



# Life CLIVUT Climate Value of Urban Trees

LIFE18 GIC/IT/001217



## ACTION D MONITORING OF THE IMPACTS OF THE PROJECT ACTIONS: D2 Socio Economic assessment monitoring protocol

August 2020



[lifeclivut.eu](http://lifeclivut.eu)

**PARTNERS**

The LIFE CLIVUT project - LIFE18 GIC/IT/001217 has received funding from the LIFE Programme of the European Union.

**Coordinating beneficiary:**



**Name of the associated beneficiaries:**



PROGRAMME	LIFE 2014 – 2020 LIFE Climate Governance and Information
PROJECT ACRONYM	LIFE-CLIVUT
PROJECT CODE	LIFE18 GIC/IT/001217
TITLE	ACTION D MONITORING OF THE IMPACTS OF THE PROJECT ACTIONS
ACTION/TASK RELATED	D.1 LCA of Environmental and Climate of the Urban Climate Green Assets Strategy
ACTION/TASK RELATED	D2 Monitoring of Socio Economic Impact
VERSION	First version August 2020
AUTHOR(S)	UNIPG- DICA
APPROVED	approved by all partners in December 2020

## Introduction

Climate change has been identified as one of the main threats to humanity and to the long-term persistence of the living world in general (IPCC 2007).

The LIFE CLIVUT General Objective is to develop and implement the Urban Climate Green Asset Strategy in medium-size Mediterranean cities based on the shared planning and management of the urban green and natural spaces by urban planners and citizens.

The Strategy, designed according with an ecosystem-based approaches, will maximize urban green asset climate mitigation potential and deliver biodiversity and nature conservation benefits improving human safety, health and wellbeing.

Action D “MONITORING OF THE IMPACTS OF THE PROJECT ACTIONS” is divided in 2 sub actions:

- D1 LCA of Environmental and Climate of the Urban Climate Green Assets Strategy
- D2 Monitoring of Socio-Economic Impact

It is specifically designed to measure the effectiveness of the project actions, as compared to the initial situation, the objectives and expected results.

lifeclivut.eu



Partners: The LIFE CLIVUT project - LIFE18 GIC/IT/001217 has received funding from the LIFE Programme of the European Union.



## Monitoring Process during Life Clivut project

The monitoring activity will be realized mainly in three times during the project implementation through the collection and elaboration of quantitative or qualitative information related to the project progress in each Municipality.

The first one at the beginning of the implementation phase, end of 2020 – a second one from October 2021 to December 2021 - and a third one at the end of the project that corresponds to the beginning of 2023.

**Table 1: Timing for data collection of the quantitative data**

	Timing
<b>First Monitoring Activity</b> (Defining the Baseline)	From November 2020 to end of February 2021 after the approval of the Monitoring Protocol (December 2020)
<b>Mid-term monitoring activities</b>	October 2021 to December 2021
<b>Third Monitoring Activity</b> (Including the Impact Assessment of the measures included in the Green Asset Strategic Plan)	At the end of the project (end of 2022 and beginning of 2023).

For specific Actions the monitoring will regard qualitative data focused on the monitoring and assessment of the increase of awareness and Knowledge of the different targets of the project: citizens, Public Administration and Planners, Students, Entrepreneurs. It will be carried on through enquires to the different participants. Therefore the data collections will be implemented in two times at the beginning and at the end of related actions/sub-actions.

## Action D2: Monitoring of Socio Economic Impact

The socio-economic impact on citizens will be estimated in relation of direct and indirect actions in which they take parts.

Direct effects deriving from the behaviour change due to the participation in the action C1, C2, C3 and C4 (as energy saving), increase utilization of green areas and related knowledge.

Indirect effect deriving from the implementation of the Urban Climate Green Asset Strategic Plans by the Municipality, the owners of private green spaces and the entrepreneurs. (see indicators 8 and 9 of previous paragraph).

### Indicator of direct social effects of the project actions (and the related methodology)

The measuring and updating the changes in attitudes and practices of the target audiences will be carried out through follow-up activities with the participants in the various actions and through surveys to citizens with both online and face-to-face questionnaires.

#### a) follow-up activities with the participants for action C1 C2, C3 AND C4:

- questionnaire for citizens, stakeholders and students in University have been prepared and is available at

[https://docs.google.com/forms/d/e/1FAIpQLSeNsujOJOLD71qfgkKWKKT9OF4MNKEgfX2ejoua-q9OyPSBmw/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSeNsujOJOLD71qfgkKWKKT9OF4MNKEgfX2ejoua-q9OyPSBmw/viewform?usp=sf_link)

- questionnaires for students of schools have been prepared and are available at <https://forms.gle/WVG5zEyWRN7v6uG89>

#### b) surveys to citizens (random sample)

- a short questionnaire for citizens will be prepared starting from the one prepared for citizens participating in Action C2

[https://docs.google.com/forms/d/e/1FAIpQLSeNsujOJOLD71qfgkKWKKT9OF4MNKEgfX2ojoua-q9OyPSBmw/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSeNsujOJOLD71qfgkKWKKT9OF4MNKEgfX2ojoua-q9OyPSBmw/viewform?usp=sf_link)

The questionnaire will be administered to a random sample of 200 citizens in each pilot city in spring 2021 and at the end of 2022. The results will be elaborated in a comparative study.

lifeclivut.eu



**PARTNERS**  
The LIFE CLIVUT project - LIFE19 002/IT/000017 has received funding from the LIFE Programme of the European Union.

**Coordinating beneficiary:**



**Name of the associated beneficiaries:**



Criteria	Indicator	2020	2021	2022	2023	Methodology
Citizen Awareness raising	% of Citizens Knowledge and awareness on Climate Change and Urban Trees		First administration / baseline	Second administration	Elaboration	Questionnaire random sample of Citizens in each Pilot City
Persons who may have been influenced via dissemination or awareness raising project-actions	Number of participants in the Capacity Building Act e Study Group C1	X	X		X	Attendance register
	Number of student (per level) participating in A C3		X	X	X	Attendance register
	Number of Citizens Associations ( and number of associated) participating in A C2	X	X	X	X	Municipality and direct investigation
	Number of Citizens participating to events /Forum of action C1			X	X	Attendance register Data from the website
	Number of Entrepreneurial Associations (and entrepreneurs associated) participating in the workshop of Action C4		X		X	Attendance register
	Number of entrepreneurs Contacted during the project for the emission calculation and compensation)				X	X
Persons whose lives were directly, positively impacted by MAIN envir. actions of project -	Change in Knowledge and behaviour of participant in the project		administration to students/ administration to entrepreneurs	administration to students		questionnaire for students Questionnaire for entrepreneurs

Others indicators of social impact (from LIFE Key Project Indicators)

**01 – Implication of NGO including interventions supporting EU environmental (NGO) e stakeholders**

This indicator estimates the representatives of citizens' or trade associations involved in the project and in the actions aimed to increase the knowledge of the importance of trees in the urban environment for the reduction of greenhouse gas emissions and their effect on the heat island. (Actions C2 and C4)

Associations	2020	2021-2022	2023
No. of, national ,regional and municipal associations participating in the project ( in actions or networking)			

**02 - Implication of NGO including interventions supporting EU environmental and/or climate change policies and of other stakeholders [local authorities]**

This indicator estimates the number of regional and municipal political and technical representatives with increased knowledge on the importance of urban trees for the mitigation of Climate Change effects on Cities (action C.1 as a whole).

Local authorities	2020	2021-2022	2023
No. of regional and municipal political and technical representatives with increased knowledge on the importance of trees for climate mitigation			

**03 - Implication of NGO including interventions supporting EU environmental and/or climate change policies and of other stakeholders [professionals ]**

This indicator estimates the number of professionals (urban planners, agronomist etc.) contacted/ involved in the project

lifeclivut.eu

**PARTNERS**

The LIFE CLIVUT project - LIFE18 002/IT/000017 has received funding from the LIFE Programme of the European Union.

**Coordinating beneficiary:**



**Name of the associated beneficiaries:**



representatives with increased knowledge on the importance of the climate adaptation process involved in region (all actions).

Professionals	2020	2021-2022	2023
No. of professionals al associations participating in the project ( in actions or networking) with increased knowledge on the importance of trees for climate mitigation			

**04 - Information and awareness - General public reached and/ or made aware – website [total/reach/awareness-raising]**

The ISG was the partner responsible for the realization of the website project, that can be found at the following web address: <http://www.lifeclivut.eu/>.

In the web site the contents of the site have been provided by the various partners, and ISG is responsible of monitoring inflow and download of data.

The project website will be monitored to assess the presence of visitors throughout the duration of the project and website statistics will be collected and used as indicator.

	. 2020	2021	2022	End project
Website- n° of visit of individuals (Total)				
Website- n° of visit of individuals reached				
Website- n° of regularly visiting by individuals				

**05 - Information and awareness - General public reached and/ or made aware - other tools for**

lifeclivut.eu



The LIFE CLIVUT project - LIFE18 002/IT/000017 has received funding from the LIFE Programme of the European Union.



Name of the associated beneficiaries:



**reaching/raising awareness of the general public [-Leaflet Twitter- Instagram – YouTube pages fans]**

This indicator regards the other tools used to raise awareness about climate change and to reach general public used as distribution of leaflets, a Facebook page of the Project Life Clivut, Twitter and Instagram to reach a wider public, and the Youtube channel.

	2020	2021	2022	End project
Other tools for reaching/raising awareness of the general public- n°of leaflets				
Other tools for reaching/raising awareness of the general public- n°of project Facebook page followers				
Other tools for reaching/raising awareness of the general public- n°of visit of twitter,				
Other tools for reaching/raising awareness of the general public- n°of visit of Instagram				
Other tools for reaching/raising awareness of the general public- n°of visit of Youtube Channel				

**06 – Capacity Building - Conference/Final conference**

As networking activity, throughout the project, all the partner organized a series of conference to create a wider audience for Life Clivut and raise awareness about climate change. This indicator estimates the number of participants to the conferences in the municipalities partner of the project.

	2020	2021-2022	2023
Networking and other professional training or education - Press Conference - N° of individuals reached			



Networking and other professional training or education - Final Conference - N° of individuals reached			
--	--	--	--

## Economic Impact

The indicators for the assessment of the economic impact are summarized in the following table:

INDICATORS	BASELINE	PROJECT RESULTS	Sources of Data
Managerial cost of green area	Actual Pilot Municipality expenditure for green infrastructure management	Pilot municipality expenditure for green infrastructure management	Pilot Municipality Budget
Cost of New investment on public and private urban green areas		Cost of new trees plantation	Pilot Municipality Interview to project targets and nurseries
New jobs place created		Estimation of job activated by new plantation and their management	Leterature and direct interviews to gardners and municipality
Energy cost of the public and private building presence in the area of the new plantation		Data from the census of new trees plantation ( see Action D1)	actual energy cost in sample building (construction typology) Energy cost of the sampling building with trees
Carbon credit deriving from the implementation		see action D1	International carbon Market
Economic value of the compensation measures included/recommended by the Strategic Plan (in carbon credit)		see action C4 and D1	Case studies

## Other economic indicators (from LIFE Key Project Indicators)

### Jobs - Full Time Equivalents

A full-time equivalent is a unit to measure new employed persons in a way that makes them comparable although they may work a different number of hours per week. Throughout the Life Clivut , It has been indisputable that municipalities need additional personnel to conduct project's activities and to carry on those activity after the project end. This kind of project therefore brought a really added value to the partners, making possible to hire professionals who, at the same time, have gained experience on the climate change topic on a local level. After the end of the project we expect new job creation due to the implementation of actions contained in the Green. In this indicator we estimate the number of jobs activated during the project and after its end.

lifeclivut.eu



The LIFE CLIVUT project - LIFE19 002/IT/000217 has received funding from the LIFE Programme of the European Union.

PARTNERS

Coordinating beneficiary:



Name of the associated beneficiaries:



FTE	2020	2021-2022	End project
Number of FTE directly activated during the project			
Number of FTE activated by the action of the project (due to the new trees plantations/substitutions and their maintenance after the project)			

**Economic Growth - Running costs during the project**

This indicator is deeply connected with the previous one, because one of the main cost for partners of this project has been additional staff, necessary to carry on project’s activities supporting the permanent staff.

	Mid term	2022	End project
Running cost/operating costs during the project			

**Economic Growth – Capital Expenditure expected in case of continuation**

This indicator is deeply connected with the previous ones, because one of the main capital expenditure consist in the plantation /substitution of trees. The indicator will be estimate for the continuation of the project / transfer in other Cities.

**Annex I – Indicator lists (including LIFE Key Project Indicators)**

INDICATORS	DESCRIPTORS	DEFINITION	IMPACT UNIT
<b>URBAN ENVIRONMET</b>			
Mitigation – Green Infrastructure (specific of the Life Clivut Project)			
Green improvement Areas	N OF new tree	Number of trees planted during the project (public and private areas)	number
	N OF new trees	Number of trees substituted during the project (public and private areas)	number
Partial reduction of specific pressures KEI code 1,5			
Partial reduction of specific pressures	Area covered by new/substituted trees	Area covered by mitigation effect of new planted and substituted trees in the cities	Ha
Mitigation – Greenhouse Gas Emission KEI code 8.2			
CO2	/	Amount of CO <sub>2</sub> captured by trees planted/substituted during the project	metric tons/year
	/	Amount of CO <sub>2</sub> stored by trees planted/substituted during the project	metric tonsr
Mitigation – Electricity reduction due to Temperature reduction by tree (specific of the Life Clivut P)			
Temperature reduction	External Temperature reduction	Temperature reduction by the trees evaporation	Watt/mq
Electricity reduction	Internal building temperature reduction	Temperature reduced inside the building by the trees shadow effect,	Kw/h
Air Quality – Pollutants concentration KEI code 6.2			
– Pollutants concentration	NOX		ppm
	SO2		ppm
	PM10		ppm
Air Quality – PM10 sequestration (specific of the Life Clivut P)			

PM10 sequestration		PM10 captured by new trees	ppm
Biodiversity- KEI code 7.5.1			
Alien species removed		Amorpha fruticosa Ailanthus altissima Catalpa bignonioides	N/ha
Coverage / Range of the environmental / climate change impact (specific of the Life Clivut P)			
Total area to be affected by the project	km <sup>2</sup> of total area to be affected by the project	Total area to be affected by the project	km <sup>2</sup>
Total human population to be affected by the project	No. of individuals to be affected by the project	Individuals to be affected by the project (	No. of individuals
Population directly affected by the project actions in climate terms.		No of individual living within 500 mt from the area of new trees plantation	No. of individuals
Ecosystem KEI code 7.2			
Ecosystem Service Condition	Actual importance of Ecosystem services in Green Regulations	Analysis of actual green areas regulation/plan in Pilot cities	Qualitative
Ecosystem Service Trend	importance of Ecosystem services in Green regulation	Improvement of concern and action regarding Ecosystem Services in Green Area Regulation/Plan	Qualitative

INDICATORS	DESCRIPTORS	DEFINITION	IMPACT UNIT
CITIZEN AWARENESS RAISING			
Citizens awareness KEI code 11.3			
Increase of citizens awareness		Elaboration of questionnaire to a random sample of citizens in pilot cities (two administration)	N of interviews
Persons whose lives were directly, positively impacted by actions of project			

Governance KEI code 10.2			
Capacity building actions	Civil Servant Professional Entrepreneurs	Number of persons participating in action C1.1 and in C4	Number N of interviews
Education actions	All level education	Number of students involved in action C3	Number N of interviews
Demonstration actions	Citizens	Number of Association and associate members involved in action C2	Number N of interviews
Implication of NGO including interventions supporting EU environmental and/or climate change policies and of other stakeholders	No. of NGO involved in the project	Number of NGO and/or other civil society aggregations (e.g. neighborhood committees,...) involved by project partners during the project implementation and participating to the Green Asset strategic Plan definition	No. of NGO and other civil society aggregations
	local authorities	Regional and municipal political and technical representatives with increased knowledge on the importance of the climate adaptation process at municipal level	No. of regional and municipal political and technical representatives
	Other organizations: A. Agriculture, forestry and fishing C. Manufacturing Q. Human health and social work activities	Other organizations by the NACE codes involved in the Green Asset strategic Plan definition	No. of organizations involved
	other interventions supporting EU environmental or climate change policies	Municipalities that have used the Life Clivut Platform ( not included in the transfer Cities)	No. of municipalities

INDICATORS	DESCRIPTORS	DEFINITION	IMPACT UNIT
Capacity Building KEI code 11,2			
Networking and other professional media	Press conference	Individuals reached by press conferences	No. of individuals reached
	Final Conference	Individuals included in or participated in the final conference of the project	No. of individuals involved
	Publication	Publication on specialized journal	No. of publications/papers

INDICATORS	DESCRIPTORS	DEFINITION	IMPACT UNIT
<b>ECONOMIC IMPACT</b>			
Economic values			
Municipality expenditure for green areas	Increase due to the Green Asset Strategy	Estimated Increase of Municipality expenditure for green areas in pilot cities	EURO
New investments	Cost of investments in green areas	Cost of investment in green areas from fund other than the project during the project	EURO
Carbon Credit	Value of CO2 sequestration	Carbon credit deriving from the implementation of Project actions	EURO/year
Economic value of the compensation measures included/recommended by the Strategic Plan	Case studies	LCA of actions/incentives included in the Green Assets Strategic Plan	EURO

INDICATORS	DESCRIPTORS	DEFINITION	IMPACT UNIT
Jobs KEI code 13			
Full-time equivalents (FTE)		A full-time equivalent is a unit to measure employed persons in a way that makes them comparable although they may work a different number of hours per week. The unit is obtained by comparing an employee's average number of hours worked to the average number of hours of a full-time worker.	No. of FTE

Economic growth KEI code 14.1 e 14.2.1			
Running cost/ during the project and expected in case of continuation/ replication/ transfer after the <i>project period</i>	Continuation	Running costs/operating costs include all regular eligible costs budgeted in the project's proposal necessary to apply the method/technique/practice during the project (personnel, travelling, external assistance, depreciation; consumables, overheads), without durable goods.	EURO
Capital expenditure expected in case of continuation/replication/transfer after the project period		Capital expenditure expected in case of continuation/replication/transfer after the project period	EURO
Entry into new entities/projects	Continuation	New projects joined by <i>Life Clivut</i> participants	No. new projects
	Replication	New entities that join the <i>Life Clivut Platform</i>	N. new entities


***Annex II – Partners responsible and sources of information for each indicator***

INDICATORS	PARTNERS RESPONSIBLE	SOURCES OF INFORMATION
Green Areas improvement (trees)	All partners	Municipal data Life Clivut Platform
Partial reduction of specific pressures	All partners	Ha of area interested by the effect of new plantation/trees substitutions
CO2	UNIPG	Life Clivut Platform elaboration
Temperature reduction	UNIPG	Life Clivut Platform elaboration
Electricity Reduction	All partners	Direct monitoring
Area potentially affected by climate change covered by adaptation measures	Each municipality involved in the project and Adep	Vulnerability assessments and adaptation plans
Air Pollutants concentration	All partners	Environmental statistic data
PM 10 sequestration	UNIPG	Life Clivut Platform elaboration
Alien species removed	All partners	Municipal data
Total area to be affected by the project	All partners	Municipal data
Total human population to be affected by the project	All partners	Municipal data



INDICATORS	PARTNERS RESPONSIBLE	SOURCES OF INFORMATION
Population directly affected by the project actions in climate terms	All partners	Municipal data
Ecosystem Services Condition	All partners	Municipal data
Ecosystem Services Trend	All partners	Municipal data and data from the Green Asset Strategic Plan
Increase in citizen awareness	All partners	Elaboration of Citizens' questionnaire
Capacity Building actions	All partners	Attendance registers
Education Actions	All partners	Attendance registers
Demonstrations Actions	All partners	Attendance registers
Implication of NGO including interventions supporting EU environmental and/or climate change policies and of other stakeholders:  No. of NGO and other civil society aggregations	All partners	All-partner on the basis of NGOs involved in the different actions
No. of regional and municipal political and technical representatives	All partners	All partners on the basis of all the technical and political representatives who participated throughout all the project
No. of other organizations involved	All partners	All partner on the basis of organizations involved during the project
Other interventions	UNIPG	All partners on the basis of other Municipalities using the Life Clivut Platform

INDICATORS	PARTNERS RESPONSIBLE	SOURCES OF INFORMATION
Website; no. of visit of individuals (total);	ISGH	Website statistics
no. of visit of individuals;		
no. of regularly visiting individuals		
No of leaflet distributed	All partners	PrPrinted leaflet
No of Facebook Pages Fans	UNIPG	Facebook statistics
No of contacts on others social media (Twitter, Youtube)	UNIPG	Social mediastatistics
Press conference	All partners	Attendance registers
Final Conference	UNIPG	No of Participants
Municipality expenditure for Green Areas	All partners	Municipal data
Investment in green areas not funded by the project	All partners	Municipal data
Carbon credit generated during the project by new/substituted trees	UNIPG	Life Clivut Platform elaboration
Economic value of compensation measures proposed in the Green Asset Strategic Plan	UNIPG	LCA and LCc elaboration of Case studies
Full-time equivalents (FTE)	All Partners	Municipal or company data

INDICATORS	PARTNERS RESPONSIBLE	SOURCES OF INFORMATION
Running cost/operating costs during the project and expected in case of continuation/replication/transfer after the project period		All partners on the basis of their own financial report
Capital expenditure expected in case of continuation	UNIPG	All partners on the basis of their transfer activities
Entry into new entities/projects: No. new projects	All Partners and Municipalities	All partners on the basis of their own financial report
N. new entities		

lifeclivut.eu



The LIFE CLIVUT project - LIFE18 002/IT/0000337 has received funding from the LIFE Programme of the European Union.

