



Aims & Objectives

➔ To study natural risks and disasters and assess how they affect regional vulnerability.

- 1 The unit's geography research encompasses risk assessment and management (from hazards to management method analysis using GIS-based scenarios).
- 2 The unit's geoarchaeology and history work addresses the concept of vulnerability from a historical perspective.

➔ To study the practices, standards, knowledge and values that underpin water governance (or social management) and water policy concepts and instruments (ecosystem services derived from water regulation, payments for environmental services, protected areas, etc.).



Research teams involved into IM2E

Research area: "Risks, transport and regional vulnerabilities"

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Research area: "Resource and regional management"

Led by:

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Research area: "Biodiversity and societies"

Led by:

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Research area: "Supporting planning decision-making through modelling and spatial representations"

Led by:

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Linkage with IM2E research fields and emerging issues

Discipline

> Hydro-climatic risks

understanding of phenomena, vulnerability assessments, spatial dimension of risks, risk and crisis management, risk communication, and education.

Discipline

> Water, actors and regions

"water services": lessons learned and joint definitions, social management of water, linkage between land ownership and water rights, water policy, actors and networks, and water-related knowledge, values and standards.

Challenge

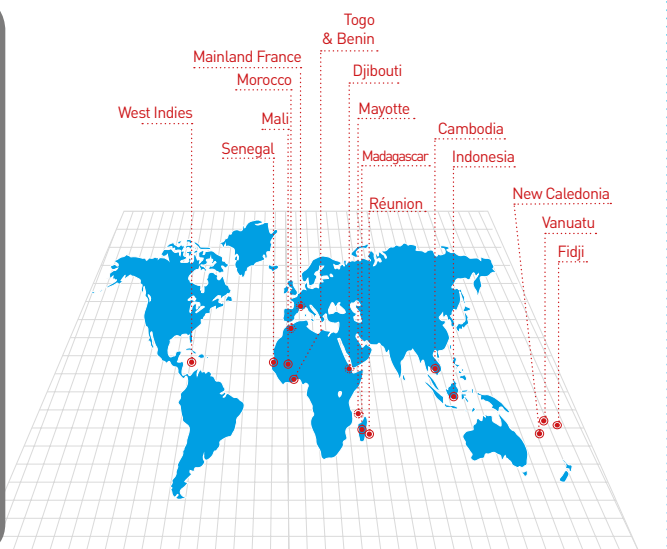
> Viability and interactions in water basins

Challenge

> Water and agriculture



Study areas



highlights

Scientific and/or technical

● Thesis topic:

Incorporating human risk into coastal flooding crisis management: from vulnerability assessment to evacuation modelling.

PEROCHE Mathieu (dir. F. Leone & F. Vinet)

● Thesis topic:

Natural and development risks in IGAD countries (jointly supervised by Montpellier and Djibouti).

OMAR ALI Bouh (dir. F. Vinet & M. Nour Ayeh)

● Thesis topic:

Risk management and cyclone-affected population movements in the last two decades (1992-2012) in Louisiana, United States.

PEINTURIER Elsa (dir. N. Meschinet de Richemond)

Platforms and Equipments

- Mapping
- Geographical information systems
- Remote detection
- Spatial analysis



Academic and industrial partners

France

- Prodig UMR (8586), Pantheon-Sorbonne University (Paris 1)
- LGP UMR (8591), Pantheon-Sorbonne University (Paris 1)
- BRGM Orléans
- Eau UMR (Iirstea)
- UG-Eau UMR (CIRAD, IRD & Iirstea)
- Espace-Dev UMR
- CRC (MINES ParisTech)
- EA 929 laboratory (AIHP-GEODE)
- University of the French West Indies and Guiana, Martinique
- Institut de Physique du Globe de Paris (IPGP)
- IRD Martinique
- Rench Alternative Energies and Atomic Energy Commission (CEA)
- Archéologie des Sociétés Méditerranéennes UMR (5140)/CNRS (Lattes, France)
- BURGEAP
- French Ministry of the Environment, Energy and the Sea
- IGN-COGIT
- INRIA Saclay
- CSFRS

- GRET
- IFSTTAR

International

- GERAD (Dakar, Senegal)
- LGMSS URAC45 laboratory, Faculty of Science, El Jadida (Morocco)
- Department of Geography, University of the Philippines, Quezon City
- HR Wallingford
- Deltares (Netherlands)
- University of Djibouti
- Institut Agronomique Néo-Calédonien (Port-Laguerre/Pouembout, New Caledonia)
- University of Cologne (Germany)
- C3EDM (University of Antananarivo, Madagascar)
- Australian National University (Canberra)



Examples of partnership projects

CRISIS *Characterisation of Submersion Risks at Sensitive Sites*

Partners: BRGM, UMR Prodig, UMR LGP, CSFRS, 2014-2016.

> Developing an integrated, practical approach to flooding risks in a coastal community through predictive hazard characterisation and quantitative and qualitative vulnerability assessment.

Rhyvière2 (Madagascar)

Partners: GRET, EU & FFEM, with research support from IRD & C3EDM (2015-2018).

> Supporting a rural hydropower programme by conducting cooperative water research, carrying out social and environmental analysis, and developing a shared approach and a resource and benefit sharing system.

"Fresh water supply and the land-water nexus in the Pacific: Competing uses, complex regulations conflictive political issues"

Partners: ANU, IRD, IAC, IRSTEA & Majulla Inc. - 2013-2016.

> Comparative study of local water policy (competing uses, complex regulations, land-water nexus) in the Pacific (focusing on New Caledonia, Western Australia and Fiji).

GRED keywords:

Spatial analysis
Vulnerability
Coastal flooding

Flood risk

Ecosystem services derived from water regulation

Social management of water

Resource-sharing

Rebuilding

Perception

Public policy

Payments for environmental services

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