DS²BE

Doctoral Seminars on Sustainability Research in the Built Environment

Informal urban fabrics flood resilience

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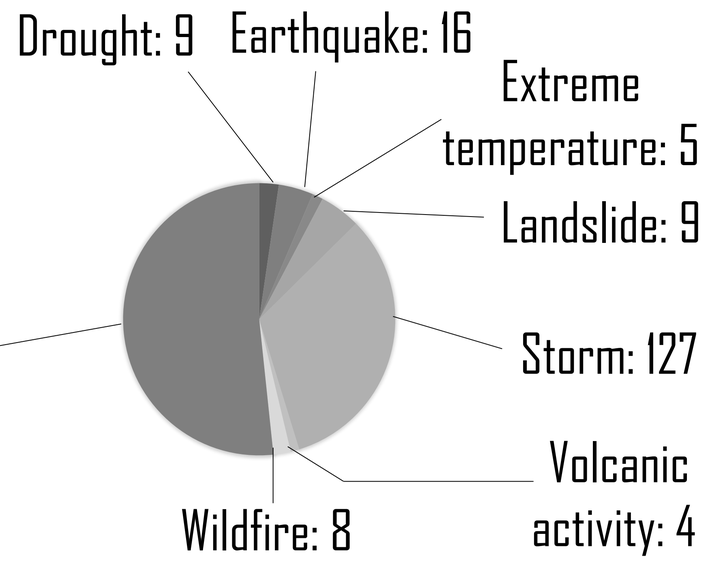
LIÈGE université

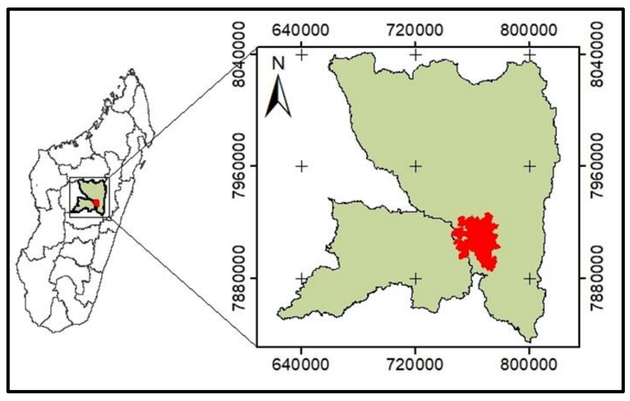
GENERAL FRAMEWORK

163 → 201

2000-2019 → 2020



Source: CRED, 2021



Study site: Antananarivo, Madagascar

Source: AGETIPA

Poor quality / Inexistence of data → Rapid urban growth + Weak urban governance (Global South)

Rapid urban growth + Weak urban governance → Urbanisation in flood-prone areas ⇄ Informal urbanisation

Cities fragmentation in the colonial period → Informal urbanisation

"How to foster the resilience of populations in informal settlements located in flood-prone areas?"

GOALS AND METHODS

Flood hazard mapping

Flood extent | Water depth | Return period

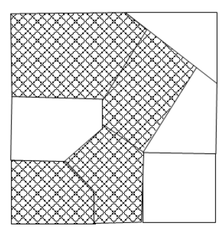
Classification of aerial images (Sentinel-1) | Spatial interpolation (DEM)

Remote sensing - GIS tools - Statistic tools

Informal settlements mapping

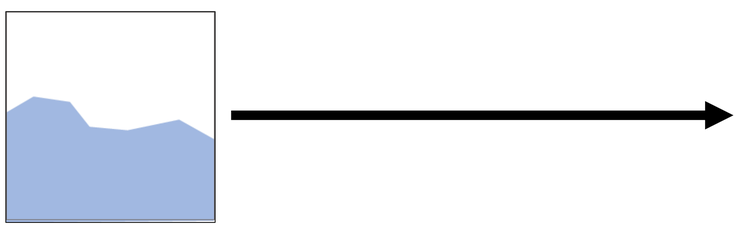
Machine Learning

Remote sensing - GIS tools

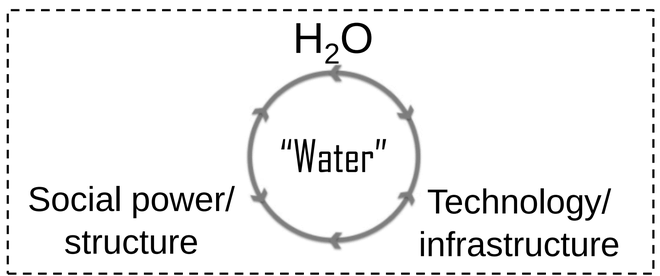


ITC UNIVERSITY OF TWENTE.

Social vulnerability



Surveys
Collaboration with local institutes



Hydrosocial cycle

Source: Linton, J., & Budds, J. (2014)

Hydrosocial model

IRD Institut de Recherche pour le Développement FRANCE

Representation of local communities | Urban transformation scenarios | Actors' strategies

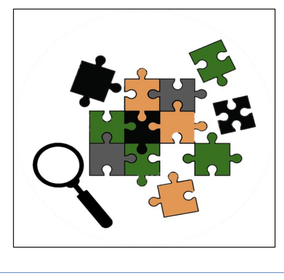
Public authorities / Population / Funder

Workshop and semi-structured interviews

Analysis of the drivers and challenges of densification and urban expansion

(Spatiotemporal mapping of built spaces)

KEYS



11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

- Interdisciplinarity
- Towards sustainable solutions
- Methods applicable in the cities of the Global South