

TRANSITIONS TO
THE URBAN
WATER SERVICES
OF TOMORROW

06

trust

MAGAZINE

TRUST meets Valencia

Partners gather by the Mediterranean
to reflect on 3 years of project and
bring it to a succesful conclusion.

TRUST gets together



After 36 months of the project, a large TRUST meeting took place at the beginning of June in Valencia, Spain. A great number of TRUST project partners gathered together to discuss the progress of the project and plan the next steps. The main purpose of the meeting was to take a close look at the current state and the achievements of TRUST, present and discuss the latest project results and their testing / demonstration in the TRUST cities and to plan the work for the final year of the project.

In summary, TRUST is well on track and is now delivering an impressive portfolio of results. During the second period of the project, governance and socio-economic regimes for transition were analysed furthermore and TRUST has successfully completed the portfolio of online-tools for self-assessment (self-assessment tool for sustainability, financial sustainability rating tool and the adaptive potential tool), which are available for free at the TRUST website. With regard to the detailed analytical tools to assess the impact of measures on performance and sustainability of UWCS, TRUST has even delivered more than promised: There are now two instead of one metabolism model. WaterMET2 is a more complex and data-demanding model, analysing the metabolism of the UWCS from the systemic perspective, whereas the DMM model is more from the resource-flow perspective. Both models were tested with Oslo as a model test city to demonstrate the usability and usefulness of the models and to get feedback from the practitioners for further improvements of the models.

A wide range of technologies & operational options were tested, e.g. a full-scale optimisation of water treatment

processes at three test sites was completed. A special feature of this activity was the close collaboration and exchange of knowledge and practices among three sites and TRUST cities in Norway, Scotland and the UK. One important result of this work is a handbook on enhanced coagulation.

In Portugal, TRUST has successfully tested reclamation schemes involving ceramic membrane filtration as an alternative water resource for water-scarce areas. It could be shown that this is a feasible solution to produce water for a range of urban and domestic purposes like irrigation of private gardens or feeding air-conditioning systems.

Furthermore, TRUST developed a mobile device that uses augmented reality to visualize infrastructure assets, created rehab manuals, brought out a wide range of tools (such as EPANet Network Modelling, Failure Analysis or the Decision-Theatre Software, among others) and started to transform single TRUST tools into larger, more integrated tools. The TRUST roadmap approach was applied in the pilot cities, city platform events were organized, TRUST results and activities were made public continuously and a 6-monthly magazine and monthly newsletters were issued, to name only a few things the project has accomplished over the last three years.

During the upcoming and last year of the project, one focus will lie on Train4TRUST. There will be 2-3 training events dedicated to key TRUST results that are based on the training needs and expectations of the TRUST cities.

During the conference, there also was a successful work area management team meeting and a formal project steering board (PSB) meeting. The PSB approved the progress report to the EU and acknowledged that the project is well on

Video Shooting



Paul Jeffrey video

track, also in financial terms. Project Advisory Committee (PAC) members Mike Farrimond, Dan Murray and David Marlow were also present. The PAC provides independent, external advice, facilitates links to other initiatives and reviews the project outcomes. The PAC gave a positive review of the TRUST project in this stage. Generally, they acknowledged TRUST to be a well-managed, complex, multi-partner project, which is delivering outputs on budget and schedule and is characterized by a good communication between the different project partners. The PAC recommended to measure the views of the stakeholders more thoroughly, make enough budgets for 'face to face' meetings to keep up the good communication and to market the TRUST products more aggressively to the users to ensure a life for the most valuable TRUST tools, even after the project has ended.

A special thanks goes to project partner ITA (Universitat Politècnica de València) who hosted the conference. The next large TRUST meeting will be the final TRUST conference on 28-30 April, 2015 in Mülheim an der Ruhr, Germany within the context of an IWA Cities of the Future International Conference.

During and around the project meeting in Valencia, several TRUST videos about key outcomes of the project were shot at the facilities of the Universitat Politècnica de València, in order to further disseminate and promote TRUST results. TRUST scientist recorded presentations on outcomes such as Definitions of Sustainability or Background for Metabolism Analysis, the Self-Assessment-Tool, the Decision Support Tool, Decision Theatre and Policy Briefs.

TRUST scientist Paul Jeffrey from Cranfield University said:

"The opportunity to create a visual teaser for the TRUST outputs was great. It's important that we make use of social media to raise awareness of and interest in the project's work, even if that means retraining as a TV news presenter for the day"

And business mathematician Nicole Mueller from IWW, Germany agreed:

"The video shooting was an interesting change - feeling like a movie star or weather man for one day. It was great fun and I think this kind of medium is perfect to visualize our TRUST results."

The final videos now can be found on the TRUST YouTube channel and in the results and download section of the website next to the deliverables they describe. The videos shortly explain the outputs so interested people can easily get an idea what the TRUST output is about and if it is useful for them.

And TRUST scientist Venkatesh Govindarajan from Norwegian University of Science and Technology concludes:

"Special thanks to Francisco and his Valencian colleague Antonio. They were very amiable and helped all of us very professionally. As Winston Churchill has said, 'A good speech should be like a woman's skirt; long enough to cover the subject and short enough to create interest'. I hope we can achieve that with our videos!"

TRUST products spark interest of Italian agency for water services

The Emilia-Romagna Region Territorial Agency for Water Services and Solid Wastes (short ATERSIR) has developed an interest in the TRUST approach and tools, following the participation of the agency director in the working group for the TRUST roadmapping procedure for the water system of the town of Reggio Emilia, which belongs to the water scarcity city cluster of the TRUST project.

ATERSIR is the authority in charge of supervising the urban water services in the Emilia-Romagna region. The agency has been installed quite recently (2012), following the reorganization of all regulatory bodies in Italy. Previously, the water services were monitored by a regulatory body at the provincial level while now these functions have been centralized at regional level. The scope of ATERSIR covers several aspects of the water services. Among other things, the agency promulgates policies and guidelines regarding the water services, investment planning and service tariffs. ATERSIR also is in charge of organizing and supervising the competition for the selection of the water companies that will manage the services in each water district. Therefore, ATERSIR collects, analyzes and divulges statistical data about the services in order to report technical and economic

for Dr. Valentina Ciriello to study the applicability of some TRUST tools for their needs:

To reach its goals, ATERSIR needs a panel of indicators aimed at (i) monitoring the performance of the management of the services over time and (ii) comparing the relative performances of water systems across the region. "We are really interested in some of the tools of the TRUST project, such as the Self-Assessment Tool (SAT) and the Financial Sustainability Rating Tool (FSRT) and we are evaluating the possibility to use them in our region", so Dr. Stefania Valente from ATERSIR.

The FSRT enables a water utility to rate the utility's financial sustainability and gives an indication, which area from



Dr. Valentina Ciriello

“Working with ATERSIR gives me the interesting opportunity to apply and adapt tools conceived inside TRUST to practical and specific needs of a territorial agency. This should be exactly the aim and the outcome of such a research project.”

performances of the urban water systems. Being in charge of the responsibility of monitoring and checking the companies providing the water services in each of the eight provinces, ATERSIR has been looking for approaches and tools to evaluate the sustainability of the integrated water cycle in the region Emilia-Romagna from an environmental, economic, infrastructural and performance approach.

After becoming aware of the products and methodologies of TRUST, the agency stipulated an agreement with the University of Bologna, partially supporting a post-doc grantee

financial situation over asset management to business operation needs optimization. The tool also evaluates different forecasts (e.g. population development) and country specific characteristics (e.g. inflation rate) to assess future trends. The SAT is a simple and small diagnosis tool for water utilities to determine whether their urban water cycle services are on track to become truly sustainable in 25 years from now.

Soon the agency will have a clear picture of the complexity and applicability of the tools and if some adaptations are needed to address their specific needs.

Upcoming deliverables in Trust

D41.2

Optimisation procedures and benefits for sustainable water supply systems of tomorrow

This report is about (i) the optimisation of existing water supply systems with respect to water treatment performance towards safer and more reliable, more sustainable and more resource-effective operation procedures and practices, (ii) improved process control systems for better adaptation of water treatment processes to raw water quality and variability and (iii) best available technologies like improved or supplementary water treatment technologies. Because of the unique and site-specific nature of source waters, treatment facilities, distribution systems and operator staff an internal, site-specific benchmarking procedure rather than a conventional benchmarking approach is applied.

D43.2

Paper and model for system sustainability analysis of potential for improvements

Flooding and combined sewer overflow (CSO) discharges are major issues for drainage engineers. The spills have a detrimental effect on water quality and must be addressed in order to meet European environmental standards. That is what the new optimisation tool ADAPT (A Drainage Analysis Planning Tool) does. Using the existing software InfoWorks to simulate drainage systems, ADAPT is a multi-objective analysing tool that can be used to find the minimum cost solution that meets pre-defined performance requirements. It can help engineers to size drainage schemes and choose between asset development options. This report describes the tool and is useful and interesting for the scientific community, technical staff at water utilities and decision makers.

D44.1

Good practice recommendations and implementation guidelines for intervention concepts

The report aims at assisting decision makers, planners and operators in identifying challenges and potential solutions when planning and implementing water recycling projects. It provides a structured approach and examples for intervention concepts related to alternative water sources. Building on the collective knowledge gained with respect to alternative water resources utilisation in the TRUST pilot cities, these guidelines present improvements and good-practice recommendations on technical and management options to facilitate the beneficial use of alternative water sources in urban water cycles while also considering the integration with conventional water resources.

D55.1

Decision-Theatre collaborative environment software

The TRUST Decision Theatre (DT) is shared display software. It has been developed to provide a practical tool for collaborative work during identifying the objectives, criteria and metrics of a planning exercise of a water facility. All users are able to take part in the decision process, using their own devices (personal computers or tablets). The DT enables them to make their own suggestions and propose alternatives that are instantly available in everyone else's devices as well. Additionally, session progress can be saved and loaded again later, supporting decisions that require multiple meetings. The Decision Theatre can be used by different users in the same room (recommended by the developers) but also over a distance.

The following two deliverables are related

D51.1. Software guidance tool for assessment of UWCS current situation and future scenarios

This software tool has the purpose of logically assisting a water utility in characterizing and evaluating its current status and defining possible scenarios and tracks for a transition to more sustainable urban water cycle systems (UWCS). Therefore, a current state evaluation of the UWCS will be carried out, a definition of possible future scenarios is presented and a preliminary portfolio of possible transition tracks is created. This software tool is using different approaches and planning techniques and is interesting for water professionals, decision makers and stakeholders.

D51.2. Guidelines for assessment of UWCS current situation and future scenarios

Just like the software tool, these guidelines have the purpose of logically assisting a water utility - especially water utilities strategic planners - in characterizing and evaluating its current status and defining possible scenarios and tracks for a transition to more sustainable urban water cycle systems (UWCS). The guidelines are based on a portfolio of situation analysis factsheets (SAF), developed for different tools and approaches to assess the current state and possible tracks of UWCS. Each SAF includes the following information: Framework scheme of the tool, purpose and output, objectives and main output, inputs and resources,



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Cities of the Future Conference

Transitions to the Urban Water Services of Tomorrow (TRUST)

28 - 30 APRIL, 2015

MÜLHEIM AN DER RUHR, GERMANY

www.trust2015.com



Water is vital for any human society, and therefore the urban water cycle services are key factors for stable and healthy cities of the future. Within the context of a growing world population, continuing urbanization and the general pursuit of better living standards, there is an urgent need for sustainable solutions for urban water services. Cities of the Future – Transitions to the Urban Water Services of Tomorrow (TRUST) will provide an opportunity to present and discuss leading-edge developments in the area of urban water services with an international audience of water utility personnel, researchers, engineers, technology providers, city planners, consultants, regulators and policy makers.

Conference Topics

- **Planning for Future Urban Water Services**
 - > Strategies for Sustainable UWS
 - > Territorial and Urban Planning
 - > Diagnosis Tools
 - > Management Tools
- **Governing and Financing Future Urban Water Services**
 - > Water Governance in Transition
 - > Financial Sustainability of UWS
 - > Affordable Water Services
- **Engineering Future Urban Water Services**
 - > Water Security in Cities
 - > Healthy and Liveable Cities
 - > Resource / Energy - Efficient Cities
 - > Climate - Resilient Urban Water Services
 - > Smart Networks – Smart Water Services

Within the conference, there will be a special session dedicated to the core outcomes of the EU FP7 TRUST project (www.trust-i.net).

Conference Timeline

15 October 2014	Deadline call for abstracts	31 January 2015	Full paper submission
01 December 2014	Notification of authors	28-30 April 2015	Conference



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