

Urban and critical infrastructure hotspot assessment

DOMAIN: Urban

Content

A variety of tailor-made products and services can be provided for the identification of various natural hazards. In combination with the determination of economic and social vulnerabilities, high resolution population modelling and critical infrastructure identification, areas of elevated risks are determined for various hot spots. By integrating future climate change scenarios, possible future impact and damage assessments can be made.

Relevance

Continued climate change is expected to have a significant impact on various natural hazard processes, such as flooding, erosion, storms, wildfires, and diverse processes associated with sea-level rise such as coastal erosion. Where humans and their assets are affected, these can lead to considerable risks for society. In this context, it is important for urban residents, city authorities, national and EU institutions to receive information about how they will be affected and to plan accordingly.

This service is relevant for e.g.

- Multi-risk analyses
- Risk hotspot identification
- Urban planning

Input data and methods

Based on EO satellite data (Sentinel 2) a unique method to sharpen rough census information to real-world housing locations and add insights into the distribution of the population are combined with information on environmental threats and climate change risks such as flood risk datasets or outcomes of urban climate models to derive the exposure of the population.

Product examples

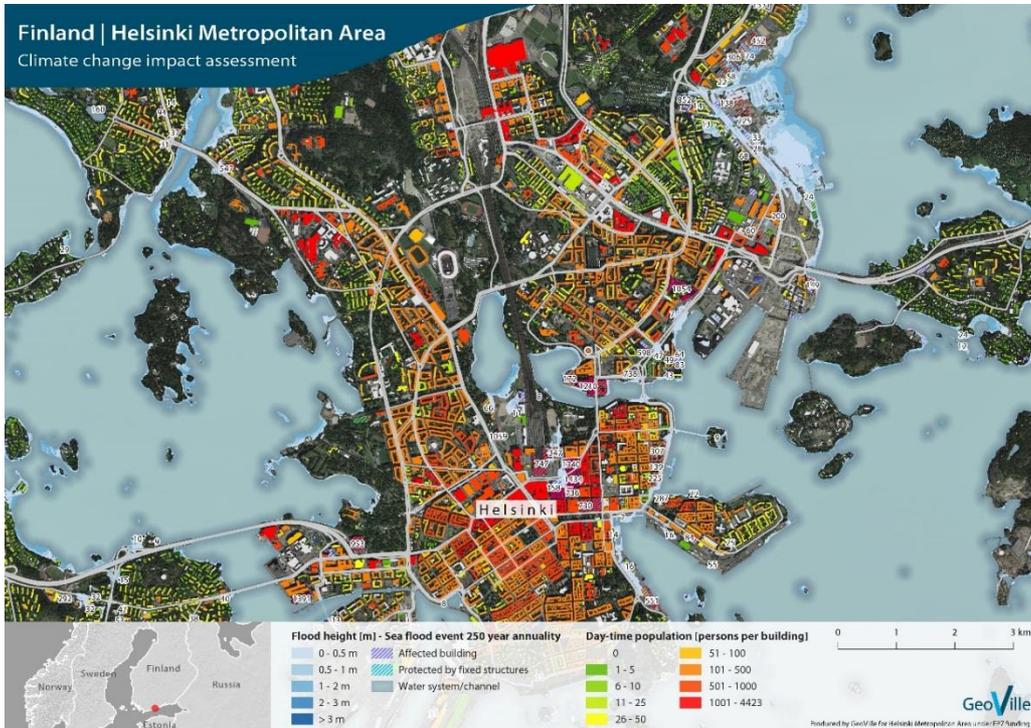


Fig. 1: Climate Change hotspot and impact assessment for Helsinki, Finland.

Technical specifications

SPATIAL COVERAGE
100's of km²

DATUM / PROJECTION
User defined

FORMAT
Data: GeoTiff
Analysis: XLSX or PDF

SPATIAL RESOLUTION
0.5m – 10m

TEMPORAL COVERAGE
1980's - now

TEMPORAL RESOLUTION
Status - annual

THEMATIC ACCURACY
>85% overall accuracy

POSSIBLE OUTPUTS

- Urban (flood) risk maps
- Exposure maps of population/assets

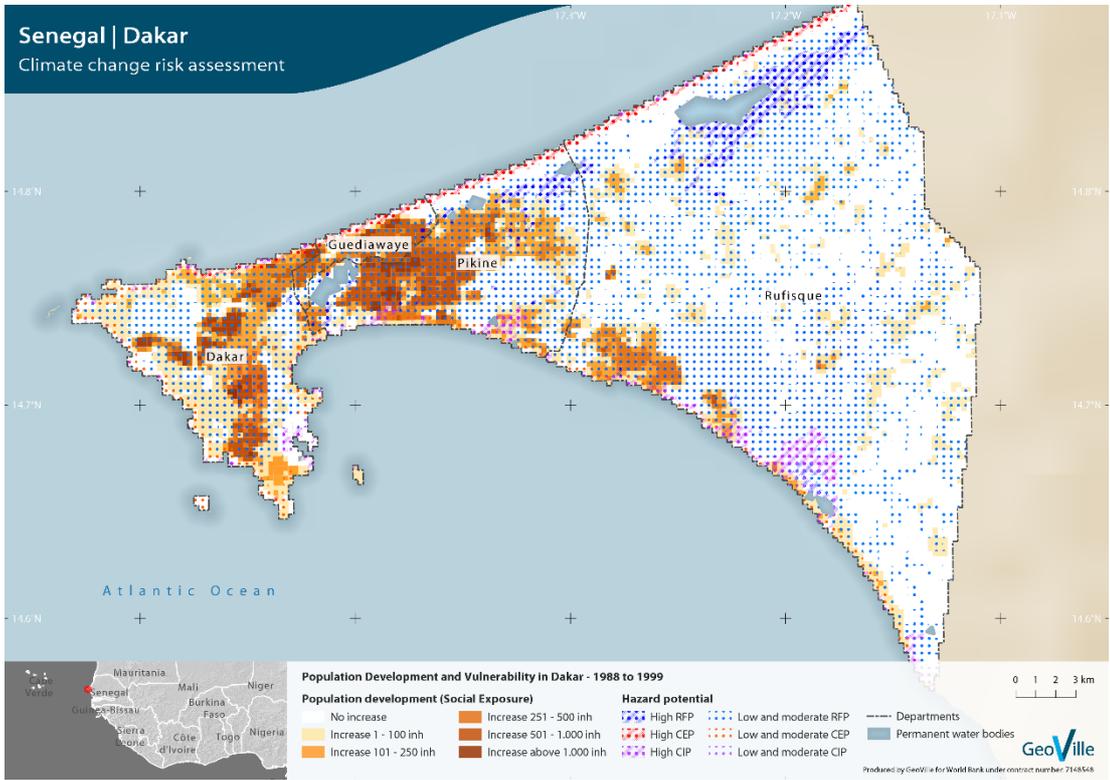


Figure 2: Assessment of population development and vulnerability in Dakar, Senegal.