II International Conference ADAPTtoCLIMATE
Heraklion (Crete Island) 24-25 June 2019

An online system for the monitoring of local climate change adaptation plans

F. Giordano, I. Leoni, A. Scaramella, E. Taurino, S. Viti, D. Santonico
Institute for Environmental Protection and Research
Via V. Brancati, 48 – 00144 Rome (IT)

Programme for environment and climate action LIFE 2014-2020
Life SEC Adapt Project
LIFE14 CCA/IT/000316

Project financed with the contribution of LIFE Programme 2014-2020
Summary

• The LIFE SEC-ADAPT Project

• Monitoring, Reporting, Evaluation

• Adaptation indicators

• The system for the monitoring of adaptation and mitigation plans

• Key findings and further steps
The LIFE SEC ADAPT Project

**TITLE:** Upgrading Sustainable Energy Communities in Mayor Adapt initiative by planning Climate Change Adaptation strategies

**ACRONYM:** Life SEC Adapt

**DURATION:** 01/09/2015 – 30/06/2019

**BUDGET:** € 3,213,785,00

**UE FINANCIAL CONTRIBUTION:** 1,928,225,00 (60% of the total budget)
THE PARTNERSHIP

The partnership involves four EU Member States:  
**Italy, Croatia, Spain, Greece**

**Coordinating Beneficiary:** Sviluppo Marche (SVIM) Srl  
**Associated beneficiary:** Region of Istria  
Istrian Development Agency

20 EU Municipalities involved in the project:  
- 12 from Marche Region SEC (IT)  
- 6 from Istria Region (HR)  
- 1 from Spain (Bullas)  
- 1 from Greece (Patras)
OBJECTIVES OF THE PROJECT

GENERAL OBJECTIVES

- To improve the adaptive capacity of municipalities involved through the Covenant of Mayors for Climate and Energy and integrate European climatic objectives into local policies and practice.

- To upgrade the model of the Sustainable Energy Communities (SEC), in supporting the improvement of climate governance in the development of adaptation strategies and actions.

SPECIFIC OBJECTIVES

- To increase awareness of local and regional decision makers.

- To contribute to reduce the knowledge gap of local and regional administrators on vulnerabilities and risks of the territories.

- To sign and adopt climate change adaptation strategies and plans by the 17 municipalities beneficiaries in the framework of the new integrated Covenant of Mayors for Climate and Energy.

Project financed with the contribution of LIFE Programme 2014-2020
PROJECT ACTIONS

ACTION A1
Working teams and climate baseline assessment definition

ACTION C1
Communities engagement and best practices towards Mayors Adapt objectives

ACTION C2
Risk and Vulnerability Assessment

ACTION C3
Adoption of Local Climate adaptation strategy and plans through SEAP integration

ACTION C4
Setting up and testing of a climate and energy data monitoring system

STEP 1
Conceptual framework of the Energy and Climate monitoring system

STEP 2
Ideation of the Energy and Climate monitoring system structure

STEP 3
Definition of a list of climate and energy monitoring indicators

STEP 4
Creation and testing of the climate and energy monitoring system open source application

"With the contribution of the Life Programme of the European Union"
THE ADAPTATION POLICY CYCLE

1. PREPARE THE GROUND
2. ASSESS CLIMATE CHANGE VULNERABILITIES AND RISKS
3. IDENTIFY ADAPTATION OPTIONS
4. ASSESS ADAPTATION OPTIONS
5. IMPLEMENT ADAPTATION ACTIONS
6. MONITOR, REPORT, EVALUATE (MRE) AND UPDATE THE PLAN
7. INVOLVE STAKEHOLDERS
8. INTEGRATE ADAPTATION INTO SECTORAL POLICIES
9. COMMUNICATE AND RAISE AWARENESS

Project financed with the contribution of LIFE Programme 2014-2020
WHAT DOES MRE MEAN?

**MONITORING**
Monitoring refers to a continuous and systematic process aiming at examining **the progress made in planning and implementing climate change adaptation policy, or programme or other intervention**.

The objective of monitoring can be described as being “to keep track of progress made in implementing an adaptation intervention” by using systematic collection of data on specified indicators and reviewing the measure in relation to its objectives and inputs, including financial resources (EEA, 2014).

**REPORTING**
Reporting is the process by which monitoring and/or evaluation information is formally communicated, often across governance scales.

Reporting can enable the assessment of adaptation performance, and facilitate learning.

It can be voluntary or a legal requirement (EEA, 2014).

**EVALUATION**
Evaluation refers to the systematic, transparent and objective process of evaluating the effectiveness of a climate change adaptation policy, programme or other intervention in terms of specific objectives of reducing vulnerability or increasing the resilience.

Evaluation could use both qualitative and quantitative data taken from various sources, including those data collected through the monitoring process (EEA, 2014).
ADAPTATION INDICATORS

INDICATORS are among the most used tools within the MRE systems in various European countries and outside Europe. The main objectives are:

(i) **to monitor** the implementation of adaptation policies, measures and actions;

(ii) **to justify and monitor** funding for adaptation programmes based on the objectives previously established;

(iii) **to communicate** adaptation to decision-makers and stakeholders.

**PROCESS-BASED INDICATORS**
Aim at the monitoring of the progress in the implementation of adaptation measures

**EXAMPLE**
*Production of local adaptation guidance*

**OUTCOME-BASED INDICATORS**
Aim at the monitoring of the effectiveness of the adaptation measures in the achievement of the established results (i.e. reducing vulnerability/increasing resilience)

**EXAMPLE**
*Number of injured due to extreme events*
STEP 1 - Conceptual framework of the Energy and Climate monitoring system

**MITIGATION**
- Process-based Indicators
  - Energy Consumption
  - Energy Production

**ADAPTATION**
- Process-based Indicators
  - Vulnerability
  - Impact

City level
- SEC Energy Consumption
- SEC Energy Production
- SEC Investment

SEC level
- SEC Policy/Planning
- SEC Capacity
- Building/Awareness
- SEC Information Management
- SEC Investment

Project financed with the contribution of LIFE Programme 2014-2020

“With the contribution of the Life Programme of the European Union”
STEP 2 - Ideation of the Energy and Climate monitoring system structure

**Administrator**
System manager

**Thematic expert**
Decoding tables management and update

**User**
Environmental and energy data entry and update

**Access rights**
- Has a free access to all levels
- Can create/disable the user account
- Has the right to change the permission of the user levels

**CODE & PARAMETERS**
- Adaptation indicators
- SEC Indicators
- Indicators typologies
- Adaptation sectors
- Unit of measure

**MONITORING EVALUATION**

**ADAPTATION INDICATORS**
- LOCAL ACTION PLAN
- ADAPTATION ACTIONS

**SEC INDICATORS**

**REPORTING**

Project financed with the contribution of LIFE Programme 2014-2020
STEP 3 - Definition of a list of climate and energy monitoring indicators (1)

About 150 adaptation indicators

PROCESS-BASED INDICATORS

OUTCOME-BASED INDICATORS

- IMPACT INDICATORS
- VULNERABILITY INDICATORS
- EXPOSURE
- SENSITIVITY
- ADAPTIVE CAPACITY
STEP 3 - Definition of a list of climate and energy monitoring indicators (2)

ADAPTATION SECTORS

- WATER RESOURCES
- BIODIVERSITY
- TERRITORY
- HEALTH
- FORESTRY
- AGRICULTURE
- COASTAL ENVIRONMENT
- TRANSPORT & INFRASTRUCTURE
- TOURISM & CULTURAL HERITAGE

With the contribution of the Life Programme of the European Union

Project financed with the contribution of LIFE Programme 2014-2020
STEP 3 - Definition of a list of climate and energy monitoring indicators (3)

ADAPTATION INDICATORS

5 SEC adaptation indicators

- Budget for adaptation intervention
- Economic losses due to extreme weather events
- N adaptation actions
- N citizens involved in awareness raising initiatives
- N beneficiaries citizens
**STEP 4 - Creation and testing of the climate and energy monitoring system open source application (1)**

<table>
<thead>
<tr>
<th>Entity</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comune di Ancona</td>
<td>2015</td>
</tr>
<tr>
<td>Comune di Ancona</td>
<td>2013</td>
</tr>
<tr>
<td>Comune di Ancona</td>
<td>2011</td>
</tr>
<tr>
<td>Comune di Ancona</td>
<td>2012</td>
</tr>
<tr>
<td>Comune di Ascoli Piceno</td>
<td>2011</td>
</tr>
<tr>
<td>Comune di Ascoli Piceno</td>
<td>2012</td>
</tr>
<tr>
<td>Comune di Ascoli Piceno</td>
<td>2013</td>
</tr>
<tr>
<td>Comune di Ascoli Piceno</td>
<td>2015</td>
</tr>
<tr>
<td>Comune di Fabriano</td>
<td>2011</td>
</tr>
<tr>
<td>Comune di Fabriano</td>
<td>2012</td>
</tr>
</tbody>
</table>

*With the contribution of the LIFE financial instrument of European Union*
STEP 4 - Creation and testing of the climate and energy monitoring system open source application (2)

Each action is linked to one or more adaptation indicators.

Project financed with the contribution of LIFE Programme 2014-2020
STEP 4 - Creation and testing of the climate and energy monitoring system open source application (3)

THE DASHBOARD

Visualization of data trends at city and SEC

- implementation state of actions
- effectiveness of adaptation actions
STEP 4 - Creation and testing of the climate and energy monitoring system open source application (4)

- TRAINING SESSION
- TESTING OF THE SYSTEM
- USER MANUAL
Key findings

- MRE systems should be intrinsecally flexible, in order to allow changes in the future.
- The indicators selection should reflect the scopes and objectives of the MRE system. For this reason it should be ensured that objectives could be measured, monitored and their effects be evaluated.
- Indicators should be clearly defined and should include both process and outcome-based indicators.
- Process and outcome-based indicators should be shared and better clarified (i.e., adaptive capacity, sensitivity, etc).
THANK YOU FOR YOUR ATTENTION!

Project Website: http://www.lifesecadapt.eu/it/

CONTACTS:

Lucia Catalani (Coordinator)
SVIM - Sviluppo Marche
lcatalani@svim.eu

Francesca Giordano (Technical-scientific assistance)
Institute for Environmental Protection and Research
francesca.giordano@isprambiente.it

“With the contribution of the Life Programme of the European Union”

Project financed with the contribution of LIFE Programme 2014-2020