TRANSLATING RESEARCH INTO PRACTICE:
DEVELOPING TRANSITIONING TOOLS FOR URBAN STORMWATER MANAGEMENT IN MEDITERRANEAN CITIES

Rebecca Wade, Ignacio Andrés-Doménech, Ignacio Escuder-Bueno, Sara Perales-Momparler, Adrián Morales-Torres.

XV World Water Congress (IWRA)

Edinburgh, Scotland, 27th May 2015

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INTRODUCTION

- Stormwater and energy
- The EU-MED Programme **E²STORMED project** aims to improve energy efficiency in the urban water cycle and in buildings by promoting the use of innovative storm water solutions such as **Sustainable Drainage Systems (SuDS)** in Mediterranean cities.
- **9 partners** in 7 European countries, with **6 pilot case Studies** in Mediterranean cities.
- **Decision Support Tool (DST)**
- But how do we **translate the knowledge and tools into practice**?

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BUILDING ON LESSONS LEARNED

- E²STORMED built on lessons-learned from previous collaborative EU projects
- SWITCH and AQUAVAL projects.

PARTNERS

- Two academic partners (Polytechnic University of Valencia, Abertay University)
- Working collaboratively with six Mediterranean cities:
  - Benaguasil (Spain),
  - Pisa (Italy),
  - Zagreb (Croatia),
  - Cetinje (Montenegro),
  - Zabbar (Malta) and
  - Hersonisos (Greece).

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EXPERTISE FROM ABERTAY UNIVERSITY

- SUDS and Transitioning expertise
- International projects
- Contributor to AQUAVAL
- SWITCH Transitioning manual

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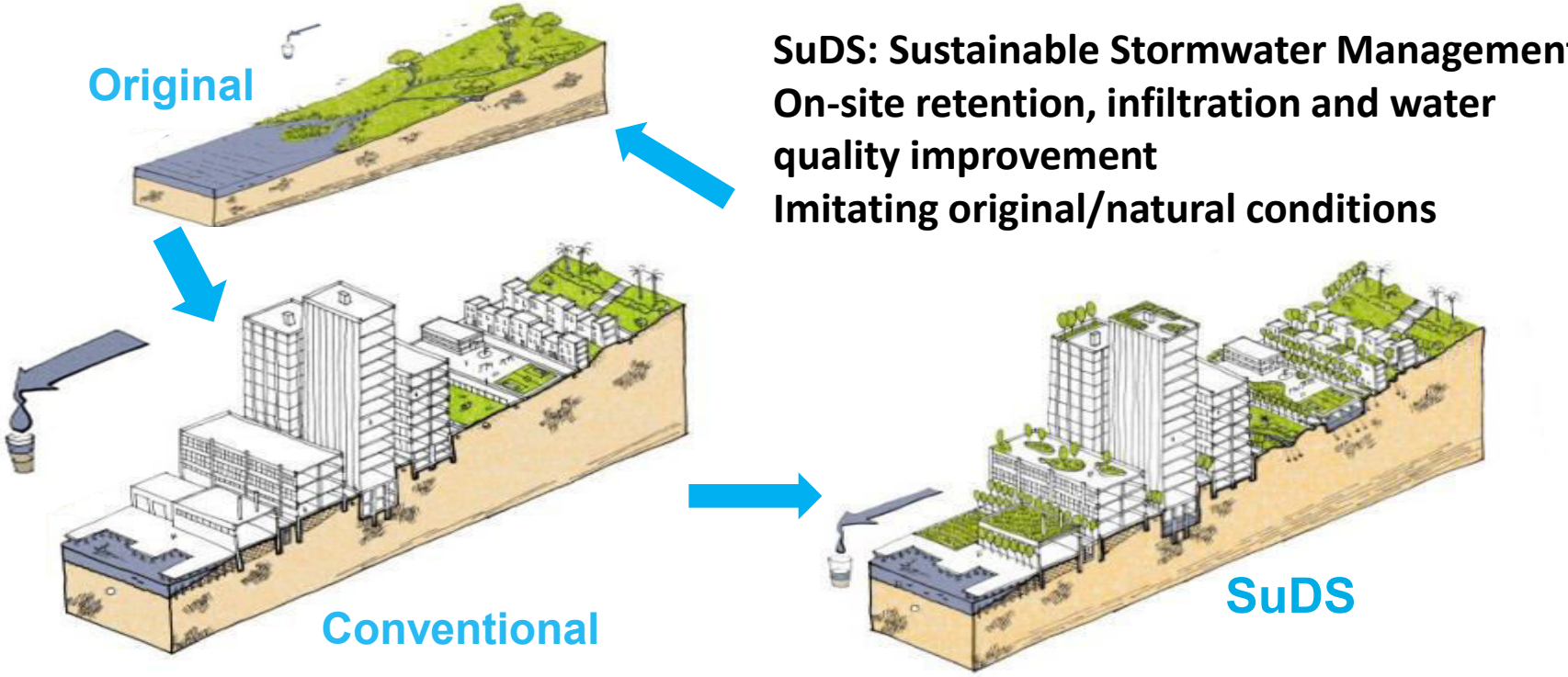
SUSTAINABLE DRAINAGE SYSTEMS (SUDS)



SuDS: Sustainable Stormwater Management
On-site retention, infiltration and water quality improvement
Imitating original/natural conditions

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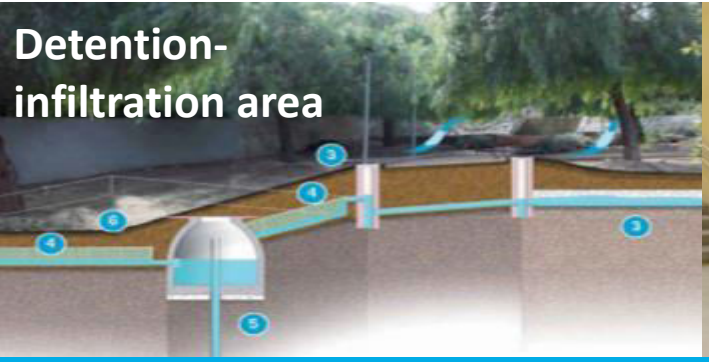
SUSTAINABLE DRAINAGE SYSTEMS (SUDS)

- Currently, knowledge of SuDS in the Mediterranean Region is very limited.
- Some demonstration sites exist with very **good performance** from a quality and quantity point of view.


Green roofs


Vegetated swales


Detention-infiltration area


Water butts


Permeable pavements

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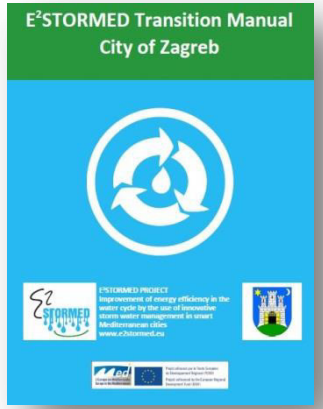
E²STORMED TRANSITIONING

- A new transition management framework for each city.
- Identifying and organising key actors, identifying problems, and developing a long-term integrated vision and strategic action plan for stormwater management.
- RWGEE - establishing the best way to deliver this science to society.



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E²STORMED PILOT STUDIES

Regional Working Groups of stakeholders have been created in each Pilot Location. The main tasks of these groups are:

- **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.
- **Communicate and disseminate the project findings** within their organisations and to other stakeholders.

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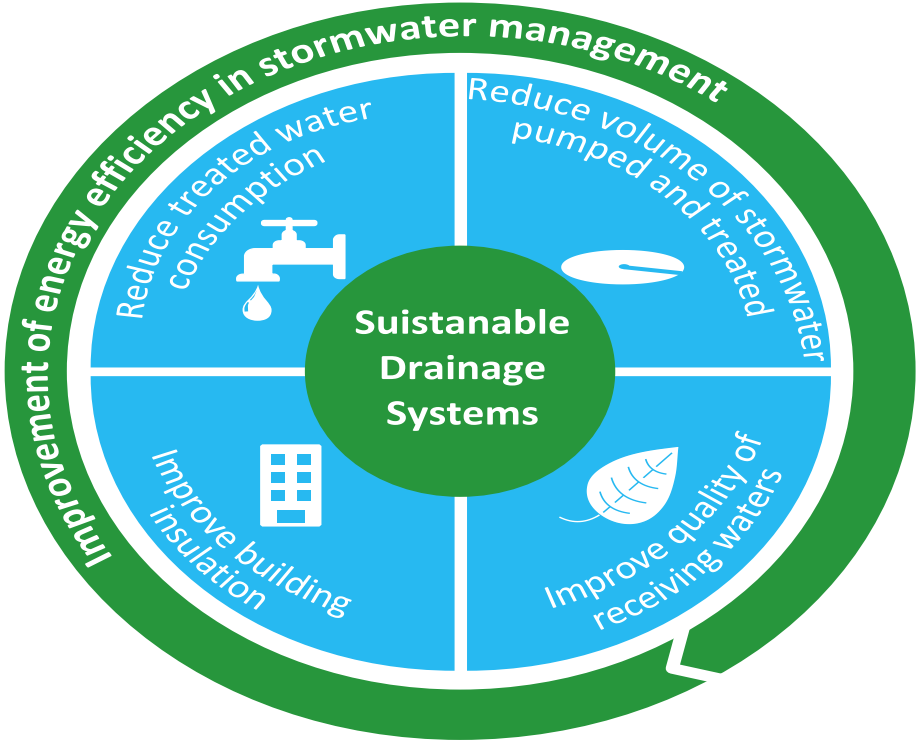
E²STORMED

- E²Stormed links stormwater and energy efficiency
- And recognises the opportunity to gain multiple benefits via SUDS
- E²S translates the science:
  - RWGEEs,
  - new DST,
  - Local training



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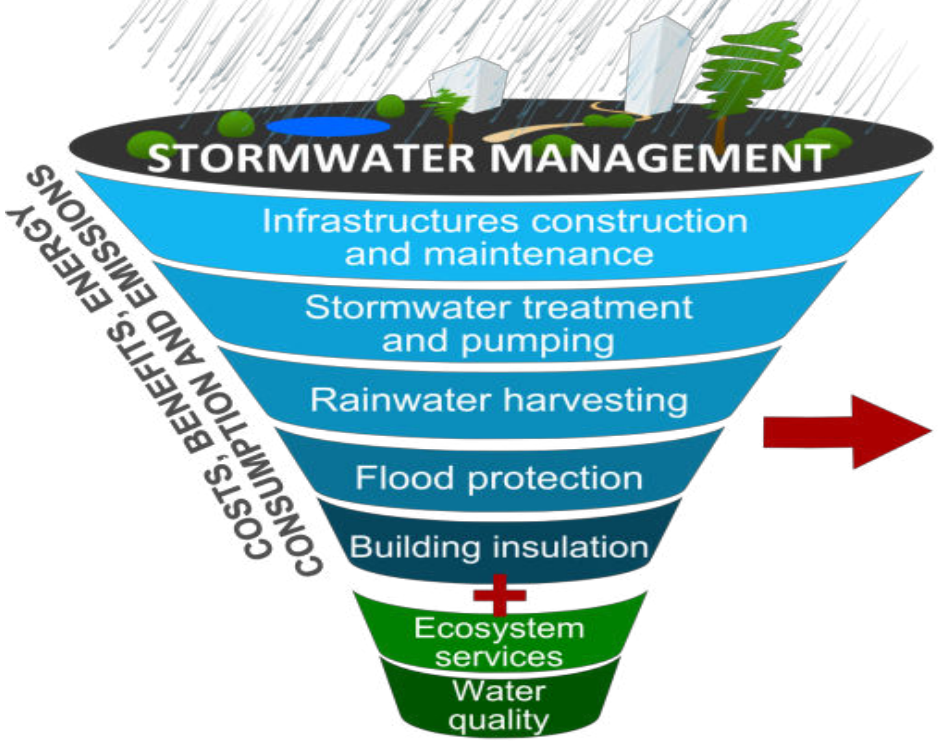
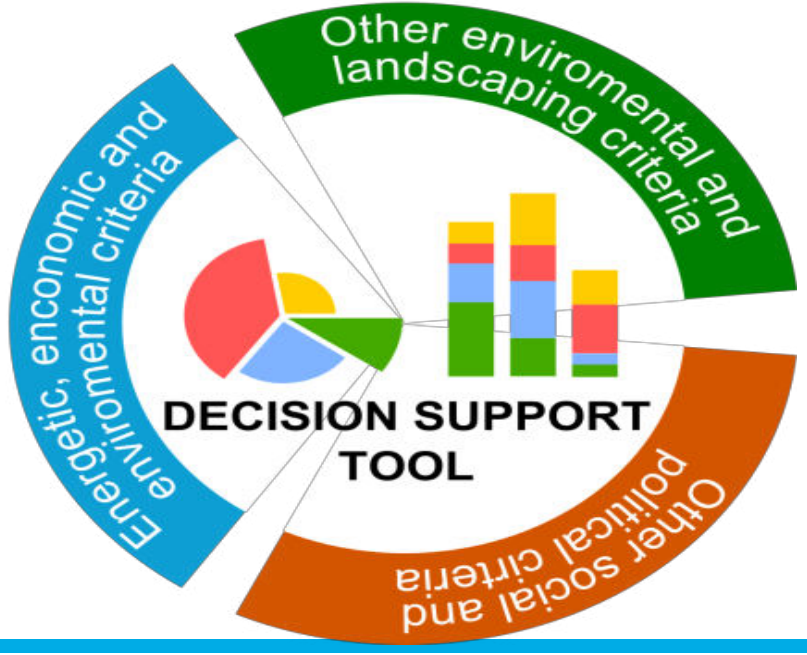
E²STORMED DECISION SUPPORT TOOL





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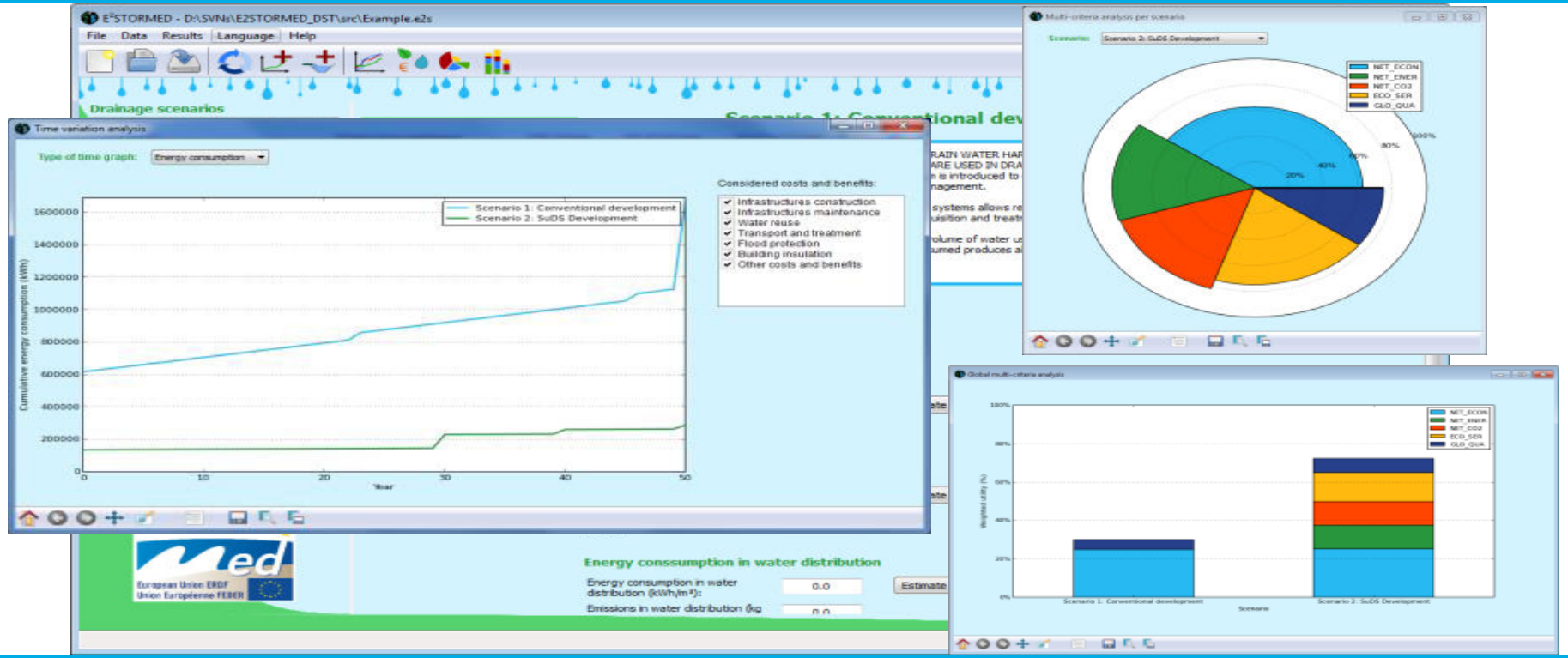

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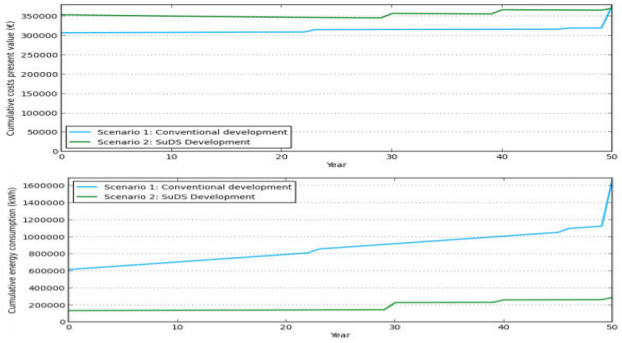
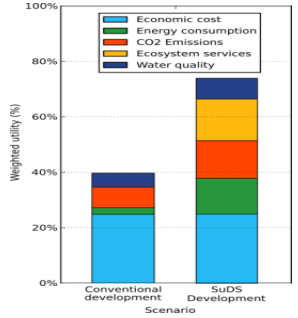
E²STORMED DECISION SUPPORT TOOL

For each scenario the costs, benefits, energy consumptions and emissions are estimated for:

- Construction and maintenance of infrastructures.
- Stormwater treatment and pumping.
- Rainwater harvesting.
- Flood protection.
- Building insulation improvement.





For each scenario, **economic, energy and environmental criteria** are obtained based on these results.

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E²STORMED SUDS AND ES TRAINING

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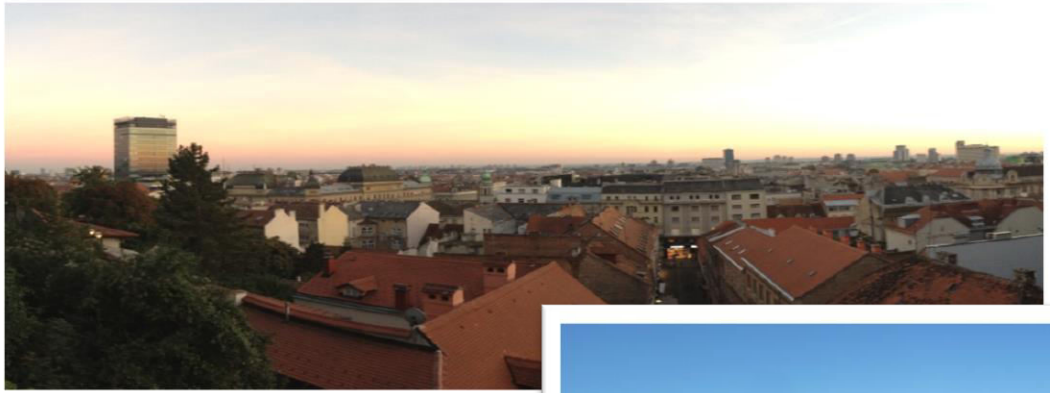
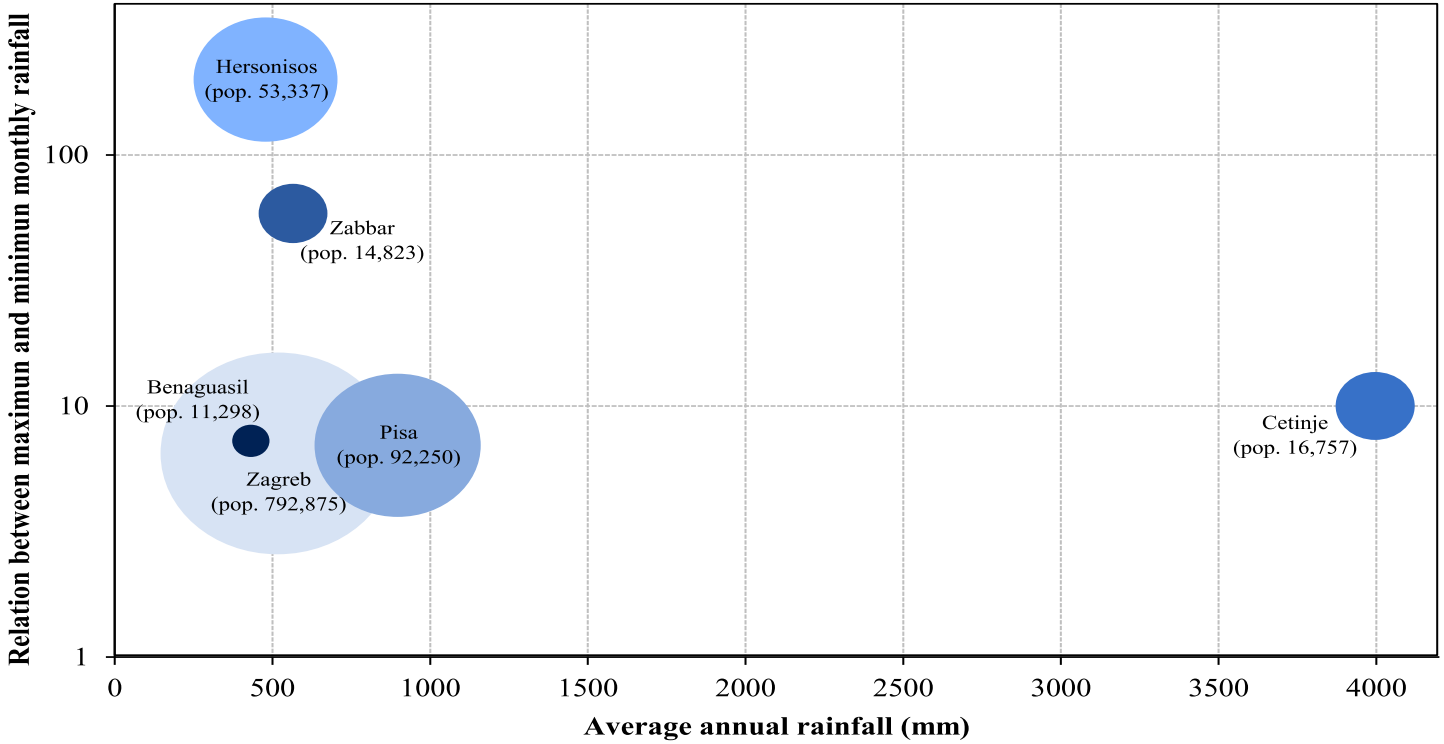



Transition Management Wheel
E²STORMED Transition Management Wheel

E²STORMED PILOT STUDIES



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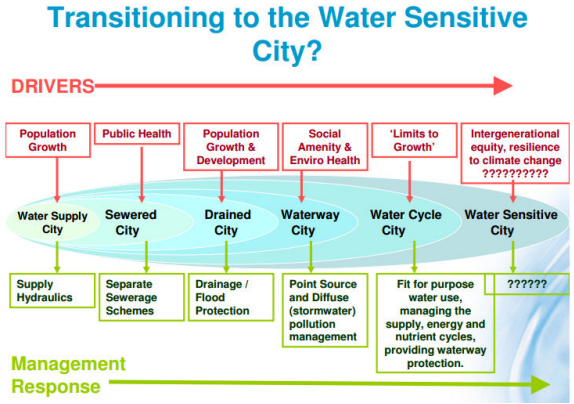
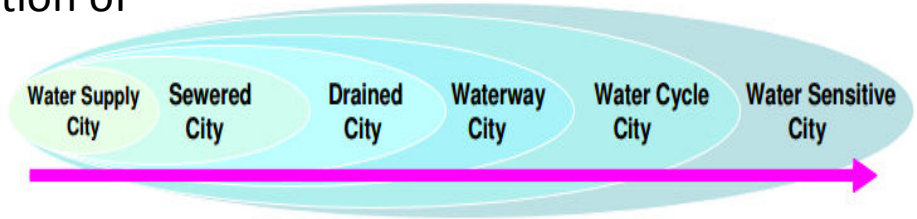
Transitioning challenges

- The six cities cover a heterogeneous range of geographical, hydrological, political, socioeconomic and cultural conditions.
- They experience common challenges and difficulties in delivering the transition; however, there are distinctive local and regional conditions which lead to site-specific barriers.
- These must be overcome through prioritisation of different objectives in each case.
- The transition starting point of each city is dramatically different.





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Transitioning journey

Partners have different challenges and priorities

Different mechanisms are required in each location.

But the stakeholder engagement process and the transitioning framework can apply equally to them all.

Examples: Hersonissos, rapid development for tourism, quick decisions are needed.

Zagreb and Pisa, well established urban centres with limited space, retrofit solutions are the priority.

In addition, some existing agendas/commitments (Covenant of Mayors) - cities are committed to a more sustainable and energy efficient future.

CONCLUSION

- Close collaboration on a topic of mutual interest
- Proactive attitude by the non-academic partners has enabled successful establishment and development of RWGEE.
- Will lead to an improvement of sustainability and energy efficiency (through water management) for all of the cities.
- It is important that the momentum generated within this initiative continues beyond the life of this project.
- The RWGEE have become new learning alliances
- Overlapping agendas and opportunities (such as the Covenant of Mayors)

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- The E²STORMED project partners for their help and willingness to collaborate in this work.

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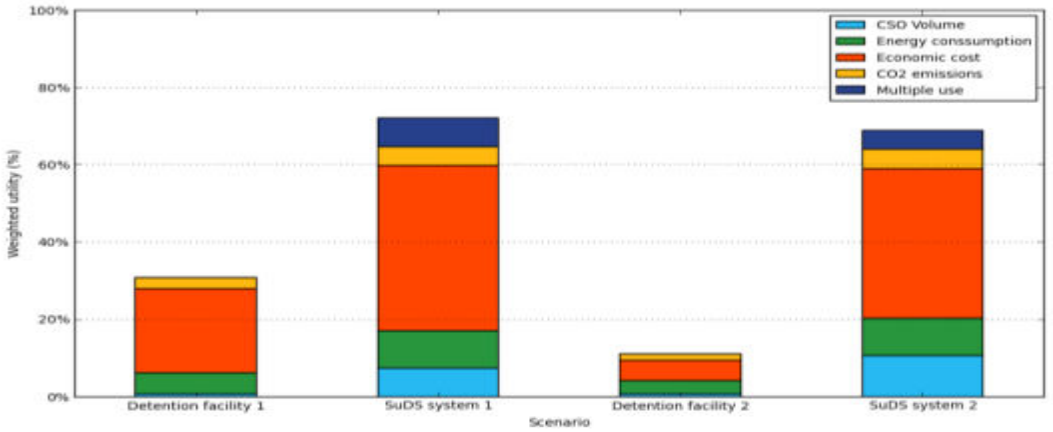
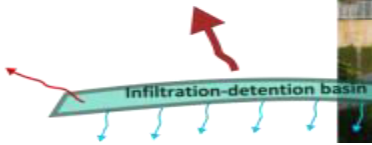
APPENDIX – Additional Information

- A1 - DST outputs
- A2 - Green roof monitoring results

A1 - E²STORMED PILOT STUDIES

Benaguasil (Spain)





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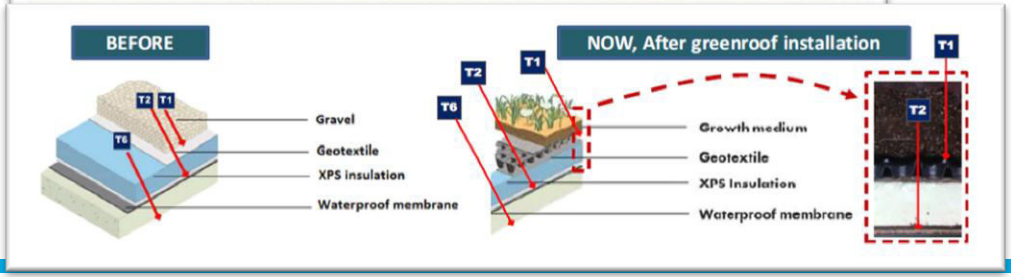

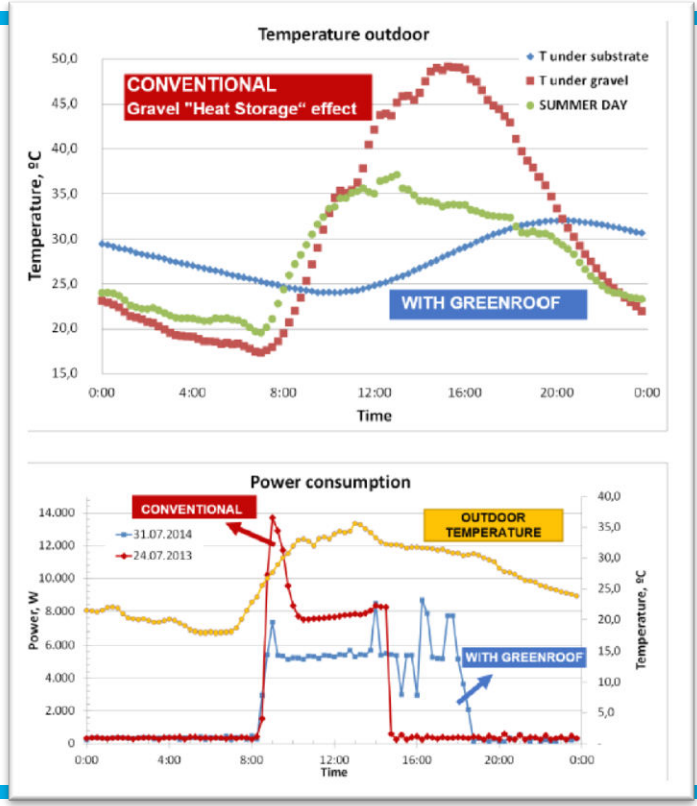

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