



Deliverable F2: UrbanProof After-LIFE plan



LIFE URBANPROOF
CLIMATE PROOFING
URBAN MUNICIPALITIES

Acknowledgments

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The project is being implemented by the following partners:

Coordinator Beneficiary



Department of Environment, Ministry of Agriculture, Rural Development and Environment (*Cyprus*)

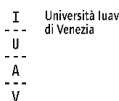
Associated beneficiaries



National Technical University of Athens (*Greece*)



National Observatory of Athens (*Greece*)



University of Venezia (*Italy*)



Municipality of Reggio Emilia (*Italy*)



Municipality of Strovolos (*Cyprus*)



Municipality of Lakatamia (*Cyprus*)



Municipality of Peristeri (*Greece*)

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1 INTRODUCTION

The After-LIFE Plan of the UrbanProof project sets out the way the project team intends to continue disseminating and communicating the project results after its completion as well as to encourage and ensure their wider application and adoption. The Plan presents project's objectives and scope and provides an assessment of the situation at the end of the project. Moreover, it provides a comprehensive description of the after-LIFE objectives and methodological approach and relevant target groups. Lastly, it presents in a tabular manner the resources dedicated to each action per beneficiary responsible and the timetable according to which the after-LIFE activities will be executed for an indicative period of up to 5 years after the completion of the project.

1.1 Project overview



LIFE URBANPROOF

CLIMATE PROOFING URBAN MUNICIPALITIES

Areas of implementation:

Cyprus, Greece, Italy

Budget: 1,854,000 € (60% EC Co-funding)

Duration: 55 months

Start Date: 01/10/2016

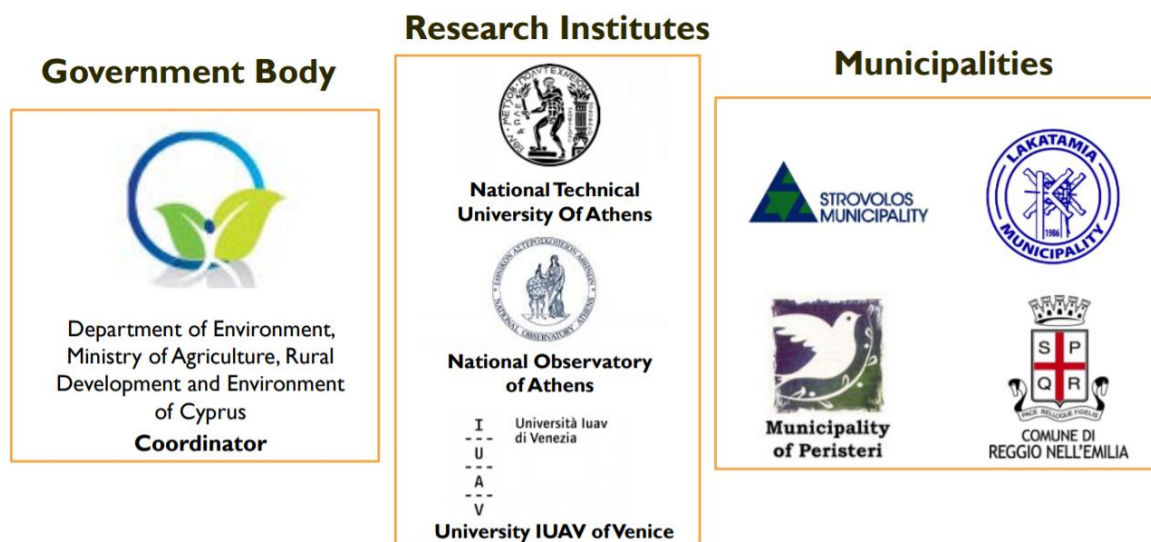
End Date: 30/04/2021

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

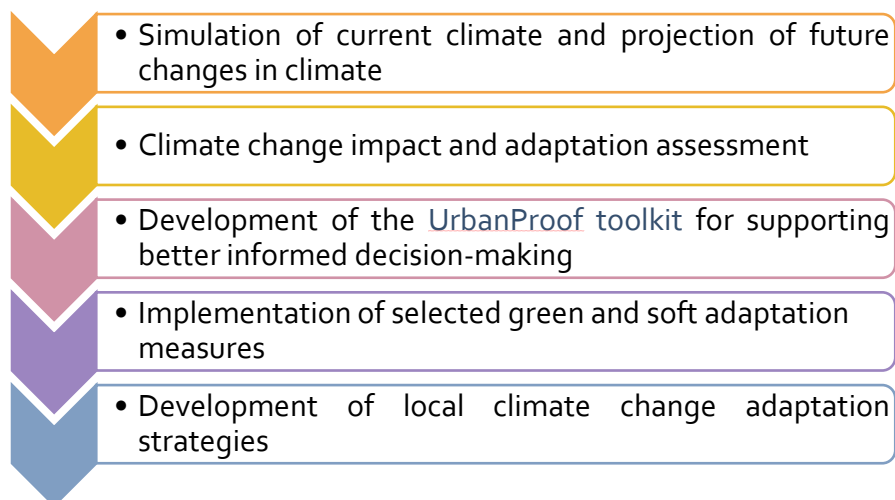


The overall aim of the UrbanProof project is to increase the resilience of municipalities to climate change equipping them with a powerful tool for supporting better informed decision making on climate change adaptation planning.

The project consortium:



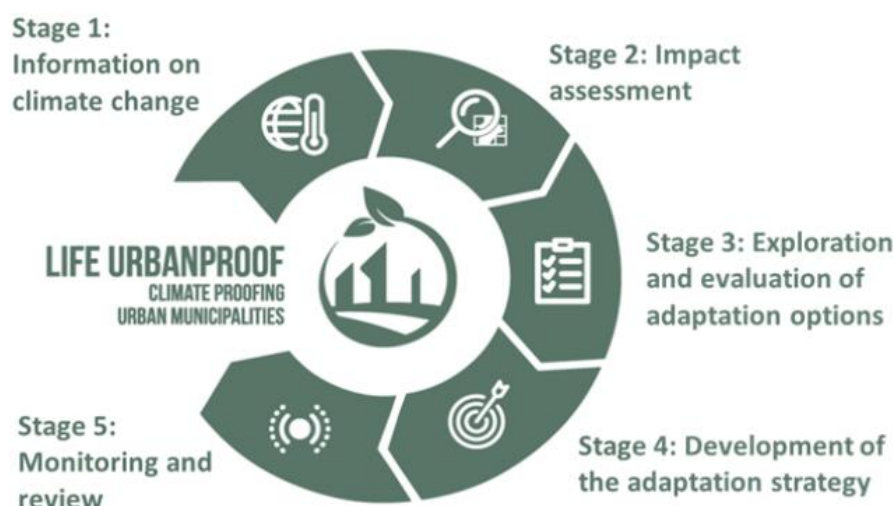
Main project structure:



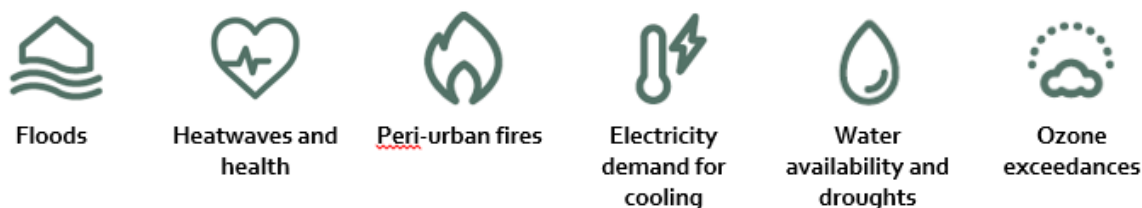
1.1.1 The UrbanProof toolkit

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 stages 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 UrbanProof toolkit consists of 5 interdependent stages which altogether comprise the adaptation process:



The climate change impacts assessed are those relevant to the urban context as shown next:







The potential end users of the UrbanProof toolkit are:

- Municipalities
- Environmental consultancy companies
- Competent regional and national departments
- Environmental technology companies
- Assurance companies
- Organizations and initiatives dealing with climate change adaptation
- Researchers, students
- All citizens

1.1.2 Demonstration of adaptation practices

Selected green and soft adaptation measures have been implemented at the partner municipalities, in order to examine their effectiveness in reducing the impacts of climate change, to increase public awareness on climate change adaptation and to prepare the ground for the implementation of the adaptation strategies.

-  **Lakatamia municipality: Reconstruction of Melina Merkouri Avenue roundabout**
-  **Strovolos municipality: Greening unexploited public area at Georgiou Iona Street**
-  **Peristeri municipality: Provision of thermal discomfort information**
-  **Reggio Emilia municipality: Strengthening the adaptation aspect in existing municipal actions**

1.1.3 Environmental monitoring platform

In the framework of the UrbanProof project, a set of sensors has been installed at selected locations of the UrbanProof municipalities where adaptation measures were implemented. The sensors are aimed at monitoring several critical meteorological and hydrological indicators for assessing heat and water related impacts, validating the effect of adaptation measures in decreasing impacts, as well as, at informing citizens. All information is displayed online in a dedicated platform of the UrbanProof project, where someone may have access both to real-time information as well as to historical timeseries.

1.1.4 Development of adaptation strategies

In the framework of the project, the adaptation strategies for the four partner municipalities have been developed. The strategies form part of the Sustainable Energy and Climate Action Plans (SECAP) that the municipalities submit as signatories to the Covenant of Mayors. Before the official submission of the SECAPs, the municipalities also published the draft plans for public consultation in order to increase visibility and acceptability of the foreseen actions.

1.2 Situation at the end of the project

Main aim of the project team was that the principal outcome of the project, the UrbanProof toolkit, will be uptaken by the potential end-users. Therefore, a great deal of effort was devoted in preparing the ground for the After-LIFE period by the project end, so as to enable and to promote the replication of the toolkit with the minimum additional efforts during the After-LIFE period.

The project replication efforts were focused on creating links with the Covenant of Mayors (CoM) and its representatives in Europe (i.e. the Covenant Supporters and Coordinators), as it is believed that there is a great potential for replication of the UrbanProof toolkit to the municipalities that are (or intend to be) signatories to the CoM, for the following reasons:

- The CoM is very popular among the urban municipalities of Europe, including the municipalities of the three project countries
- the UrbanProof toolkit may provide significant support to the municipalities for assessing their climate change risks and vulnerabilities and developing their own Climate Action Plans in the framework of CoM
-

In that direction, the following activities were implemented until the project end:

- **Ensuring consistency and compatibility with the EC guidance.** The UrbanProof toolkit process was structured from the beginning upon the Urban adaptation process indicated by the Urban Adaptation Support Tool of the Covenant of Mayors –Europe Office and the European Environment Agency. The UrbanProof toolkit is also consistent with the JRC Guidebook 'How to develop a Sustainable Energy and Climate Action Plan (SECAP), part 1 and 2" (Bertodi et al., 2018)¹. In particular, the UrbanProof toolkit methodology for elaborating a Climate action plan is fully in line with the respective guidance provided in Part 1 of the JRC Guidebook. In addition, the UrbanProof toolkit is also in line with the methodological approach suggested by the JRC Guidebook – Part 2, for conducting a Risk and Vulnerability Assessment (RVA) for a SECAP.
- **Development of Guidelines** for supporting municipalities in the development of their Climate Action Plans with the use of the UrbanProof toolkit. The guidance is in accordance with the Reporting guidelines of the EU Covenant of Mayors (2020).
- **Organization of events for the demonstration of the UrbanProof toolkit and of training seminars on the toolkit use.** All urban municipalities in the 3 project countries and especially the associations of municipalities and other relevant networks of local authorities that collaborate with the municipalities, e.g. in the framework of the Covenant of Mayors, were invited to participate to the demonstration events of the UrbanProof toolkit and to the final project conference. In addition, meetings were organized with the Cyprus Energy Agency (which is a Covenant Supporter that has undertaken the SECAPs for 40 local authorities in Cyprus and is interested in using the toolkit for the preparation of the Climate Action Plans), to present the toolkit and train its personnel on its use, as well as to provide specific support when necessary.

¹ Bertoldi P. (editor), *Guidebook 'How to develop a Sustainable Energy and Climate Action Plan (SECAP) – Part 1 - The SECAP process, step-by-step towards low carbon and climate resilient cities by 2030*, EUR 29412 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-96847-1

Bertoldi P. (editor), *Guidebook 'How to develop a Sustainable Energy and Climate Action Plan (SECAP) – Part 2 - Baseline Emission Inventory (BEI) and Risk and Vulnerability Assessment (RVA)*, EUR 29412 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-96929-4

- **Direct investigation of the willingness/interest of stakeholders for using the UrbanProof toolkit** through specialized polls and questionnaires. Follow-up actions were undertaken in the case of positive feedback.
- **Dissemination of the UrbanProof toolkit through the Covenant of Mayors.** The UrbanProof toolkit was communicated to the CoM personnel, who stated that they find the UrbanProof toolkit very relevant and useful for the local authorities and that they would be glad to promote it through their communication channels. So far, the UrbanProof toolkit and the Guide for the development of CAPs was published in a relevant blog article of the CoM, the project final conference was announced under the events section of the CoM, while more promotional activities will take place in the future, as stated by them.
- **Dissemination of the UrbanProof toolkit through the Climate-ADAPT platform** of the European Environment Agency.
- **Direct communication with selected Covenant supporters and coordinators** in the three countries took place in order to promote the UrbanProof toolkit within their geographical scope and/or to their members/local governments/customers. So far, the Climate-KIC in Cyprus, the Central Union of Municipalities of Greece, the Region of Central Macedonia and the Technical Chamber of Greece, have stated their willingness for promoting their tool through their network, have published information on the toolkit at their websites and stated their intention in inviting the project team to events that will be organized by them in the future in order to demonstrate the toolkit to its network.

Other replication/continuation/exploitation activities implemented so far by the project partners:

Reggio Emilia:

Thanks to the UrbanProof project, a new LIFE project has been developed with Reggio Emilia involved as partner: the LIFE CITYAdap3 project. The project represents the logical continuation of UrbanProof as it is aimed at implementing the Local Adaptation Strategy through partnerships with local businesses. Thanks to the CITYAdap3 project, 18 local companies have been already involved and the Municipality is launching a pilot action on adaptive parks based on the analyzes and studies conducted within the UrbanProof framework. The UrbanProof project and toolkit will be presented to the municipalities of the LIFE project Cityadap3. The strategy and the project results will be employed during the project. During the events of Cityadap3 the project will be illustrated also to the local stakeholder group which will be involved in the Adaptation Strategy of Reggio Emilia.

IUAV:

IUAV is proposing the use of the Urbanproof toolkit at many levels and in different projects: Municipality of Cervia; Municipality of Rimini. At the current point this possibility is under evaluation in the Municipality of Padua (Italy) - Settore Ambiente e Territorio. The Municipality of Padua is involved in other adaptation projects, such as Veneto Adapt and others. Additionally, a doctoral student from the IUAV University of Venice who is collaborating with the Friuli Venezia Giulia Region in the construction of

the regional adaptation strategy and adaptation plans at the local scale, is proposing to the Region the use of the URBANPROOF Toolkit in some phases of the process.

Strovolos and Lakatamia:

- The UrbanProof toolkit has provided valuable data, in order for the municipalities of Strovolos, Lakatamia and Nicosia to proceed with the drafting of a masterplan for Pedaios River and its linear park.
- The Municipality of Strovolos, along with Cyprus Energy Agency, is working on another Project of Nature Based Solutions at the linear park, where output from the UrbanProof Project will be utilized.

2 AFTER-LIFE PLAN

In addition to the activities that took place in the course of the UrbanProof project for promoting the exploitation of the UrbanProof toolkit and disseminating the project results, a number of additional activities is foreseen to take place for the dissemination and exploitation of the project results after the project end, i.e. After-LIFE. The After-LIFE plan of the UrbanProof project is built upon the following **objectives**:

- ✓ To foster the use of the proposed UrbanProof toolkit to other urban municipalities of the project countries
- ✓ To complete any activity that has not been successfully completed by the project end
- ✓ To continue disseminating the project results so more people/organizations will become aware of it
- ✓ To provide training and transfer know-how to potential users of the UrbanProof toolkit
- ✓ To explore the potential for expanding the UrbanProof toolkit in order to include additional useful information (indicators, climatic scenarios, municipalities etc)

The After-LIFE activities are categorized into those that are already agreed upon/planned and to those that are more generic due to their nature. The two sets of activities are presented in the sections that follow.

2.1 Planned activities

On demand demonstration of the UrbanProof toolkit to interested stakeholders:

1. In the framework of the LIFE IP “AdaptInGR” the following activities for the demonstration of the UrbanProof toolkit are foreseen:

- The project team of Green Fund is willing to organize an event for the demonstration of the UrbanProof toolkit to the five partner municipalities of AdaptInGR (Agioi Anargiroi-Kamatero, Katerini, Komotini, Larisa, Rodos), where the partner municipalities of the project Circular Greece could also participate. **Partners involved:** NTUA, NOA
- The UrbanProof toolkit will be demonstrated in one of the Regional Thematic Workshops to be organized. **Partners involved:** NTUA, NOA

2. The department of Environmental Inspection of the Ministry of Environment and Energy has also expressed its interest to explore the potential for exploiting the UrbanProof toolkit features and has

invited the project team to present it. Other departments of the Ministry will also be invited to attend as it is believed that they would also be interested in the toolkit. **Partners involved:** NTUA, NOA

3. The Technical Chamber of Greece, the Region of Central Macedonia and the Central Union of Municipalities in Greece have stated their willingness in inviting the project team to present the UrbanProof toolkit to their members through events that they intend to organize. **Partners involved:** NTUA, NOA

4. The UrbanProof toolkit will be demonstrated in the Joint workshop on Green economy and innovation, Built Environment and Cultural Heritage, to be organized by the Cyprus Institute within October 2021. **Partners involved:** NTUA, NOA

5. The UrbanProof toolkit will also be presented in an article of ECOTEC (Greek media) monthly journal and during an online interview of the ECOTEC news show, during September 2021. **Partners involved:** NTUA

Inclusion in the National Adaptation Plan

MANRE will suggest the use of the toolkit for the development of local adaptation strategies to the other urban municipalities of Cyprus as well, through a relevant provision that will be included in the annual revision of the National Action Plan for Adaptation (in 2022). In addition, the results of the UrbanProof toolkit on the impact assessment for the urban municipalities of Cyprus will be included in the next revision of the National Adaptation Plan and will be taken into account in the allocation of funds for adaptation. **Partners involved:** MANRE

Exploitation of the UrbanProof toolkit results

The UrbanProof toolkit results will also be exploited by LIFE ASTI. In the framework of Action C.7 "Local Pilot Actions", the UrbanProof tool will be used to visualise the impact of the adaptation strategies to the urban microclimate of Thessaloniki. For such purpose, a downscaling algorithm will refine the resolution of the outcome from the climate models used under the LIFE-ASTI project. The results will refer to at least the present climate exhibiting the microclimate of regions of the city before and after the adaptation strategies.

Completion and maintenance of the adaptation measures implemented at the partner municipalities (Action C.7)

1. **Lakatamia Municipality** will enrich and enhance also other green area where the adaptation measure is situated (i.e. Linear park or other green area). The next two or three years Municipality of Lakatamia is planning to expand the Know how which has gained from participating at the LIFE URBANPROOF project and implement that knowledge into other key point areas. Also, inside the pilot case area the maintenance and growing of the green point sites will be continued.

2. **Strovolos Municipality** will enrich and enhance the green area where the adaptation measure is situated (park at Georgiou Iona street). The next two years the green area at Georgiou Iona Street will be continuously upgraded. The green infrastructure (canopy) will be installed, after building and other permits are issued as well as the final clearance is given by the Municipality's Technical Department to proceed. The walking lanes will be upgraded, the planting of trees and other plants will be completed in case there is a damage to existing plants. The installation of park's other equipment will be completed.

3. **Peristeri Municipality:** Sensors and Billboard operation and interconnections (GSM) has been insured (through guarantees and prepaid SIM cards) at least for the next three years by the company which installed the network. After that, the estimated budget for the system communications is about 200€/year.

Implementation and monitoring of the adaptation strategies (Action C8). All partner municipalities have foreseen in their adaptation strategies a budget for the implementation of the selected adaptation measures. So both the implementation of the adaptation measures and the monitoring of its progress based on the monitoring plan, are considered After-LIFE activities. **Partners involved:** All municipalities

Monitoring results from sensors (Action D.1):

1. **Inspection of the sensors, calibration and maintenance.** This involves both travels of the project team (NTUA, NOA) to the adaptation sites for inspecting the sensors and fixing problems as well as the purchase of consumables (e.g. batteries) for their maintenance. The costs may be covered by national funds, such as the General Secretariat for Research and Innovation (GSRI) of Greece.

2. For the case of Lakatamia, it is aimed that, as soon as we have measurements for a sufficient period of time and the data collected are checked, permeable concrete will be poured at the soil above the lysimeter, to measure the water infiltrated through this material in order to prove the permeability of the material.

Dissemination and communication of project results.

1. The overall dissemination and communication activities of the project will be continued uninterruptedly over the next three to five years. The project website and social media will be continuously updated throughout this period, while the notice boards will remain erected. The very successful networking activities, both with projects and selected events, will be supported, by the respective contact partners, and new opportunities for collaborations will be sought to boost the toolkit's use in other contexts. To this end, the toolkit website will be continuously supported by NTUA. Regarding **scientific dissemination**, publications will continue and all partners will pursue workshops/conferences. The foreseen scientific publications are:

- Giannis Lemesios, Konstantinos Varotsos, Anna Karali, Christina Papadaskalopoulou, Christos Giannakopoulos. Assessment of heat related climate change impacts on urban environment. The case of LIFE UrbanProof Project. Under development
- Giannis Lemesios, Vassilis Psiloglou, Christina Papadaskalopoulou, Maria Loizidou, Christos Giannakopoulos etc. Assessing the effect of adaptation measures in increasing resilience to climate change, with the use of monitoring data from a network of sensors.

2. The toolkit will also be included in the Hub for climate change adaptation in Greece that will be implemented by the Natural Environment & Climate Change Agency. Support will be provided by NTUA and NOA, if needed.

2.2 Other After-LIFE activities

Replication activities:

- 1. Submission of proposals for project funding from EC financial instruments** (Horizon, LIFE, Interreg etc.) and national funds. In particular, NTUA and NOA intend to include in future relevant proposals the upgrading of the UrbanProof toolkit so as to incorporate information for more indicators, more emission scenarios, more countries and/or higher analysis climatic resolution. **Partners involved:** NTUA, NOA
- 2. Sign contracts with municipalities of the 3 countries for the development of their Climate Action Plans** with the use of the UrbanProof toolkit. NTUA, NOA and IUAV through the contacts and collaboration they have with municipalities, may undertake the development of their Climate Action Plans. **Partners involved:** NTUA, NOA, IUAV
- 3. Demonstration of the UrbanProof toolkit and project to events** organized by the project partners and 3rd parties in the project and other countries. All partners will continue to promote the use of the toolkit to relevant occasions. **Partners involved:** ALL
- 4. Technology transfer to those that provide technical support and consulting services to municipalities** for the development of their SECAPs (on demand). This involves the transfer of the toolkit server to another server, or, the provision of access to other entities, in order to enable third parties to edit the toolkit databases and features. The terms of transfer may be defined based on the interests of individual parties.
- 5. Technical assistance and training seminars** to potential users of the URBANPROOF tool (on demand). The assistance and seminars will be provided by NTUA and NOA in Greece and Cyprus and IUAV in Italy.
- 6. Toolkit demonstration and training for higher education students.** NTUA and IUAV will present the UrbanProof toolkit through lectures and will also assign master theses on the use of the toolkit.
- 7. Promotion of the toolkit to the network of the project consortium** and investigation of their willingness for uptake.

Objectives and actions	Timetable	Partner	Budget (€)	Sources of finance
Dissemination and communication of the project results				
Maintenance and updating of the created websites for the UrbanProof project, the UrbanProof toolkit and the UrbanProof monitoring platform	2021-2026	NTUA NOA	5000 1000	Own budget
Maintenance of the erected notice boards	2021-2026	All	No funding sources are required	N/A
Maintenance and enrichment of the project social media (facebook, twitter)	2021-2026	IUAV NOA	500 (each)	Own budget
Continuation of networking and exchange of experiences with other LIFE/ non LIFE projects	2021-2026	All	300 (each)	Own budget/EU project financing
Participation and promotion of the project and its results in various workshops, conferences, seminars in regional/ national/international level (physical and online events)	2021-2026	All	2000 (NTUA) 1500 (NOA) IUAV (500) MANRE (500)	Own budget
Dissemination of project information material during events	2021-2026	NTUA-NOA- IUAV-MANRE STROVOLOS- LAKATAMIA- EMILIA- PERISTERI	150 (each) 100 (each)	Own budget
Scientific publications	2021-2023	NOA NTUA	500 (each)	Own budget
Completion and maintenance of the adaptation measures implemented at the partner municipalities				
Enrich green area at Georgiou Iona street	2021-2023	STROVOLOS	80000	Own budget
Enrich green area at Melina Merkouri rounabout	2021-2024	LAKATAMIA	90000	Own budget
Sensors and Billboard operation and interconnections	2021-2026	PERISTERI	400	Own budget
Implementation and monitoring of the adaptation strategies				
Implementation and monitoring of the developed adaptation strategies	2021-2026	All municipalities	As foreseen in SECAPs	Own budget

Objectives and actions	Timetable	Partner	Budget (€)	Sources of finance
Monitoring results from sensors				
Inspection of the sensors, calibration and maintenance	2021-2024	NOA-NTUA	7000	Own budget, GSRI
Testing the lysimeter with other land uses, i.e. permeable pavement	2021-2022	NTUA - LAKATAMIA	2000	Own budget
Replication and uptake of the project methodology and results				
Submit project proposals for funding from EC financial instruments (ESIF, LIFE, Interreg etc.)	2021-2026	NTUA-NOA	1000 (each)	Own budget
Sign contracts with municipalities for applying the tool and conducting impact assessments/ developing adaptation strategies	2021-2026	NTUA-NOA-IUAV	-	Funded by third parties
Expand tool databases to include other countries (On demand)	2021-2026	NTUA-NOA	-	Funded by third parties
Technical assistance and training to potential users of the URBANPROOF tool				
Toolkit demonstration and training for higher education students	2021-2026	NTUA-IUAV	1,500 (each)	Own budget
Training seminars to potential users	2021-2026	NTUA-NOA-IUAV	3,000 (each)	Own budget/Funded by third parties
Provision of technical assistance to potential users of the UrbanProof toolkit	2021-2026	NTUA-NOA-IUAV	1,500 (each)	Own budget