stage 1

floods impact on spatial configuration

normal conditions
street network
r3000 / r800

flood model (100-year return):
segment deletion and penalty levels

street network under flood conditions
r3000 / r800

stage 2

urban systems and services exposure

land use

health

education

slums

shelters

stage 3

global-scale resilience strategies

population density

↓

nachr3000m (core 20%)
normal condition

↓

nachr3000m
flood condition

↓

critical infrastructure

↓

priority emergency corridors

structural resilience strategies in transport infrastructure

Dem (copernicus)

↓

waterways network

↓

high risk zones

↓

designated zones for water-sensitive urban design (WSD)

waterways network

↓

high risk streets network

↓

waterway and street network during extreme events

stage 4

local-scale resilience strategies

population density

↓

nachr3000m
flood condition

↓

nachr800m
flood condition

↓

10 clusters (k-means)

↓

assessment of shelter placement

identification of safe-accessibility priority zones

waterway and street network during extreme events

↓

deployment of emergency boats

↓

assessment of boat deployment efficiency under flood conditions