



life

UrbanProof

LIFE15 CCA/CY/000086

THE URBANPROOF TOOLKIT

A decision support system for assisting
municipalities in adaptation planning



LIFE URBANPROOF
CLIMATE PROOFING
URBAN MUNICIPALITIES



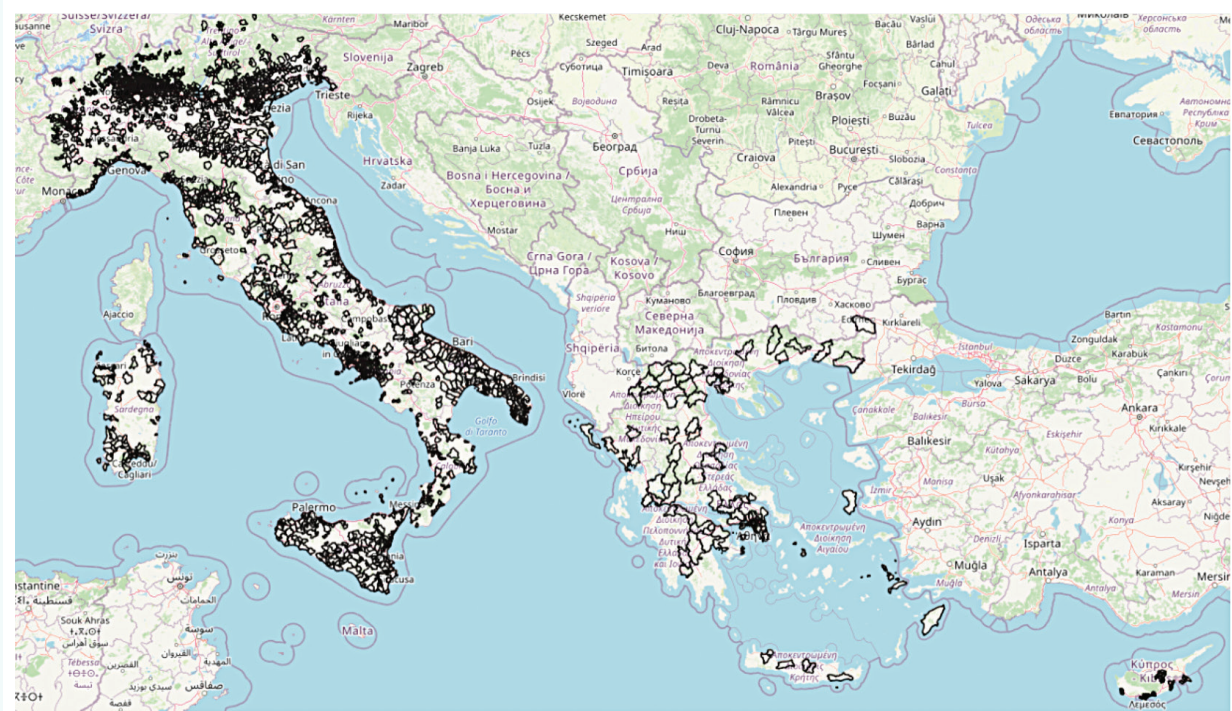
THE URBANPROOF TOOLKIT

A decision support system for assisting municipalities in adaptation planning

The URBANPROOF toolkit is a powerful decision support system aimed to enable better informed decision making for climate change adaptation planning. In specific, the user is guided through the different features of the toolkit in order to gain insight into the climate change impacts to the urban environment, to explore and evaluate the available adaptation options and to investigate the effect of adaptation interventions in increasing climate change resilience.

The Toolkit has been developed in the framework of the LIFE URBANPROOF project “Climate Proofing Urban Municipalities” which is co-financed by the LIFE programme for the Environment and Climate Action (2014-2020).

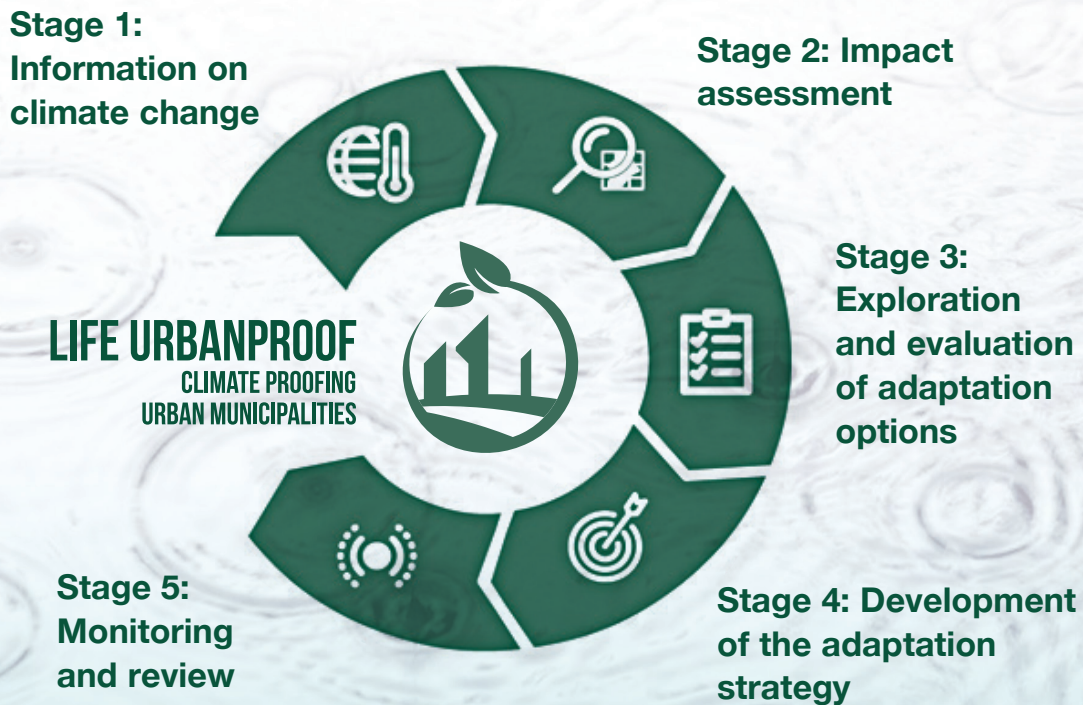
The Toolkit may be used for conducting an impact and adaptation assessment for every urban municipality in Italy, Greece and Cyprus.



Urban municipalities of Italy, Greece and Cyprus

Higher resolution data are provided in the cases of the municipalities of Reggio Emilia (Italy), Peristeri (Greece) and Strovolos and Lakatamia (Cyprus) which are partners of the LIFE URBANPROOF project.

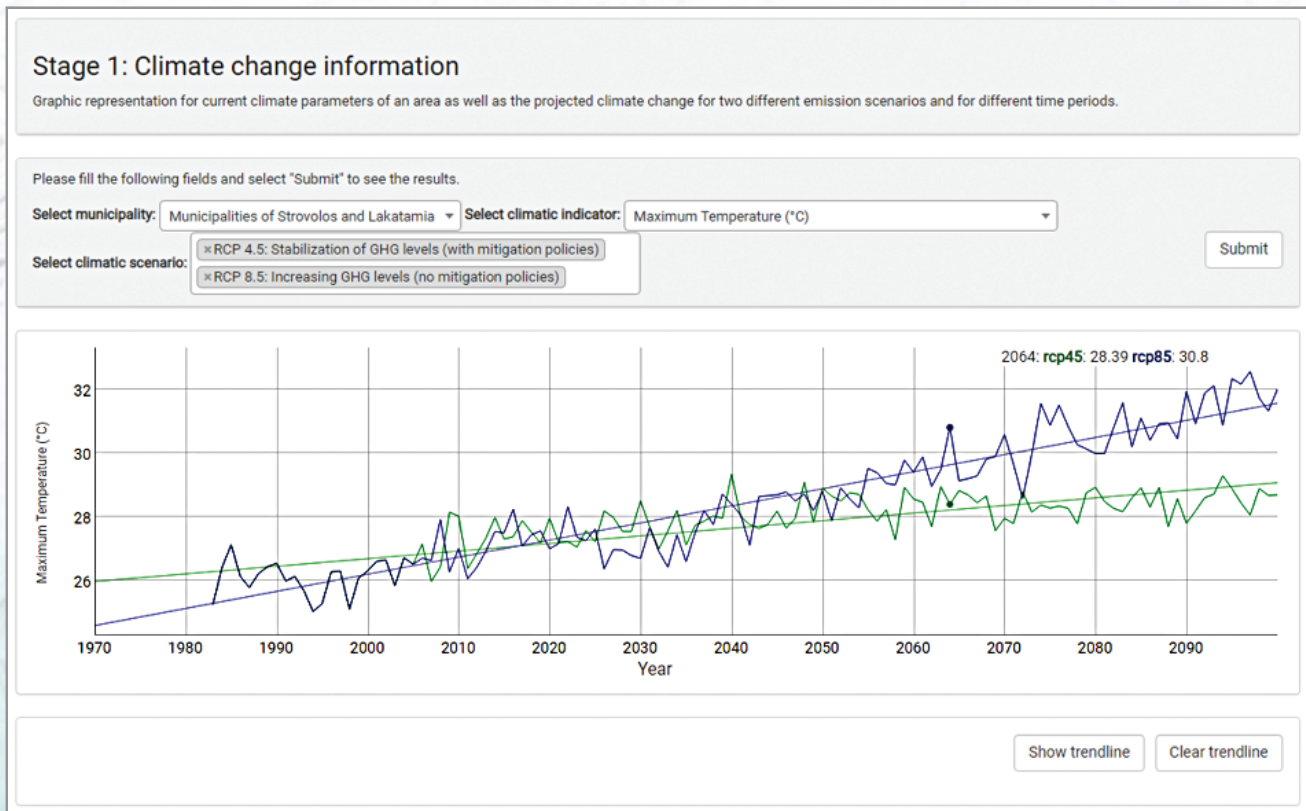
The toolkit consists of 5 interdependent modules/stages which altogether comprise the adaptation process, as shown next:



Stage 1: Climate change information

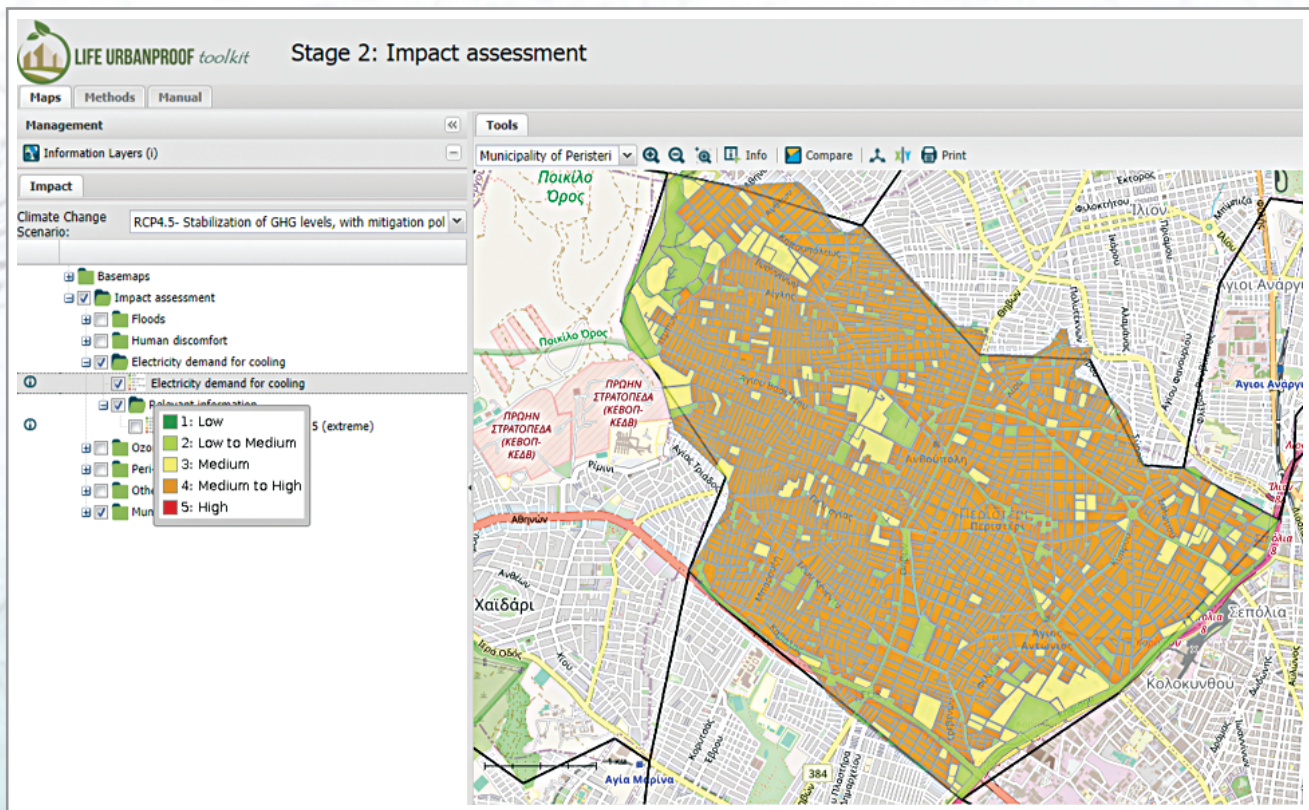


In this Stage, the user may explore through interactive charts, information on climatic indicators trends for the project municipalities based on two future emission scenarios for the continuous period 1971-2100 (RCP4.5 and RCP8.5).



Stage 2: Impact assessment

In stage 2, the users may investigate the climate change impacts on the urban environment as well as the individual climatic, physical, structural and socio-economic parameters contributing to the creation of impacts.



Stage 3: Exploration and evaluation of adaptation options



In Stage 3, the user may either explore the available adaptation measures and their evaluation scores provided by a “pool of experts” of the Urban Proof project, or to “ask” for an evaluation of the adaptation measures by setting his or her own values.

Stage 3: Exploration and evaluation of adaptation options

● Weight Criteria ⚡ Electricity demand for cooling 🌊 Floods 🔥 Peri-urban fires 🌫️ Ozone Exceedances 🌡️ Heatwaves and health 💧 Water availability and droughts

Evaluation of adaptation measures addressing increased electricity demand for cooling

In the following table, the evaluation of adaptation measures (first column) against the criteria (top row) provided by a “pool of experts” in the framework of the UrbanProof project is presented (default evaluation).

Measure	Efficiency in addressing the impact Current Weight: 50	Environmental Friendliness Current Weight: 25	Economic Viability Current Weight: 15	Job growth Current Weight: 10
Holistic Energy Efficient Retrofitting of Residential Buildings ?	80	83	51	66
Renovation of municipality buildings to Nearly Zero-Energy Buildings ?	79	83	45	66
Cool Roofs ?	68	74	55	57
Green Roofs ?	65	78	47	57
Cool pavements ?	66	73	47	57
Urban parks ?	72	86	57	41
Reduction of urban heat islands ?	70	73	45	55
Economic incentives for renewables and energy efficiency ?	82	84	44	66
Demonstration projects and educational programs ?	70	80	67	45

Stage 4: Development of the adaptation strategy



In stage 4, prioritization of the adaptation measures based on the score they attained at Stage 3, takes place. The user is able to view the prioritization of adaptation measures addressing all impacts of interest.

Evaluation of adaptation measures addressing increased electricity demand for cooling

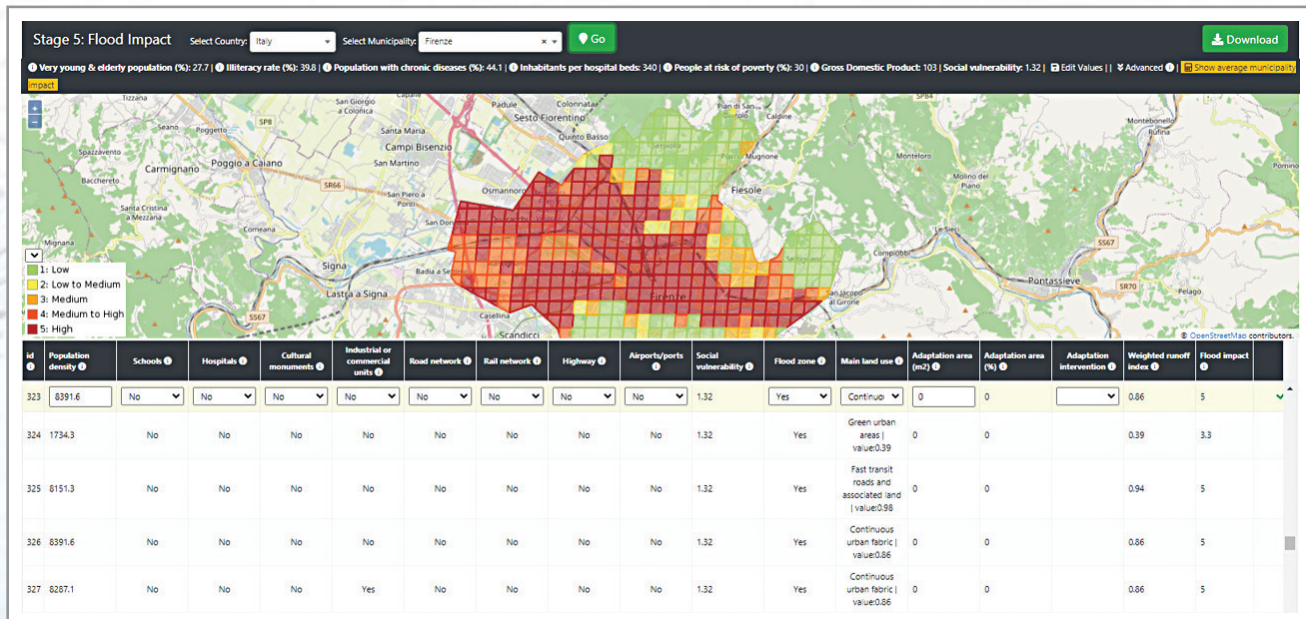
In the following table, the adaptation measures are prioritized based on the ratings provided in Stage 3 for the multi-criteria analysis (MCA). The measures gathering the higher ratings may be included in the Local Adaptation Plan of the municipality.

Measure	Final score
Holistic Energy Efficient Retrofitting of Residential Buildings ?	70.04
Economic incentives for renewables and energy efficiency ?	68.92
Renovation of municipality buildings to Nearly Zero-Energy Buildings ?	67.96
Demonstration projects and educational programs ?	65.25
Urban parks ?	64.02
Cool Roofs ?	63.32
Green Roofs ?	61.25
Cool pavements ?	60.80
Reduction of urban heat islands ?	60.78

INFO: The measures gathering the higher ratings may be included in the Local Adaptation Plan of the municipality.

Stage 5: Monitoring and review

In Stage 5, the user may investigate the effect of the implementation of adaptation measures in increasing the resilience of a municipality to the examined impacts. In addition, the Toolkit enables the online editing of its database in order to update it, as well as the adjustment of the parameters used in the impact assessment.



INFO: Stage 5 may provide significant support to the local authorities both for the targets setting phase, during the preparation of the local adaptation plan and for the monitoring phase, during the implementation of the adaptation measures foreseen in the plan.

The URBANPROOF Toolkit is available online at the following address:

<https://tool.urbanproof.eu/>

where you can also find the detailed User guide as well as the demonstration video of the tool

The project is implemented by:



DEPARTMENT OF
ENVIRONMENT

Coordinator:

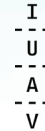
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www.strovolos.org.cy



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Duration: 55 months

(1 October 2016 - 30 April 2021)

Total project budget: 1,854,000 (60% EC funding)