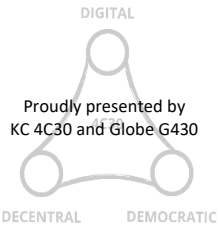


# Remote sensing tool for monitoring land-cover and surface temperature



## Potential Climate/ Disaster Impacts addressed and Justification for this Approach

The intertwined challenges of climate change and rapid urbanization present a formidable global issue. Climate change, driven by the accumulation of greenhouse gases, is intensifying weather extremes, rising sea levels, and disrupting ecosystems. Simultaneously, the unprecedented growth of urban areas is accelerating resource consumption, contributing to emissions, and altering land use patterns, amplifying the climate crisis. Assessing these complex changes is difficult and requires comprehensive strategies and methods, such as data analysis and visualization, that harmonize urban development with climate resilience to ensure a sustainable future for rapidly urbanizing populations.

## Process of Implementation

The web-based and user-friendly application within Google Earth Engine designed for swiftly processing and analyzing open-source Landsat satellite data, enables users to specify a geographic area and time range, perform calculations, visualize, and export diverse outcomes and data layers such as surface temperature (ST), vegetation index (NDVI), building index (NDBI), and land cover (classified using index-based methods). The user-specific produced data can then be used further in spatial planning, heat island assessments, environmental monitoring, education, and outreach as well as in policy-making.

### Project Title

CitiesAdapt

### Project Number

17.9052.6-001.00

### Results and Impacts

The analysed data and produced maps supported the Planning Institute of Merida to assess urbanization and heat islands for the decision-making processes on urban planning. The tool also engaged the municipal officials on improving the knowledge on available open-source data/tools, overcoming the existing limitations with licenced softwares and access to data.



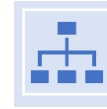
#### TYPE OF APPROACH

Information & Data Management



#### COUNTRY

Mexico



#### LEVEL OF INTERVENTION

subnational/regional, city, neighborhood



#### TYPE OF RISK MANAGEMENT

prevention, transformation



#### MAIN HAZARDS ADDRESSED

heat wave, drought



#### URBAN FUNCTION PROTECTED

all



#### SPHERE OF INTERVENTION

Socio-political sphere/governance,  
Environment



#### RESOURCES REQUIRED

GIZ intern with technical background



#### COOPERATION PARTNERS

IMPLAN - Merida