

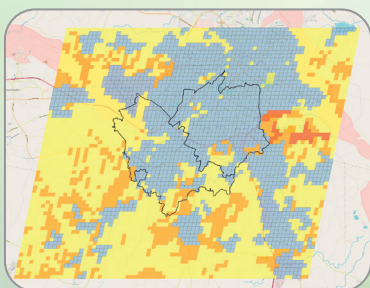
INFO:  
Ozone exceedance:  
8-hour average ozone  
concentration above  
120 µg/m3

Municipality of Reggio Emilia: Assessment of climate change impact on ozone exceedances (RCP8.5)

## Peri-urban fires

For the assessment of peri-urban fires, the number of days with Fire Weather Index (FWI) above 30 (i.e. days with high fire danger) was used for the assessment of hazard, while other parameters of relevance for the assessment (slope, aspect, land cover flammability) were also used. To study peri-urban fires, a grid extending 4km beyond the borders of each municipality was constructed.

INFO:  
FWI: A meteorologically  
-based index used  
to estimate fire danger  
based on temperature,  
relative humidity, wind  
speed and precipitation.



◀ Municipalities of Strovolos & Lakatamia: Assessment of climate change impact on peri-urban fire risk (RCP8.5)

## The project is implemented by:



**Coordinator:**  
Department of Environment,  
Ministry of Agriculture, Rural  
Development and Environment  
[www.moa.gov.cy/environment](http://www.moa.gov.cy/environment)



National Technical University  
of Athens  
[www.ntua.gr](http://www.ntua.gr)



National Observatory of Athens  
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Università Iuav  
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Università IUAV di Venezia  
[www.iuav.it](http://www.iuav.it)



Municipality of Strovolos  
[www.strovolos.org.cy](http://www.strovolos.org.cy)



Municipality of Lakatamia  
[www.lakatamia.org.cy](http://www.lakatamia.org.cy)



**Municipality  
of Peristeri**

Municipality of Peristeri  
[www.peristeri.gr](http://www.peristeri.gr)



**COMUNE DI  
REGGIO NELL'EMILIA**

Municipality of Reggio Emilia  
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LIFE UrbanProof - LIFE15 CCA/CY/000086  
Duration: 44 months  
(1 October 2016 - 31 May 2020)  
Total project budget: 1,854,000 (60% EC funding)



**LIFE URBANPROOF**  
CLIMATE PROOFING  
URBAN MUNICIPALITIES



# Life UrbanProof

LIFE15 CCA/CY/000086



## The UrbanProof project

The overall aim of the LIFE UrbanProof project is to increase the resilience of municipalities to climate change by equipping them with a powerful tool (UrbanProof toolkit) that supports climate change adaptation planning.

In the framework of this project, climate change impacts are assessed for four urban municipalities (Peristeri-Greece, Reggio Emilia-Italy, Strovolos and Lakatamia-Cyprus). Following, an online decision support tool for adaptation planning is developed, while a number of small-scale green and soft adaptation measures are implemented at the project municipalities, based on the results of the tool. Finally, local adaptation strategies are developed for these municipalities.

## Impact assessment

The impacts are assessed based on the climate projections of two greenhouse gas concentration scenarios (RCP4.5 and RCP8.5). The selected climate change impacts are those relevant to the urban context as shown next



The impacts are assessed as a function of the climate change hazards and vulnerability, while the latter encompasses the exposure of population and/or infrastructure to an impact and the social vulnerability. A composite social vulnerability index was built to reflect population groups sensitive to climate change impacts and the adaptive capacity of the society and its structures.

- Very young and elderly people
- Illiteracy rate
- Population at risk of poverty
- Gross Domestic Product
- Hospital beds availability
- Population with chronic diseases

## Water availability and droughts

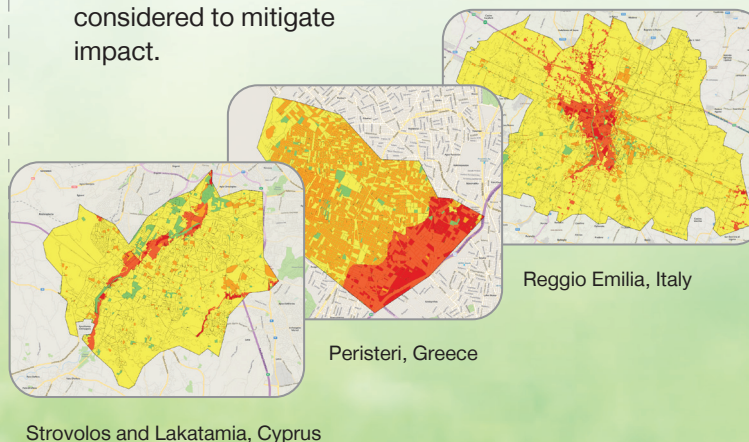
For the impact assessment of water availability a number of commonly accepted indicators was used, such as the Water Exploitation Index (WEI) and the Standardized Precipitation Evapotranspiration Index (SPEI). Water availability was assessed for the freshwater bodies supplying with potable water the project municipalities. The results are presented in the following table.

Total water impact

Municipality	RCP	Period	
		2031-2060	2071-2100
Strovolos & Lakatamia	4.5	High	High
	8.5	High	High
Peristeri	4.5	Medium to High	Medium to High
	8.5	Medium	Medium to High
Reggio Emilia	4.5	Medium to High	High
	8.5	Medium to High	Medium to High

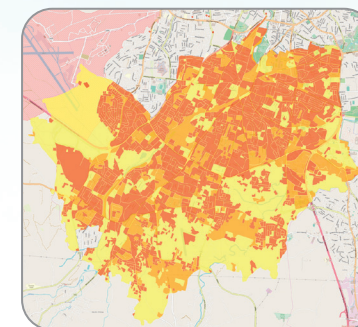
## Floods

For the assessment of flood impact, flood hazard maps were used for identifying the location and extent of the area potentially affected by flooding while low-lying areas next to rivers were assigned with an extra weight. Retainment of run-off where green spaces are maintained was considered to mitigate impact.



## Human discomfort

For the assessment of human discomfort, the number of days with HUMIDEX above 38°C was selected as indicator of hazard.

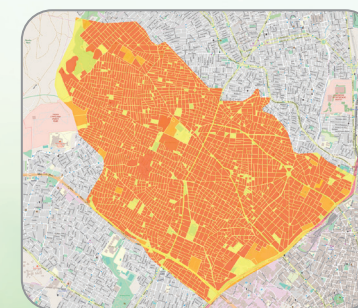


INFO:  
HUMIDEX: Climatic indicator reflecting the impacts of temperature and humidity on human discomfort

Municipalities of Strovolos & Latamia: Assessment of climate change impact on human discomfort (RCP8.5)

## Electricity demand for cooling

For the assessment of electricity demand for cooling, the number of days where the Cooling Degree Days (CDD) is above 5 (i.e. days with great electricity demand for cooling) was used for the assessment of the climatic hazard



INFO:  
CDD: Climatic indicator reflecting the demand for energy needed to cool a building

Municipality of Peristeri: Assessment of climate change impact on electricity demand for cooling (RCP8.5)

## Ozone exceedances

For the assessment of ozone exceedances, the number of days with ozone exceedances above the threshold value for protection of human health, was used for the assessment of the climatic hazard.