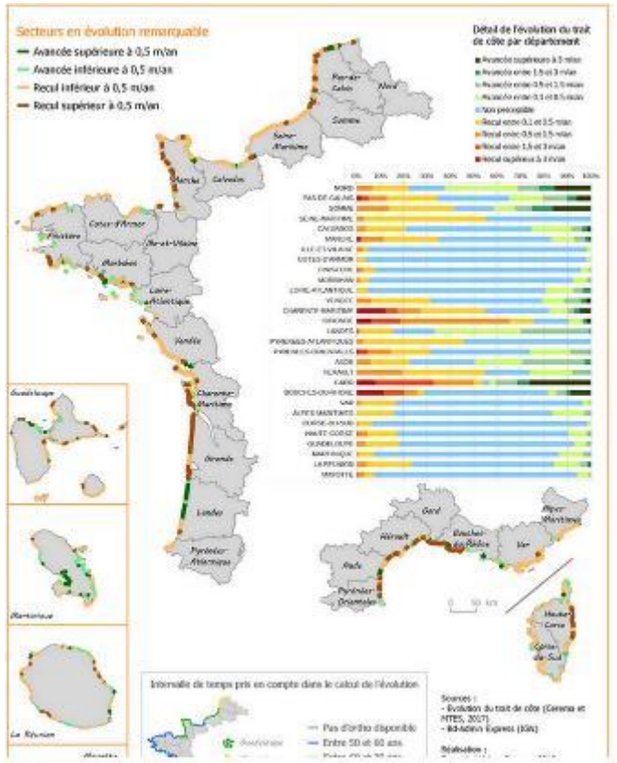


Example 3/3 - Coastal erosion

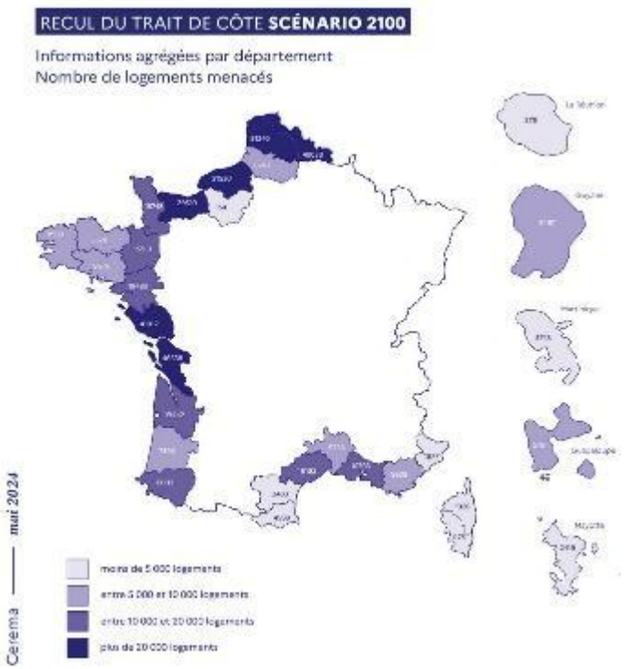
Sedimentology volumes



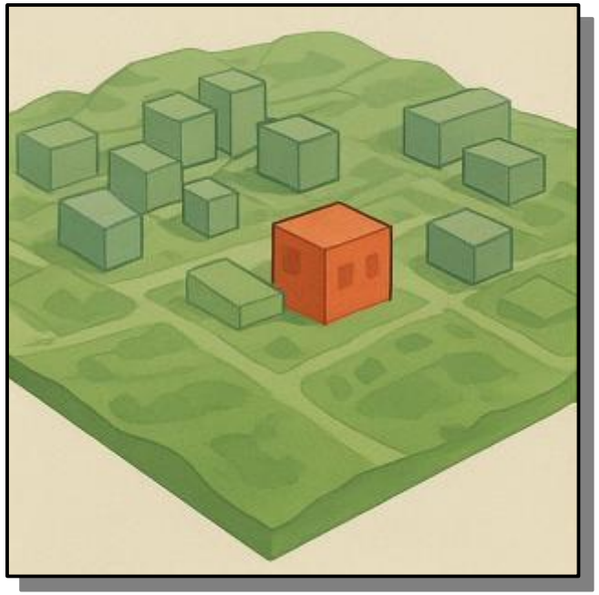
National indicator

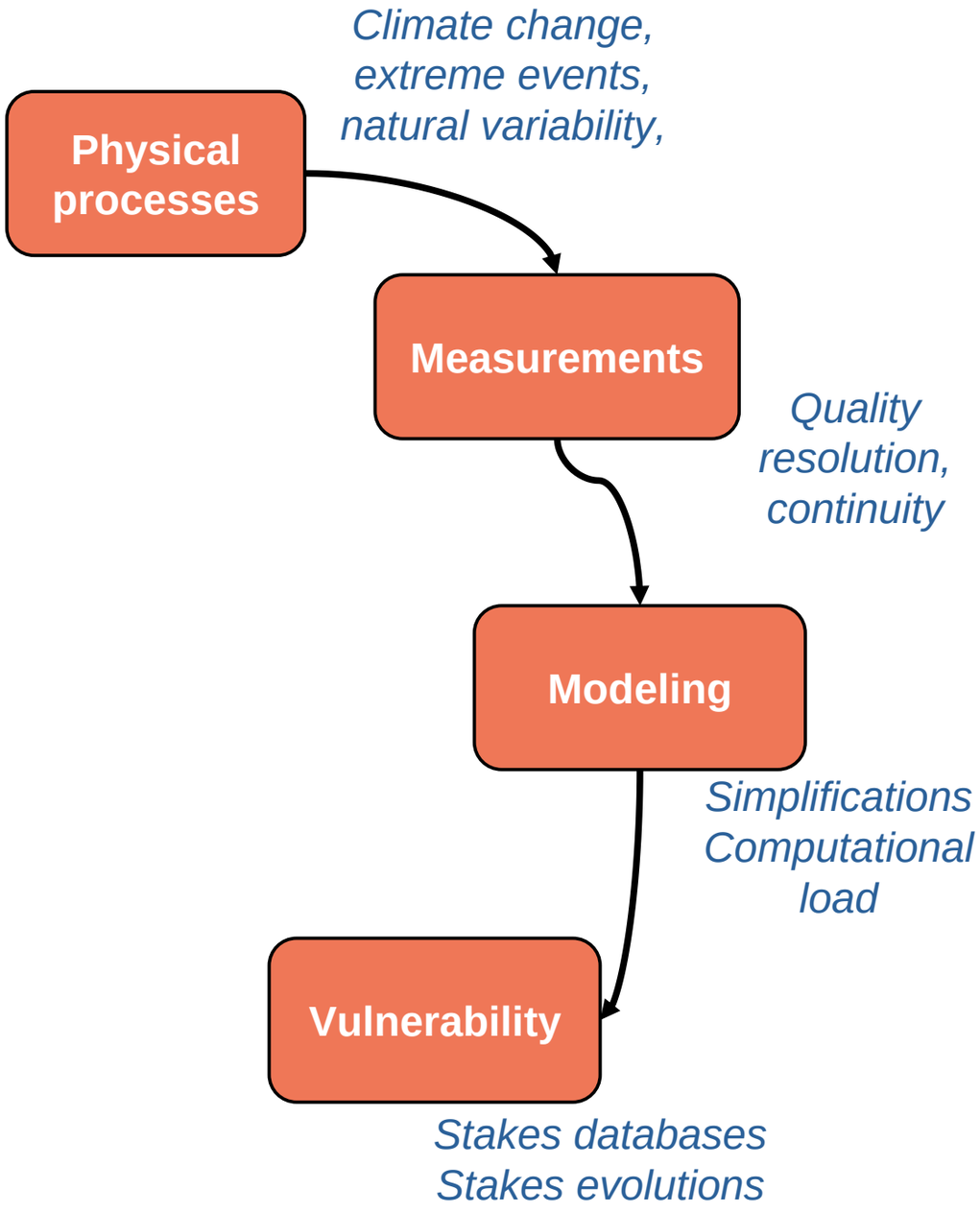


Projections and affected stakes



STEPS and *Uncertainties*

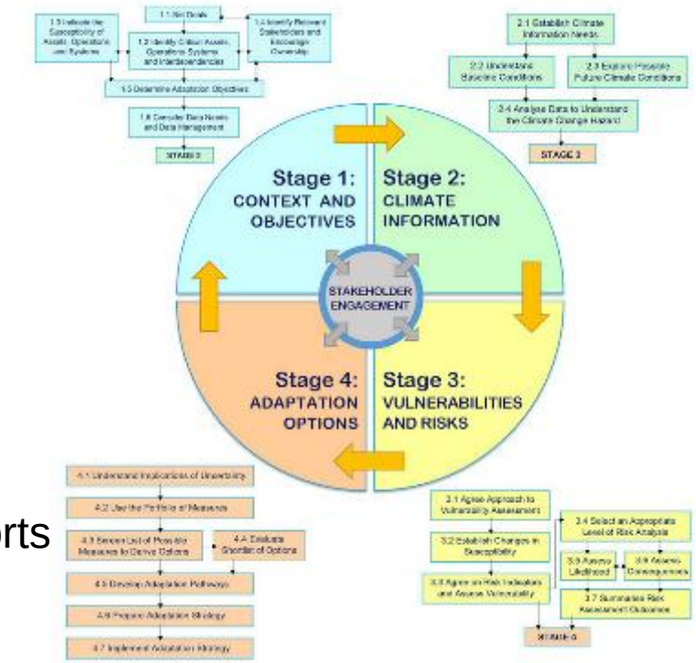


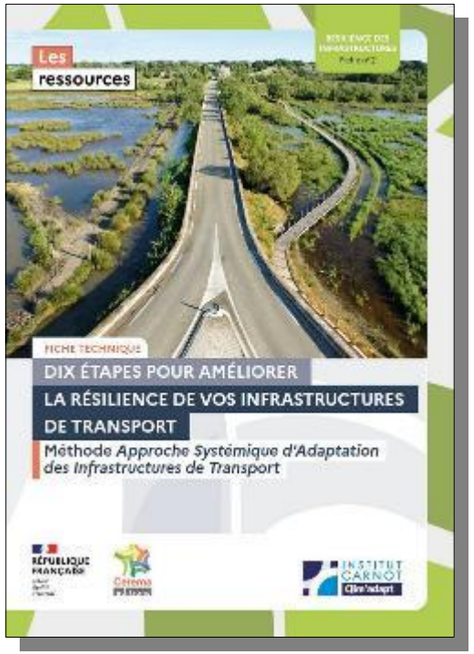


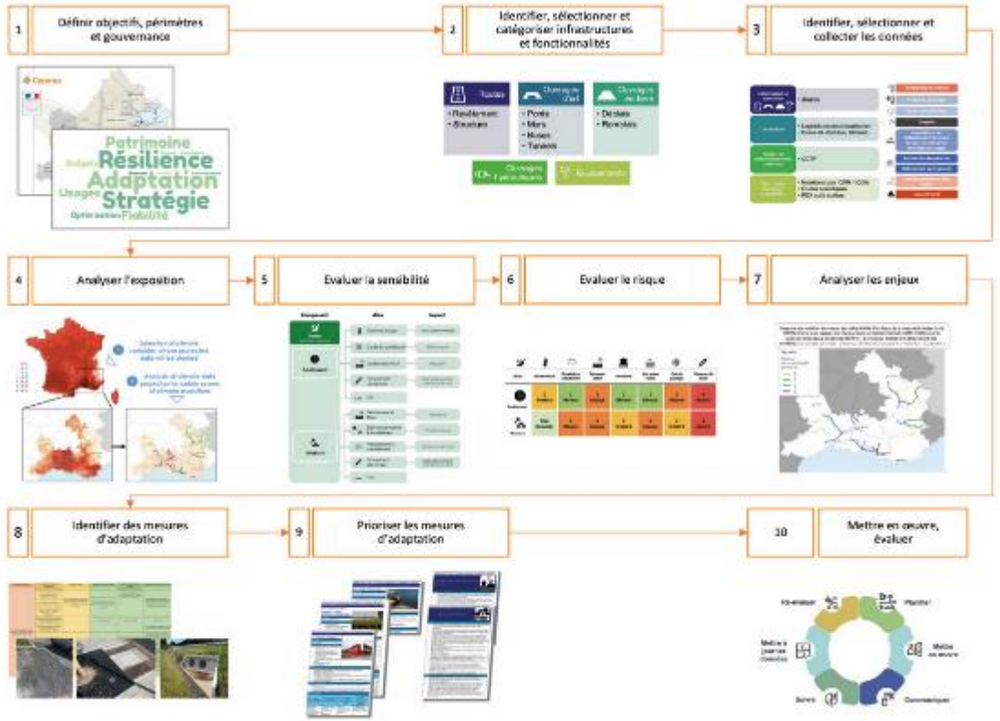
Infrastructures

- [x] Assessment methods
- [x] Hazards studies for levees

Pianc
for ports



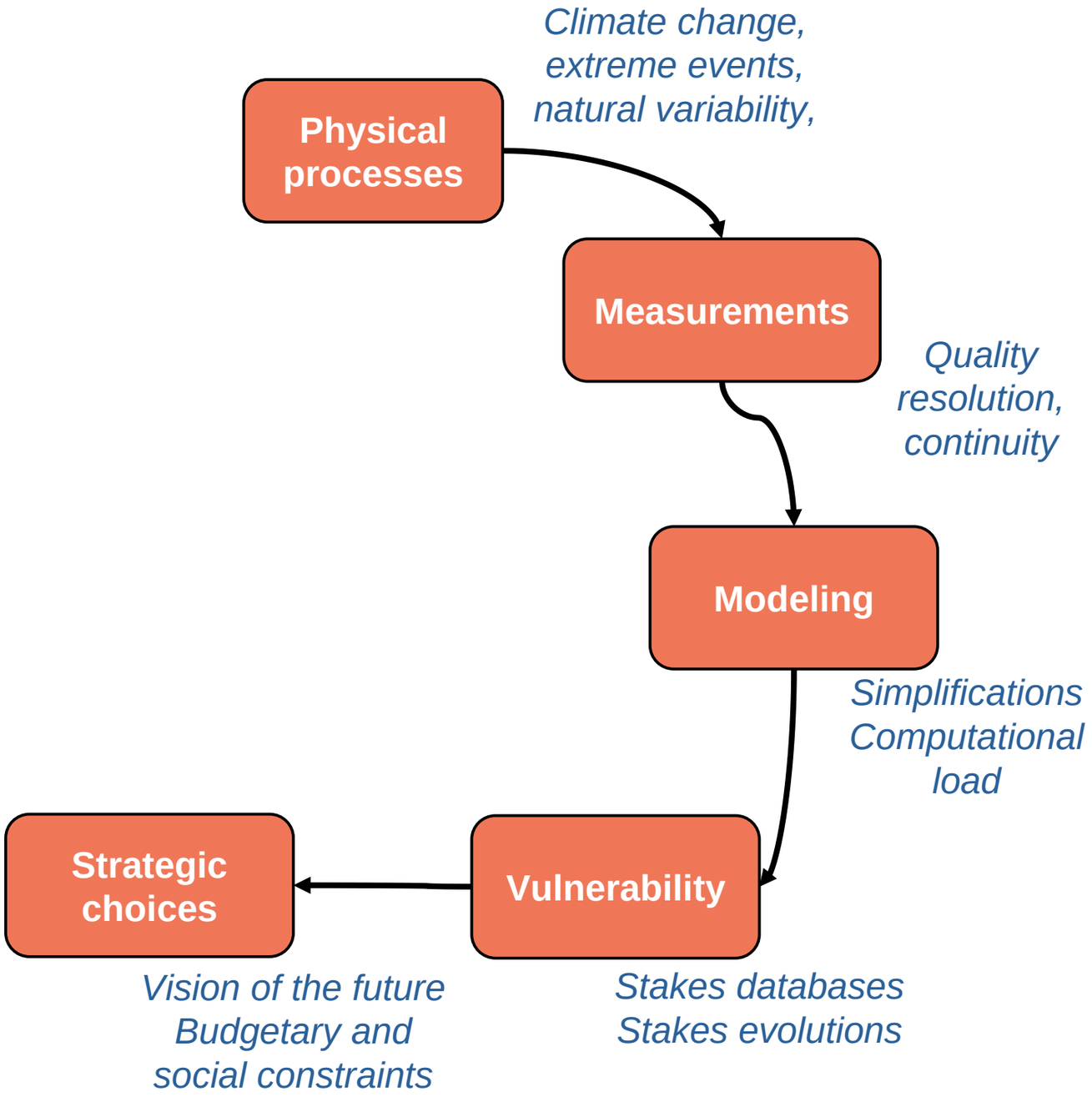




(Source : Cerema, réalisé à partir de plusieurs sources dont Carbone 4, RTL, Setec)

STEPS and *Uncertainties*





Local areas - water basins/ legal framework & tools

- ☑ Risk management plans
- ☑ Vulnerability assessment
- ☑ Local strategies
- ☑ Operational action plans



AgiRisk

Par le Cerema



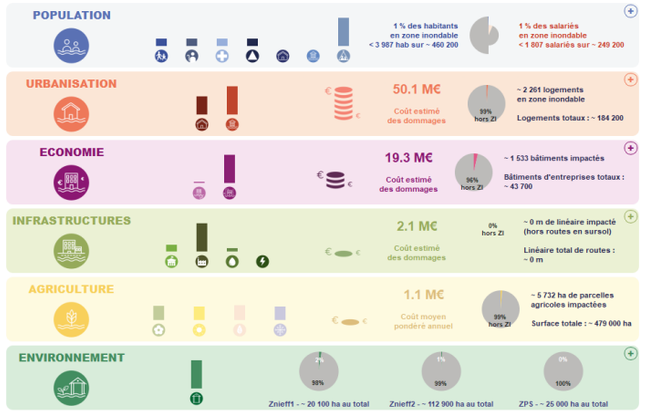
Focus on Agirisk toolkit

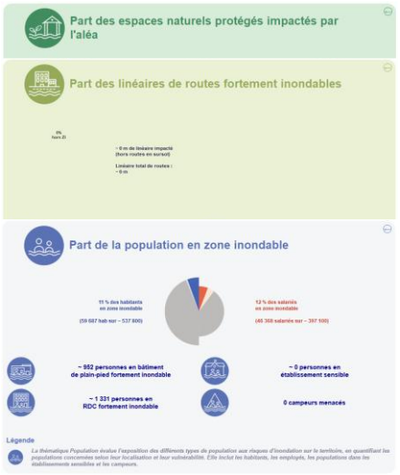
Relevant geographic Area

+

Hazards And stakes

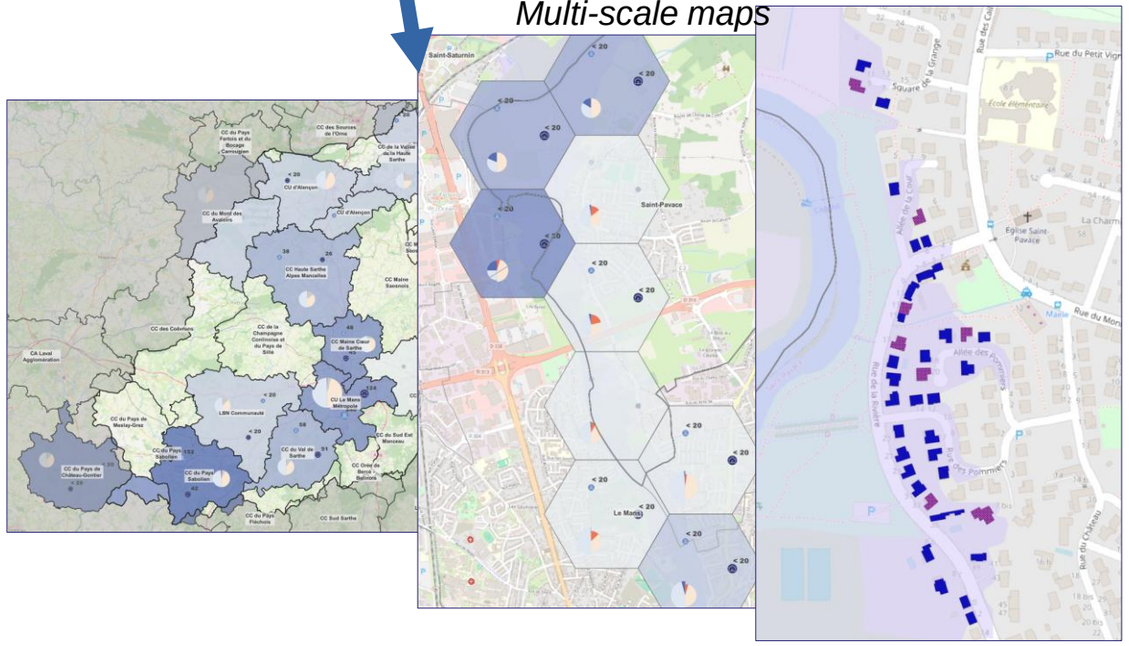




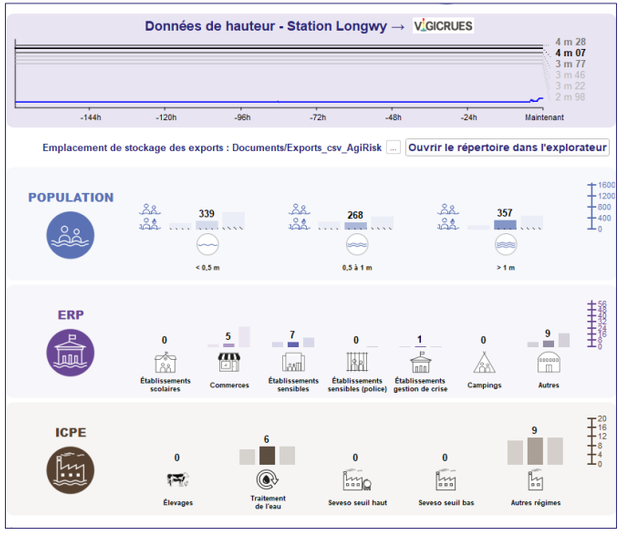


Dashboards

Multi-scale maps

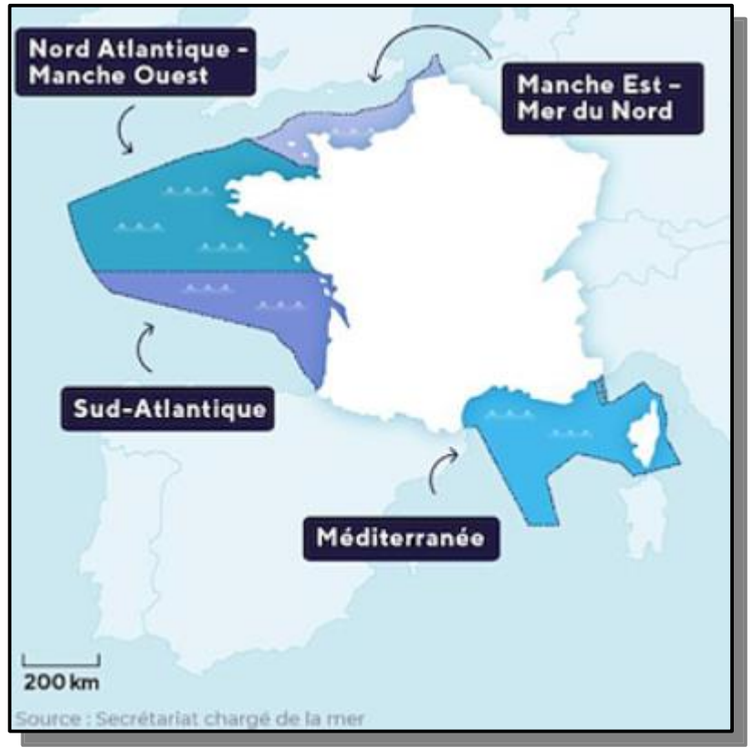


Emergency response



Sea and Coastal Areas

- 👉 Maritime Spatial Planning (MSP)
- 👉 Coastal erosion
- 👉 Nature-based Solutions (NbS)
- 👉 Marine Renewable Energies







Water management



👉 **Strateau**

☑ tool supporting territories in managing water scarcity and competing uses

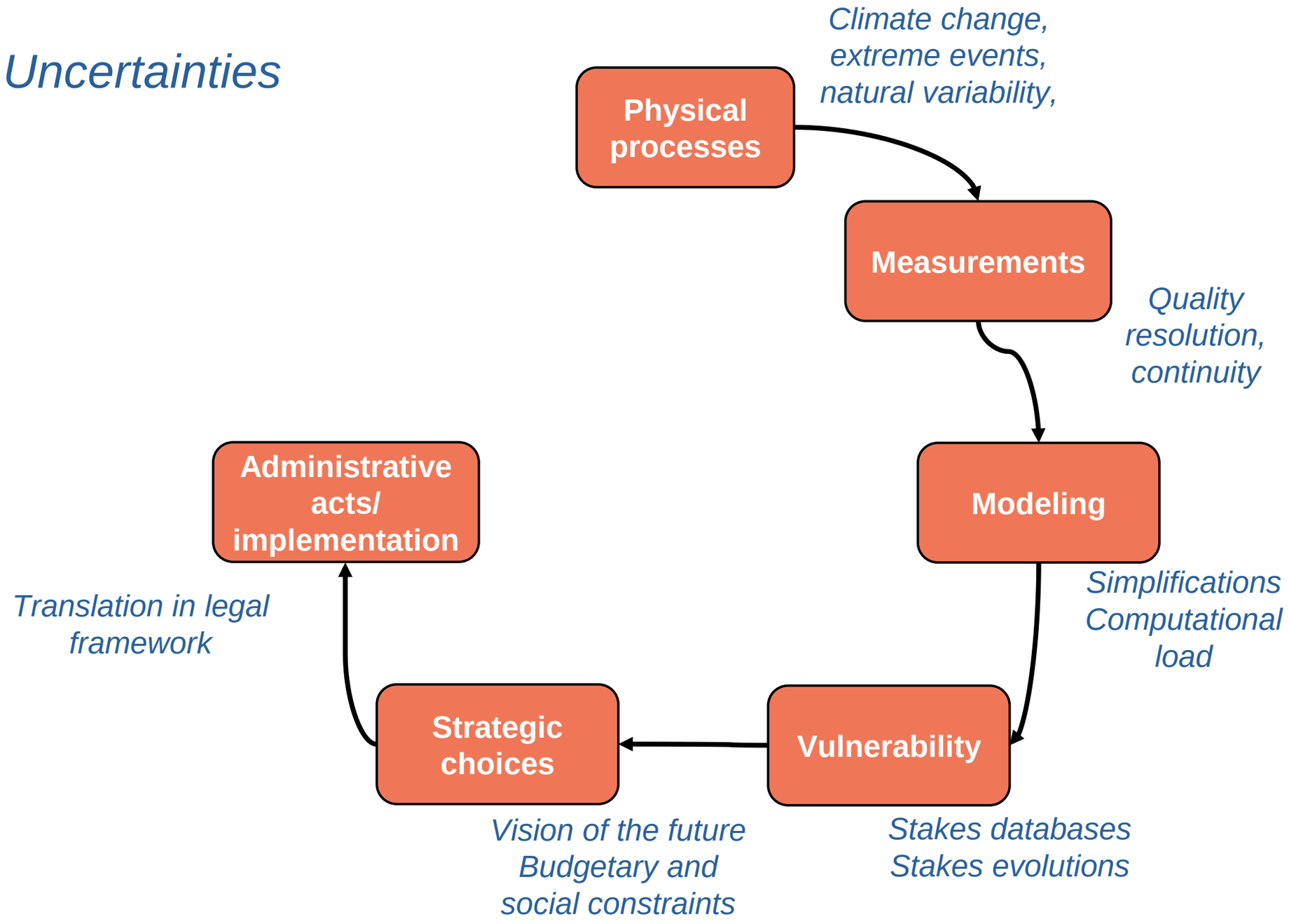
👉 **Scoréeau**

☑ tool to assess water and sanitation resilience with improvement pathways

ScoRé'Eau

STEPS and *Uncertainties*





Flood risks

☑ Support to forecasting and modeling systems

☑ scientific and technical support for the safety of hydraulic structures (including levees/ port structures/ bridges)

☑ Provide authorities and communities tools and advice for flood risks knowledge and management







STEPS and *Uncertainties*



Climate change, extreme events, natural variability,

Physical processes

Measurements

Quality resolution, continuity

Modeling

Simplifications Computational load

Vulnerability

Stakes databases Stakes evolutions

Strategic choices

Vision of the future Budgetary and social constraints

Administrative acts/ implementation

Translation in legal framework

Compliance

Unsufficient funds violation of regulations Informal settlements

Crisis Management and Resilience



👉 Help to raise awareness

👉 Supports crisis management at all stages :

- ☑ Training and simulation exercises
- ☑ Crisis planning and coordination
- ☑ Post-event feedback and continuous improvement





Geo - platforms

- Data visualization
- Usefull information
- Services and applications



« The coastline of my city »

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Liberté
Égalité
Fraternité

GéoLittoral
Le portail de la mer et du littoral

https://www.geolittoral.developpement-durable.gouv.fr/

brgm

RÉPUBLIQUE FRANÇAISE
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GÉORISQUES
Mieux connaître les risques sur le territoire

https://www.georisques.gouv.fr/

Working across multiple scales

- ☑ Invested into European Projects
- ☑ French Government agency
- ☑ Supporting local communities



Coastal trails



Coastal water reuse

Example of nationwide programs

Helping to implement local projects



Coastal landfills

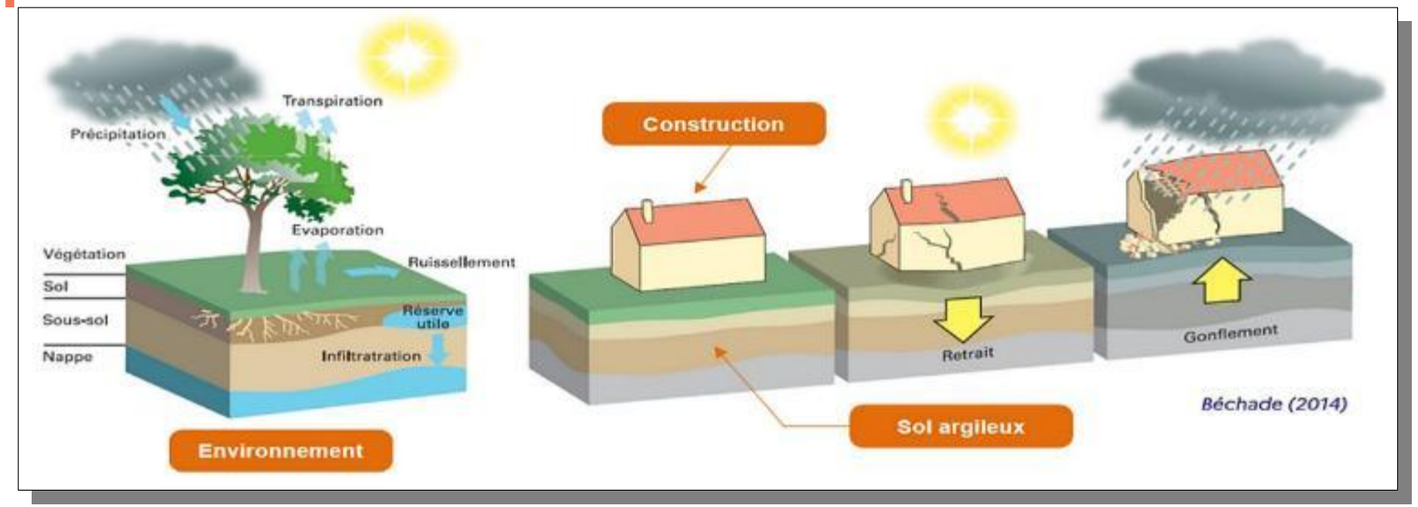


Green marinas

Example of integrative approaches

🧐Expertise provided on different topics :

- Landslides
- Rocksfall
- Expansive clay soils
- Underground cavities

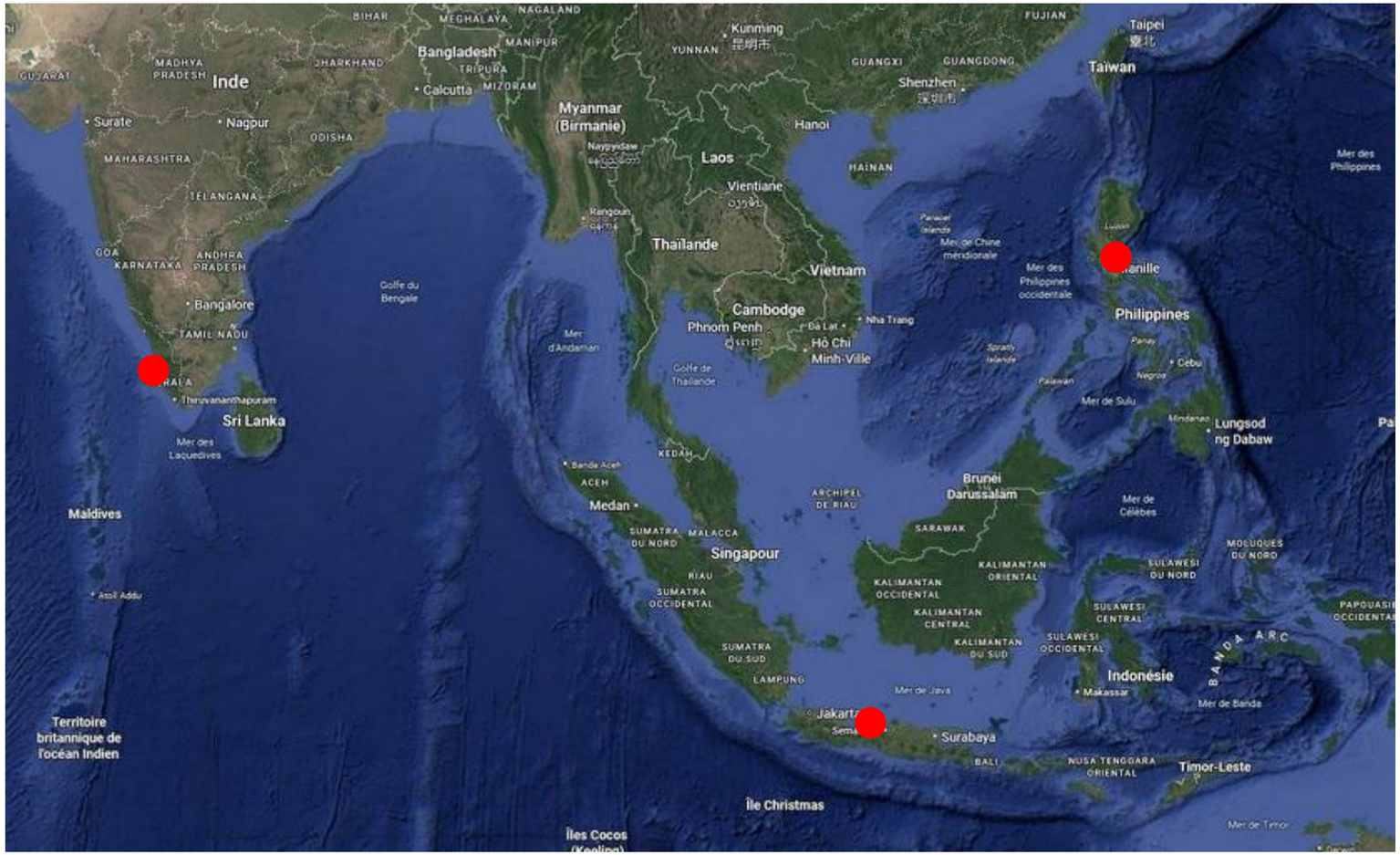


👉Surveillance and monitoring tools
👉Models
👉Mapping
👉Field expertise
👉Mitigation



Example of National and International projects

- France overseas territories
- Flood risks in Philippines
- Coastal erosion in Morocco
- Subsidence in Indonesia
- Risks monitoring in West Africa (WAKA project)
- India/ Kerala





Cerema – Vietnam: ongoing and emerging collaborations



👉 **Climate change adaptation & urban resilience** collaboration with the French Development Agency (AFD) and Vietnamese authorities through a series of seminars on integrating natural risks and climate change into urban planning (2023).



👉 **Natural hazards & coastal risks**
exchanges and knowledge sharing on floods, typhoons, coastal erosion and compound flood risks, including in the Mekong Delta.

👉 **Hydro-sedimentary modelling**
ongoing contacts between research teams on modelling processes at the land–sea interface, with a focus on sediment dynamics and interactions between rivers, estuaries and coastal areas.



👉 **Towards further cooperation**
Continued dialogue with Vietnamese authorities and research teams to develop joint approaches and projects on climate adaptation, water and coastal resilience.

Discussion and conclusion

Supporting questions to kick-off the discussion

- Are there aspects of the presentation that you would like to discuss more in details?
- Which tools and processes are already in place to support the management of planning in Vietnam? And are there areas where needs have been identified?
- Are there challenges of the ongoing reform of the Vietnamese planning management system echo the topics, tools and approaches presented?

Thank you!

Contacts :

Territories and Cities technical division: virginie.lasserre@cerema.fr / magali.di-salvo@cerema.fr / berangere.mercier@cerema.fr

Risks, Waters and Seas technical division: Nicolas.auger@cerema.fr / yann.deniaud@cerema.fr

Europe and International department: karim.selouane@cerema.fr / camille.ajrouche@cerema.fr / louis.thiercelin@cerema.fr

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