



**E<sup>2</sup>STORMED**

IMPROVEMENT OF ENERGY EFFICIENCY IN THE WATER CYCLE BY THE USE OF  
INNOVATIVE STORM WATER MANAGEMENT IN SMART MEDITERRANEAN CITIES

<http://www.programmemed.eu/>



# The project: idea and data

**IDEA :** Improvement of energy efficiency in the water cycle by the use of innovative storm water management in smart Mediterranean cities.

**THEME :** *Integrated storm water management, energy efficiency, local governance.*

**PROGRAMME OBJECTIVE : Axis 2.** Protection of the environment and promotion of a sustainable territorial development.

**Objective 2.2.** Promotion of renewable energies and improvement of energy efficiency.

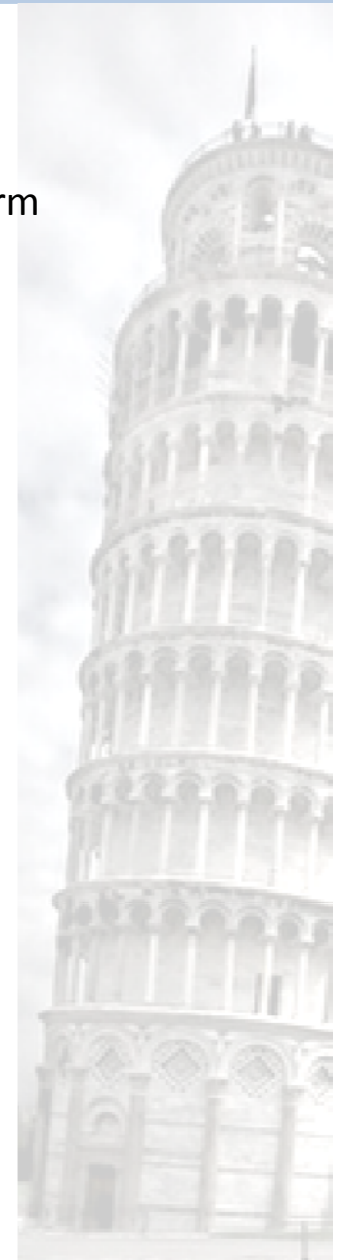
**DURATION:** 30 months (Jan 2013 – Jun 2015)

**BUDGET:** 1.580.000 euro



The project aims at improving existing integrated management tools by incorporating energy efficiency indicators for storm water management in urban areas, adapting them to, and testing them by, MED cities.

Lo scopo finale del progetto è quello di migliorare gli strumenti di gestione integrata esistenti includendo indicatori di efficienza energetica per la gestione delle acque meteoriche nelle aree urbane delle città MED, adattandoli e verificandoli.





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# The partners

**LP** : Polytechnic University of Valencia (ES).

**P2** : Grana and Maira Valleys M.C. (IT)

**P3** : Municipality of Benaguasil (ES)

**P4** : Municipality of Pisa (IT)

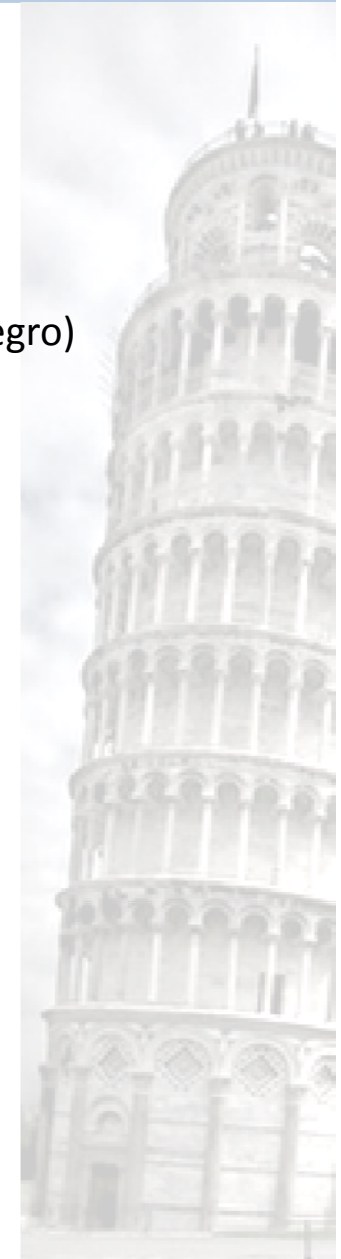
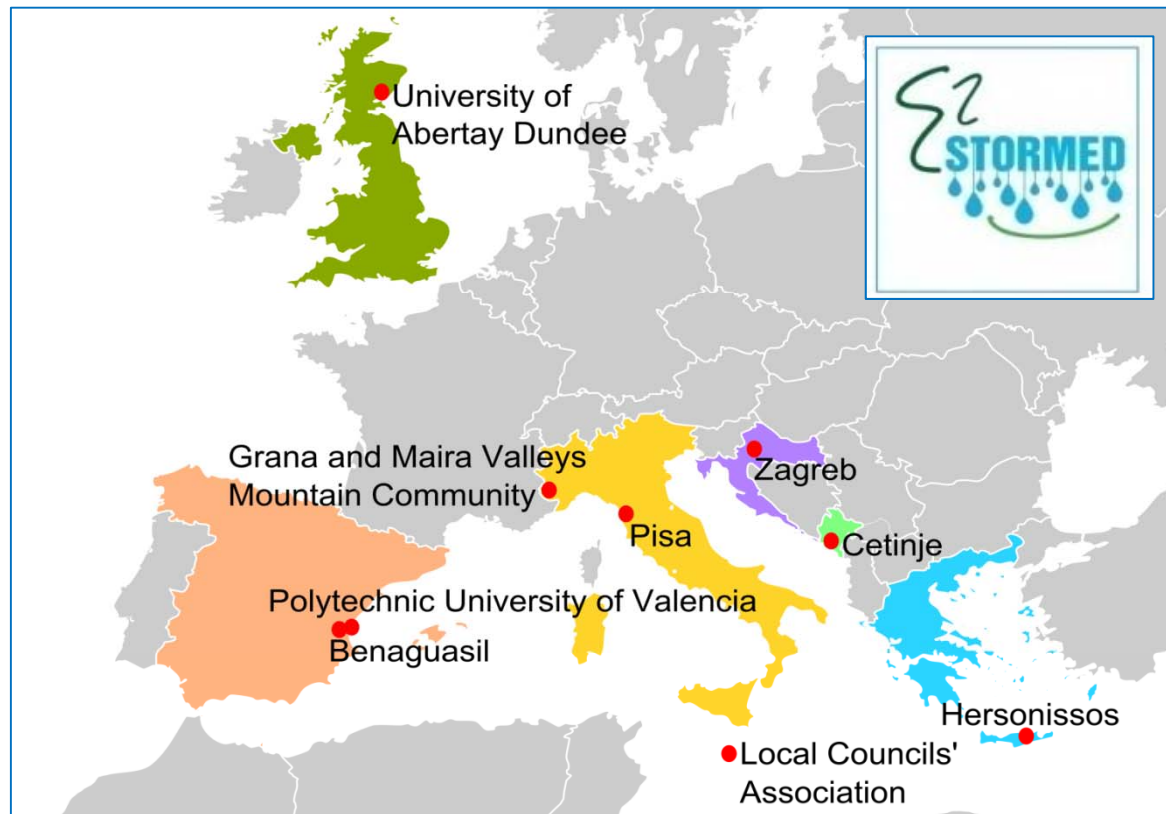
**P5** : Local Councils' Association (Malta)

**P6** : Municipality of Heronissos (GR)

**P7** : University of Abertay Dundee(UK)

**P8** : Old Royal Capital Cetinje(Montenegro)

**P9** : City of Zagreb (Croatia)





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# Project Structure: 4 work packages

**WP 1.** Administrative and financial management of the project (**LP**)

**WP 2.** Information, awareness raising and capitalization (**P2**)

**WP 3.** Adaptation to MED regions of **existing tools and methods** for innovative energy efficiency in stormwater management.

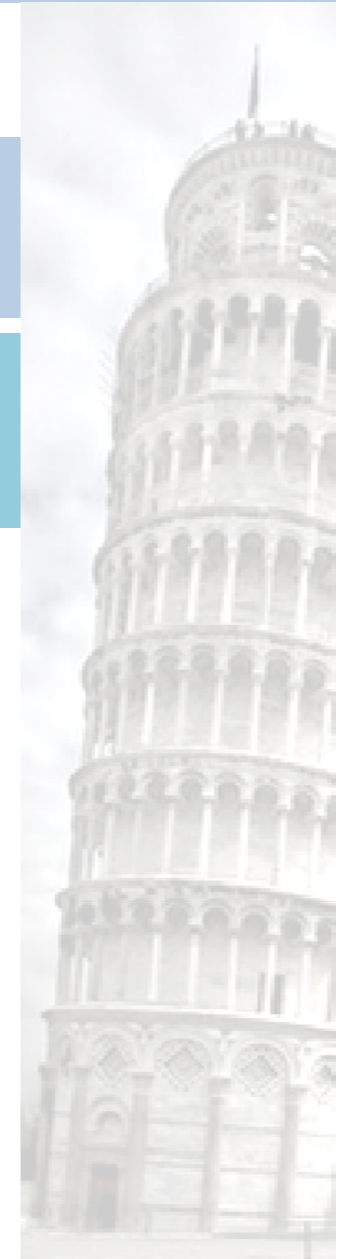
**Exchange of practices and experiences.** (**LP; P7**)

**>> Decision Support Tool (DST)** to improve energy efficiency in the urban water cycle in smart MED cities by the use of innovative storm water management systems. The DST shall allow local authorities to take better informed decisions.

**>> Transition Manual** for rolling out improved technologies.

**>> Proposal for Municipal Ordinances** for energy efficiency improvement by the use of innovative storm water management systems.

**→ Creation of six Regional Working group on Energy Efficiency (RWGEE)**





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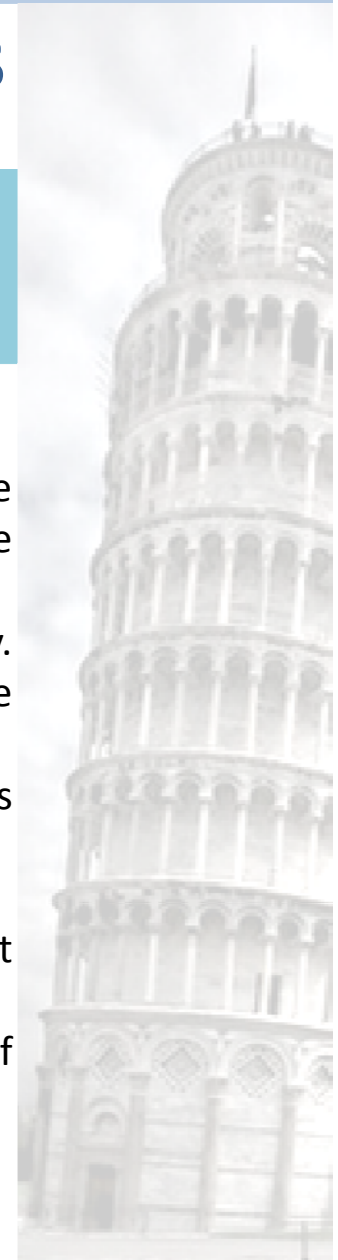


# Project Structure: 4 work packages

**WP 4. Pilot Actions** in 6 MED cities to calibrate and validate the Integrated Management Tools, so they are directly transferable to other MED cities. (P3, P4, P5, P6, P8 and P9)

In each pilot city, activities to be undertaken are:

- a) Selection of the case study area where the DST shall be applied. It is advisable that the chosen area comprises both an established urbanised part and some territory to be urbanised in the near future.
- b) Compilation of current energy consumption and drainage patterns in the area of study. Proposals to redevelop existing and develop new areas using conventional or innovative drainage systems.
- c) Application of the draft version of the DST to compare the different alternatives presented on b).
- d) Application of the final DST to compare the different alternatives presented on b).
- e) Modification of the Transition Manual for rolling out improved technologies to adapt it to each city (replicable to other cities).
- f) Proposal for Municipal Ordinance for Energy Efficiency Improvement by the use of innovative storm water management systems (replicable to other cities).





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## Valencia Meeting 21 th March, 2013

### Project Management

>> Creation of Steering Committee

Municipality of Pisa:  
dott. Sandra Bertini

>> Creation of Pilot Committee

Municipality of Pisa:  
dott. Marco Redini

>> Events

Openday Cetinje 6<sup>th</sup> – 7<sup>th</sup> June 2013  
Openday Pisa October 2013

>> Communication

Guideline of Communication ad Dissemination Plan which includes logo, templates, documents and website

### Technical meeting

>> Presentation of SWITCH project

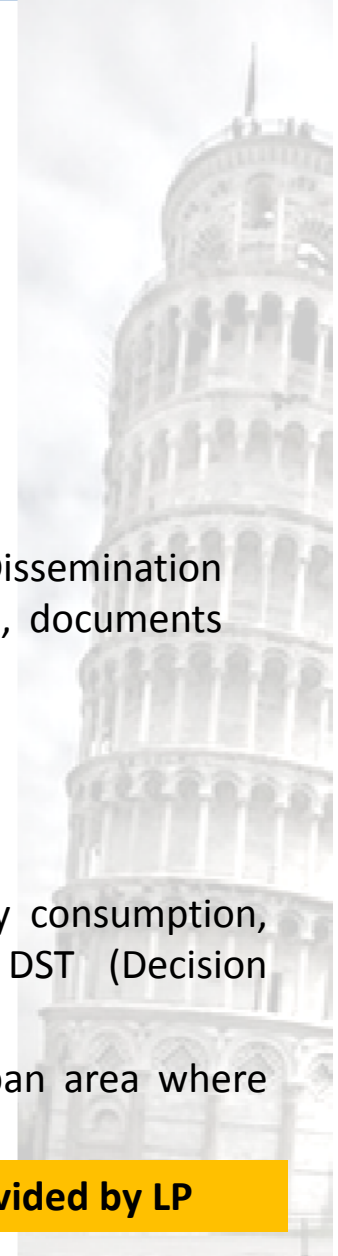
SWITCH transition manual

>> Time table

**Sept. 2013** Initial report of energy consumption, storm water management and DST (Decision Support Tools). Draft Version of DST

**Oct. 2013** Selection of part of urban area where DST will be allied

**Creation of RWGEE. Guidelines provided by LP**







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## RWGEE Guide

### >> WHO

key actors related to energy, water and urban Development - members of local councils, private sector companies; water user groups (e.g. consumer groups, industries); Energy user groups (e.g. consumer groups, industries) – **Six meetings scheduled during the Project time**

### >> Objective

to set up groups to share knowledge from their own experiences on energy efficiency related to the urban water cycle and stormwater management.

### >> Tasks

- >> Compile data required for the Pilot Cities to contribute to the development of the Decision Support Tool (DST) adjusted to Mediterranean cities.
- >> Evaluate and comment on the application of the DST in an urban area in the Pilot City, as well as the proposed municipal ordinances and the SWITCH Transition Manual.
- >> Communicate and disseminate within their entities and to other stakeholders the conclusions of this project about using Sustainable Drainage Systems (SuDs) to improve energy efficiency and mitigate and adapt to climate change effects.



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## Open Days Cetinje 6<sup>th</sup> 7<sup>th</sup> June, 2013

### Project Management

>> Implementation  
of Pilot Committee

Municipality of Pisa:  
dott. Marco Redini, arch. Sandro ciabatti

>> Events

Open days Pisa October 10<sup>th</sup>, 11<sup>th</sup> 2013

>> Communication

Website  
<http://www.e2stormed.eu/>

### Technical meeting

>> SWITCH  
Transition manual

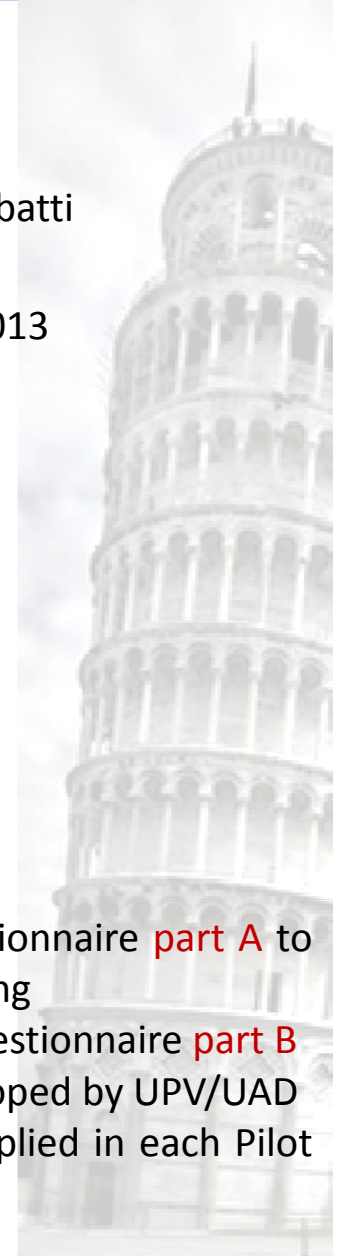
Presentation of SWITCH Transition  
Manual by Chris Jefferies

>> Partner  
Presentations

Presentation by Pisa

>> Time table

**This week:** complete and send questionnaire **part A** to Sara Perales (**LP**) – first RWGEE meeting  
**31<sup>th</sup> of August** complete and send questionnaire **part B**  
**June-Sept 2013** Draft of DST is developed by UPV/UAD  
**Jan-Mar 2014** The Draft of DST is applied in each Pilot City



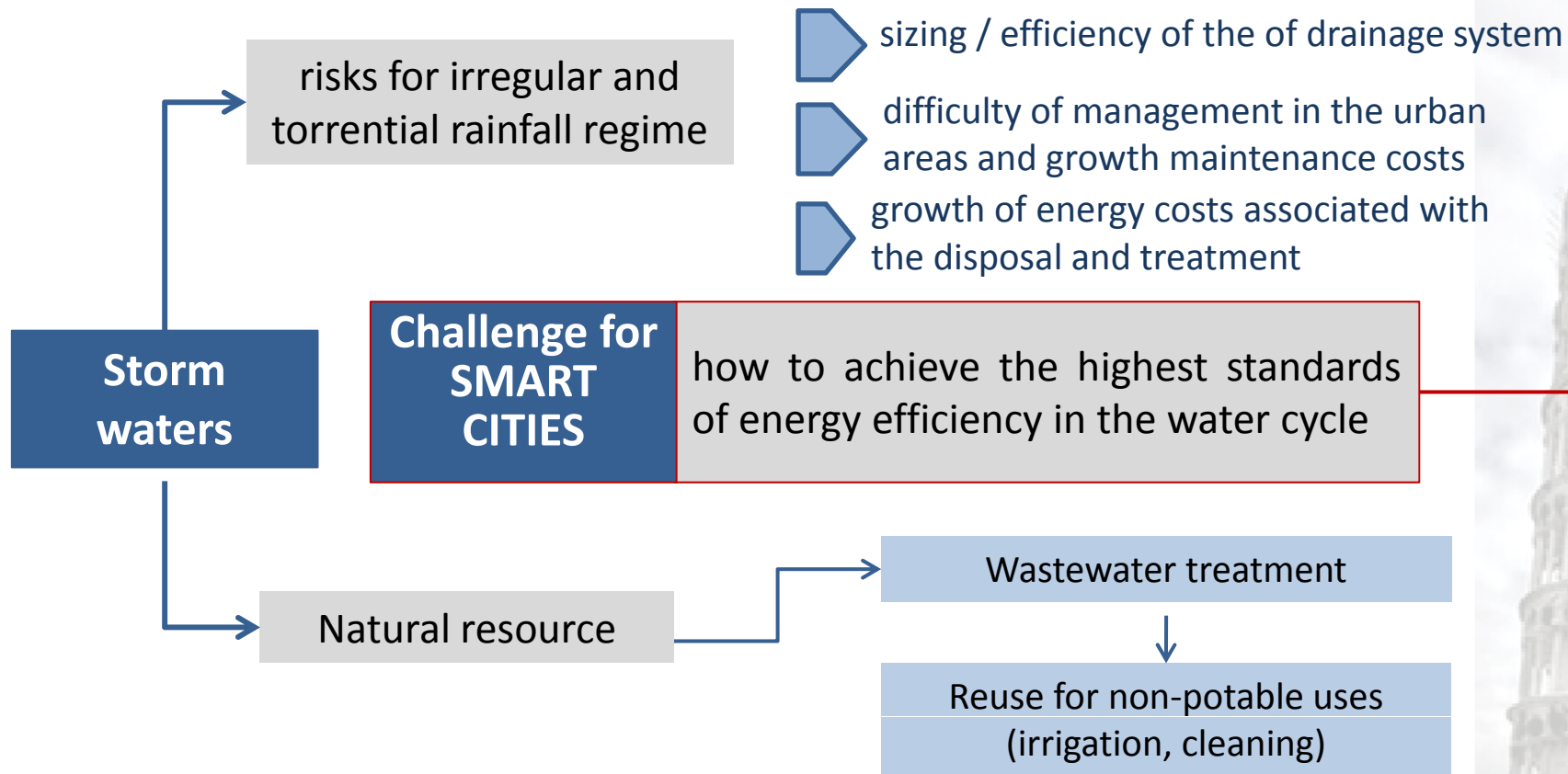


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# Our Presentation in Cetinje: the starting point



**new methods and systems** to achieve a sustainable significant savings in energy: increase of green areas with high permeability able to lighten the sewer system, increase the wetlands, green roofs and rainwater recycling systems in buildings.

**public urban policies and related tools**





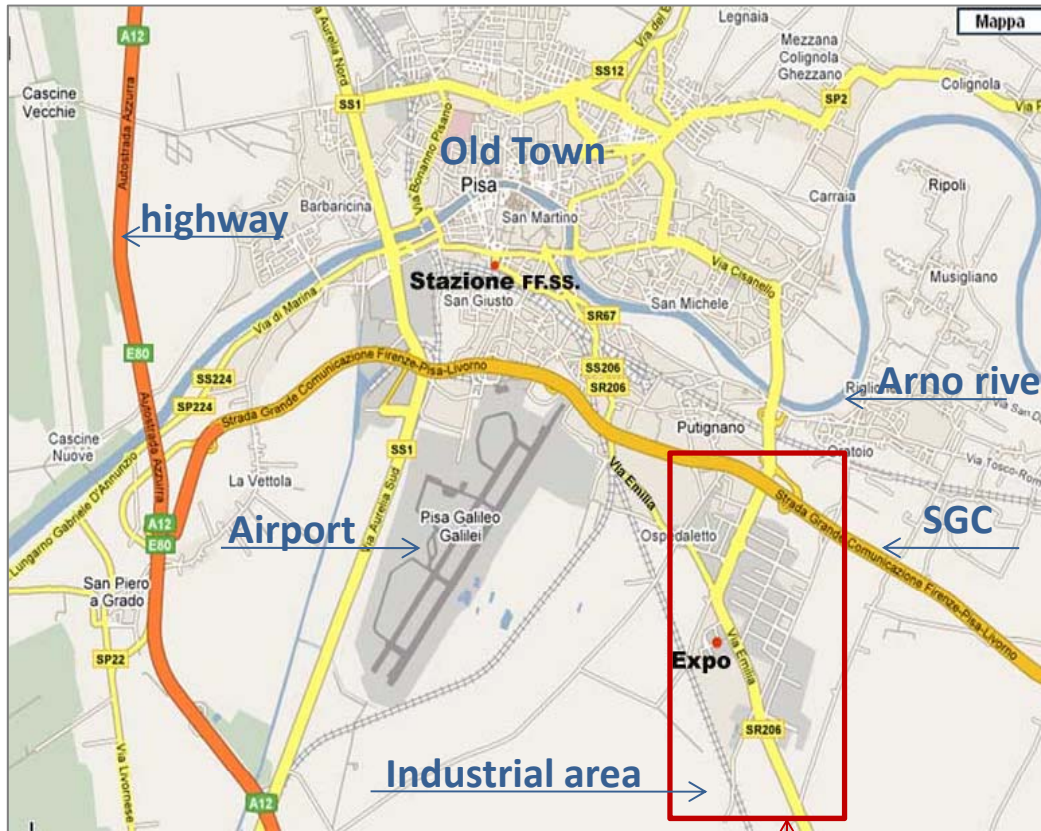


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## The Pilot city location



Surface of Pisa (km<sup>2</sup>): 185,18 km<sup>2</sup>  
Inhabitants: 92.250  
Population density: 498,16 hab/ km<sup>2</sup>

**The Pilot area**

## Problems

Inability to implement wastewater treatment plants

Unsustainability of new growth forecasts

## Actions

Cognitive framework of flood risk

Plan for the reduction of risk and consequent reduction of the levels of dangerousness

Check methodology and integration with E2STORMED





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# The planning tools: the strategic plan

## Objectives and actions

Improvement and restoration of the water grid to reduce the losses

Rationalization of the consumptions of drinkable water through :

- The realization of separated grid (drinkable / other uses)
- The reemploy the purified waters
- The water-raising and the reemploy of some meteoric waters

## Limits for interventions

Are not considered admissible physical and functional transformations that gives uses place with superior water consumptions to 10.000 mc / year

Are not considered admissible physical and functional transformations that foresee the overcoming of the availabilities of existing resources or in the area of reference.



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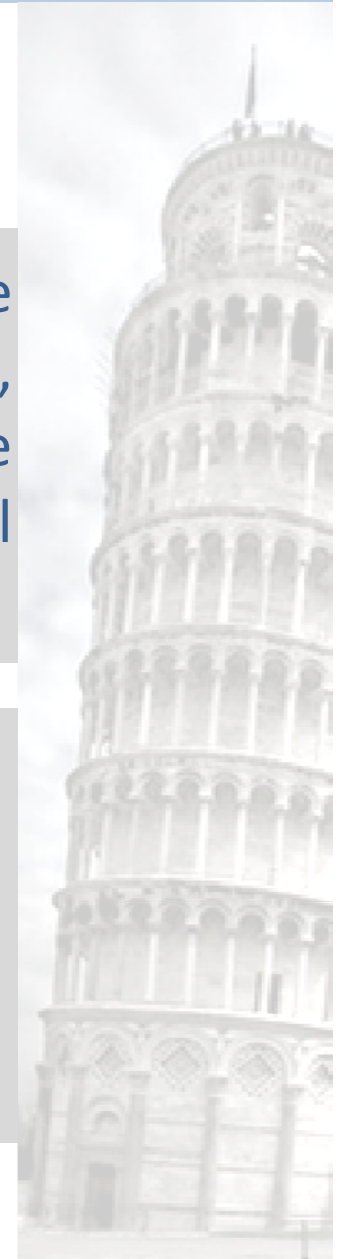
# The objectives to reach in the project

**1**

to codify the results of the study, search and exchange in operational manuals and policy recommendations, addressing the public authorities, to promote the energy efficiency in the water cycle both at urban level and house-building;

**2**

to promote the transfer of the operational and management guidelines in to the urban-planning tools and other actions of local planning through the identification of performance requirements, transformability conditions, and evaluation indicators.





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# Links to other projects



***E<sup>2</sup>stormed** improvement of energy efficiency in the water cycle by the use of innovative storm water management in smart mediterranean cities*

The project aims at improving existing integrated management tools by incorporating energy efficiency indicators for storm water management in urban areas, adapting them to, and testing them by, MED cities.



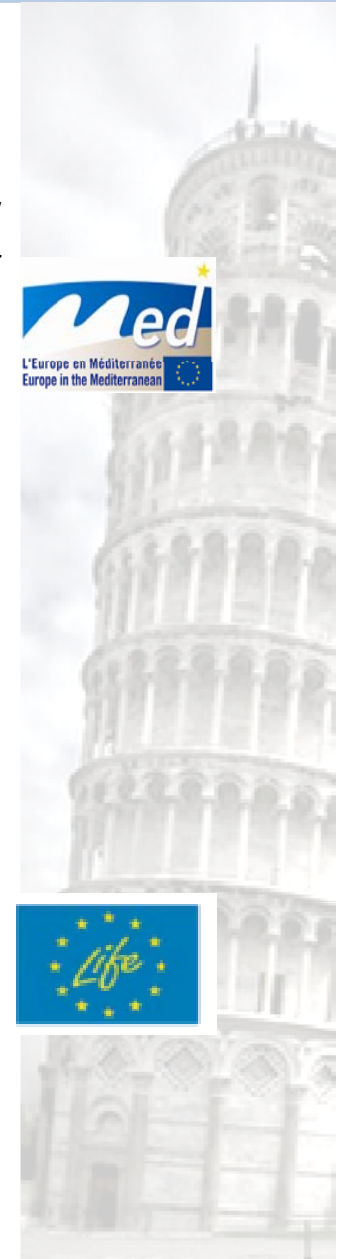
→ **RWGEE member**

→ **Project partner**



***WIZ – WaterIze spatial planning:** encompass future drinkwater management conditions to adapt to climate change .*

The project aims at integrating the protection and sustainable management of water in the process of urban planning and the built environment in general, taking into account the impacts of climate change.





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## RWGEE group: involved actors.



Public-private company in charge of the management of the integrated water service of the Lower Valdarno. (57 municipalities, with more than 750,000 inhabitants).

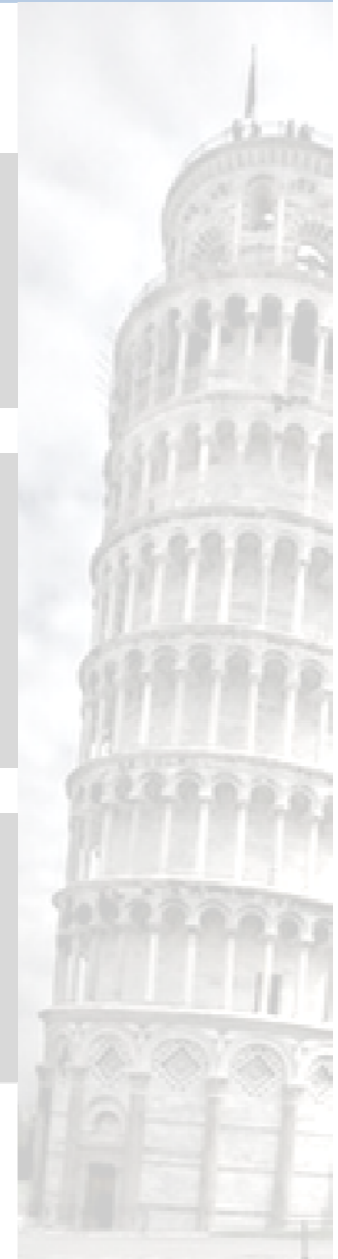


Public agency whose institutional missions are the hydraulic protection, water drainage, environmental protection and irrigation. the Consortium covers an area of 66.030 hectares, covering 17 municipalities:



Department of Hydraulic Engineering

Department of Engineering-Architecture







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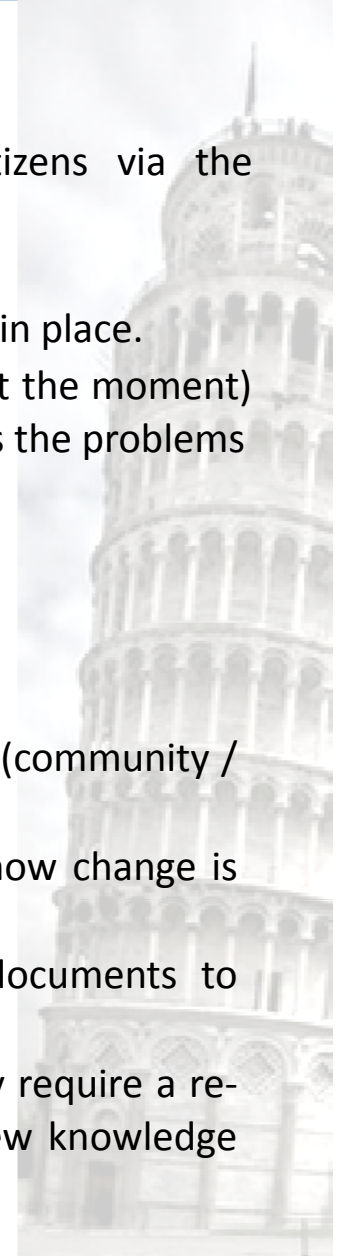
## The evaluation post Cetinje

### Existing Transitioning Strengths

1. good mix of representative stakeholders including citizens via the community / Pisa working Group
2. Urban water problems and issues have been identified
3. Integrated vision (long-term objectives – outcomes) already in place.
4. Transition agenda developed (although no expert in place at the moment) via the flood risk framework and local structure plan to address the problems
5. Pilot location identified

### Transitioning Strengths to be developed

1. First meeting still to be held
2. Implement interventions
3. Citizens affected by the issues should be part of the RWGEE (community / Ngo's etc). Media should be part of the RWGEE Process also
4. Develop process documents to track the change process (how change is happening as it happens)
5. RWGEE assesses progress through analysis of process documents to ensure long-term sustainable objectives can be met.
6. Next round of transitioning following assessment – this may require a review of the vision / activities for moving forwards (i.e. has new knowledge become available?)





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## Tasks and contributions

1

complete questionnaire **part A and part B**

2

Evaluate and comment the draft of the **DST** and the **SWITCH Transition manual**

3

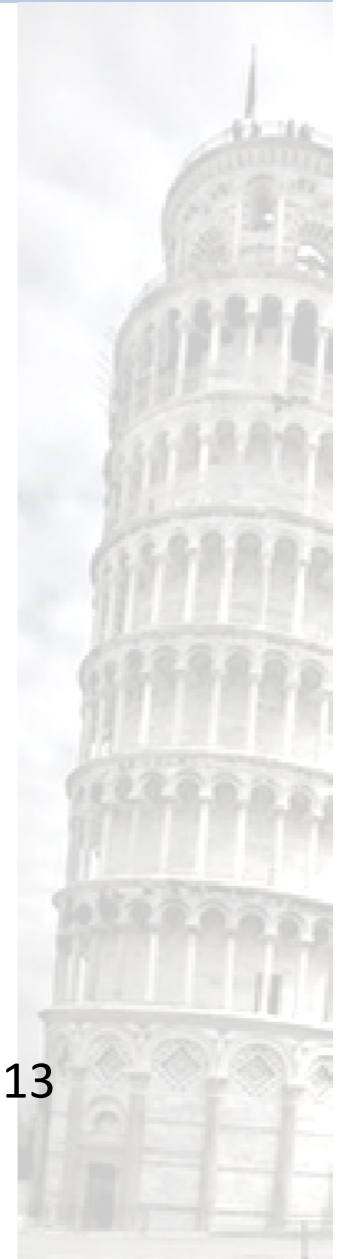
Evaluate who should be involved in **RWGEE** group

4

Identify and share the **experts profile**

5

How to contribute to the **Open Day** in Pisa, October 10<sup>th</sup> - 11<sup>th</sup> ,2013





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## 1st RWGEE \_PISA 26 of June 2013: Main results

- all the members agreed on **widen RWGEE** by involving Private University Saint Anna, and the representatives of the productive sectors of Ospedaletto (pilot area) and the media;
- a second meeting enlarged to the new stakeholders has been scheduled by the **middle of July**
- The commitment and the contributions to be provided to the project have been defined (**data, feedback on the SuDS tool etcc**)
- the questionnaire and the Pilot area description has been shared as well as the Switch manual
- the skills and competences of the external experts to be selected for the pilot project have been identified
- the potential synergies with Life plus project the project WIZ have been defined and a first positive feedback have been received
- the members committed themselves to contribute to the preparation of the Pisa Open Day in terms of technical inputs

