

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

Dem (copernicus)

waterways network

stage 4

local-scale resilience strategies

flood condition

population density

nachr3000m
flood condition

nachr800m
flood condition

10 clusters (k-means)

assessment of shelter
placement

identification of safe-
accessibility priority
zones

evacuation zones

waterway and street
network during extreme
events

deployment of emergency
boats

assessment of boat
deployment efficiency
under flood conditions

waterways network

high risk streets
network

waterway and street
network during extreme
events