

September 2007 at SWITCH

**Sustainable Water Management Improves
Tomorrow's Cities' Health**



NEWS FROM SWITCH

Welcome to the first edition of the SWITCHED ON! Newsletter. It is hoped that this will include something for everyone who is interested in the future of urban water management, whether involved directly in the SWITCH project or not.

This first edition also serves as an introduction to SWITCH and it is therefore anticipated that subsequent issues will be significantly shorter. SWITCHED ON! will keep you up to date on what have been the recent highlights and achievements of the SWITCH project, the key events, and any publications and products which may be of interest.

The contact address for the newsletter is switchnews@lboro.ac.uk

- if you have news and information for inclusion in the next newsletter
- if you do not wish to receive SWITCHED ON!

September 2007 FEATURE

Contents

1. What is SWITCH and how does it work?
2. Spotlight on Learning Alliances
3. Switched on Cities
4. Events and Training
5. New Publications and Outputs

1. What is SWITCH and how does it work?

- SWITCH is an EU-funded research programme aimed at achieving more sustainable integrated urban water management in the 'City of the Future', 30-50 years from now. Beginning in February 2006, it involves a Consortium of 33 partner organizations working in 15 European and Southern cities, who are

working together to share knowledge and research on a range of tested scientific, technological and socio-economic solutions to urban water management. It is envisaged that such proven sustainable solutions will be adopted globally to replace the many different ad hoc approaches which currently exist and to create a paradigm shift to sustainable urban water management. More information available in the SWITCH Executive Summary: <http://www.switchurbanwater.eu/content/download/1724/8725/file/Publishable%20executive%20summary.pdf>.

- The SWITCH Consortium has 33 partners around the world. The SWITCH Demonstration Cities, all of which play a very important role, are: Hamburg, Birmingham, Lodz, Zaragoza, Tel Aviv, Alexandria, Accra, Beijing, Chongqing and Belo Horizonte. This is where the results of SWITCH research are put into practice in tangible, socially-relevant demonstration activities. Within each city, Learning Alliances have formed which consist of a wide range of stakeholders from across the board, including researchers, the public and private sectors and civil society. Some of their activities are highlighted below but their main purpose is to ensure that research is demand driven and that their feedback is reflected in decisions made about how to address global urban and water issues. For more details see <http://www.switchurbanwater.eu/page/1763>.
- The SWITCH project has six thematic areas, each of which focuses on an identified risk to effective urban water management:
 - Paradigm shift to sustainable and integrated urban water management;
 - Stormwater management;
 - Efficient water supply and use for all;
 - Innovations in sanitation and waste management;
 - Urban water environments and planning; and
 - Governance and institutional change.

Each theme is divided into several work packages, each led by a SWITCH partner organization. For more details see <http://www.switchurbanwater.eu/page/1615>.

- Apart from the demonstration cities a number of study sites have been included. Study sites may or may not be located within cities and address specific research questions via field work under real life field conditions. In this context, the work planned within study sites fits under the research programme (not demonstration). The identified study sites are the Ruhr area in Germany, Bogota and Cali in Colombia and Lima in Peru.
- Many challenges have been faced in the early stages of the SWITCH project and many lessons learned about what is needed for effective collaboration of a large group of individuals in order to create an information network that encompasses seven different languages and 33 research partners. Over the first 12 months, SWITCH has made progress on the following activities:
 - Establishing the Learning Alliances and training facilitators
 - Commencing research in all 18 work package areas
 - 1st Scientific Meeting held with 18 papers produced
 - Demonstrations begun in the cities of Tel Aviv, Lodz and Zaragoza
 - Dissemination of SWITCH through major conferences
 - Formation of SWITCH CMU, Scientific, Dissemination and Exploitation, Demo City and External Sounding Board Committees.

In the past six months, effort has been made to strengthen the capacity of the Learning Alliances and to move the research and the activities of the

demonstration cities forward.

2. Spotlight on Learning Alliances

The SWITCH project is piloting an approach to scientific research in urban water management through a multi-stakeholder process known as the Learning Alliance which concentrates on putting research into use across different aspects of the urban water cycle to help improve integration. For more information on Learning Alliances see <http://www.switchurbanwater.eu/learningalliances>.

The rationale behind this approach is detailed in a background paper prepared for the SWITCH start-up workshop in 2006. A second working paper (Jan 2007) aims to capture the rationale for the learning alliance approach in the SWITCH project based upon a discussion of the nature of innovation systems. It goes on to consider some of the challenges faced during the first year of the project. Both papers are now available at <http://www.switchurbanwater.eu/page/1789>.

As this is an innovative approach, there is much to learn and a series of briefing notes on Learning Alliances (LAs) prepared for the SWITCH project are now available at <http://www.switchurbanwater.eu/page/1789>. They focus on essential areas in developing research partnerships in integrated urban water management. It is intended that new briefing notes will be added regularly.

- **Beijing:** The kick-off meeting for the Beijing Learning Alliance was held in May 2007. Several presentations given at this are available at: <http://www.switchurbanwater.eu/page/1775>.
- **Accra launches its Learning Alliance, March 2007:** The Accra Learning Alliance was launched in March at the Notovel Hotel, bringing together major stakeholders involved in the management of urban water in the city. These included representatives of Government ministries, departments and agencies, service providers, civil society organizations, water user groups and NGOs. The Honourable Hackman Owusu-Agyemang, the Minister of Water Resources, Works and Housing for Ghana was the special guest of honour and the welcome address was given by Mayor of Accra, Honourable Stanley Adjiri Blankson. The launch was a huge success and other participants pledged their support to the LA process. SWITCH in Accra is seeking to collaborate with similar projects in Accra such as TECHNEAU. For more information about the Accra LA contact Prof. Mrs. Esi Awuah (KNUST) esiawuart@yahoo.com; Dr. Mrs. Olufunke Cofie (IWMI) o.cofie@cgiar.org; or Bertha Darteh (SWITCH Accra Secretariat) berthadarteh@yahoo.co.uk.
- **Learning Alliance blogs:** The Learning Alliance blogs are where you can find information on workshops, training activities, demos, inputs and outcomes as well as e-group discussions. These currently exist for Lodz: <http://switchlodz.wordpress.com/> and Accra <http://switchaccra.wordpress.com/>.
- **Lessons learned from the Lodz Learning Alliance:** Capturing and sharing lessons learned from the Lodz SWITCH Learning Alliance through process documentation. By Nadia Manning (IWMI), full report available at: <http://processdocumentation.wordpress.com/2007/07/19/lessons-learned-from-the-lodz-learning-alliance/>.

3. Switched On Cities

SWITCH Accra city story

Accra, like many parts of the world, faces challenges in accessing clean and safe water. The water distribution network is limited but existent. More than 50% of the population do not have house or yard connections. They get their water supply from secondary sources such as water tank operators at exorbitant prices. This means the urban poor who are not connected to the GWCL network pay more for the same quantity of water supplied. Read more at <http://www.switchurbanwater.eu/page/1649>.

SWITCH Alexandria city story

Satisfying the increasing water demand, developing local water resources, collecting and separating stormwater and making use of it, along with groundwater use, grey water recycling, reuse of treated wastewater, water demand management, allocating the appropriate water resources to the appropriate water uses, exploring other non-conventional water resources such as sea water or brackish groundwater desalination, and protecting water ways, and water bodies such as lake Maryut from pollution are some of the challenging water management issues that puts pressure on the city of Alexandria. Read more at <http://www.switchurbanwater.eu/page/1670>.

- **Alexandria demonstration city activities - Sustainable neighbourhood-scale IUWM**

This aims to promote more sustainable service delivery and improved urban development in sensitive environments to reduce the burden of new development on water resources, utilities and the environment. The demonstration activities would be focused on how two contrasting areas might develop more sustainable water management schemes.

SWITCH Beijing city story

Beijing has decided to direct businesses which consume large amounts of water out of the city, including irrigated agriculture, which would deprive the livelihoods of many people, notably migrant farmers. The goals of what needs to be achieved in the water sector according to the 11th five year plan are ambitious. Read more at <http://www.switchurbanwater.eu/page/1731>.

- **Beijing demonstration city activities - Water Use for Urban Agriculture**

Improvement and wider application of rainwater collection for urban agriculture linked to cooperative production of market oriented products. The emphasis will be on effective use of water in urban agriculture by introducing new appropriate technologies for capturing water and its use (for instance drip irrigation), increasing its efficiency, and financial feasibility replication by others.

SWITCH Belo Horizonte city story

The overall metropolitan area (RMBH; Belo Horizonte Metropolitan Area) consists of 33 distinct municipalities with an area of 9,179 km² and 3,900,000 inhabitants. Population growth in Belo Horizonte is virtually reaching a saturation level. Read more <http://www.switchurbanwater.eu/page/1727>.

- **Belo Horizonte demonstration city activities**

For an overview of the four demonstration projects taking place in Belo Horizonte, Brazil:

1. Infiltration trench and detention systems
2. Retro-fit infiltration trench

3. Retrofit wetland and detention basins
 4. Combined detention basin and creek restoration
- Read more at <http://www.switchurbanwater.eu/page/289>

SWITCH Birmingham city story

Birmingham is a modern, diverse and multicultural society and sees itself as being the "second city" in the United Kingdom. In the future, most new developments will be built at densities higher than have occurred in the past. Read more at <http://www.switchurbanwater.eu/page/1669>.

- **Birmingham demonstration city activities - Extensive green roofs**

The creation of an extensive network of green roofs in Birmingham city centre provides a suitable habitat for black redstarts and other wild life species. In addition, extensive green roofs offer broader integrated environmental and biodiversity benefits such as keeping buildings cool, reducing water demand for toilet flushing, and maintaining brownfield sites and species diversity. For further details see <http://www.switchurbanwater.eu/page/254>.

SWITCH Chongqing city story

Chongqing is located in the southwest of China and has become the most important economic and cultural centre in the upriver of Yangtze River and the Three Gorges Area in the last few years. After being granted MCG status, Chongqing restructured its territorial and administrative organization. Chongqing MCG greatly expanded its administrative boundaries. Read more at <http://www.switchurbanwater.eu/page/1732>.

- **Chongqing demonstration city activities - Greywater Demo-Project**

An integrated scheme of grey water reuse and landscape irrigation is proposed for the Huxi Campus of Chongqing University. Greywater from 21 high rise developments will be treated onsite by constructed wetland; rainwater will be treated with shallow grass trenches. This will reduce potable water consumption by 150 million litres a year. Read more at <http://www.switchurbanwater.eu/page/1662>.

SWITCH Hamburg city story

Hamburg has a central water supply system with several wells that tap large aquifers. Since the mid-1980s the average water consumption per capita has reduced. Read more at <http://www.switchurbanwater.eu/page/1726>.

- **Hamburg demonstration city activities - Water Sensitive Urban Design (WSUD)**

WSUD improves both water quality and urban/ landscape design, leading to a more holistic view of sustainability. This includes ecological, social and cultural considerations surrounding urbanization and growing cities. A 'Strategic Water Management Plan' for Wilhelmsburg Island is being developed, alongside a small scale demonstration project of WSUD. Read more at <http://www.switchurbanwater.eu/page/181>.

SWITCH Lodz city story

The City of Lodz is a city of 800 thousands inhabitants (agglomeration of 1 million inhabitants), located in central Poland. The city is located on a steep between uplands and lowlands and the area raises from 180m above sea level in its western part to 235m in the East, on the first order watershed between the Vistula and Oder Rivers System (the two major basins in Poland). Find out more at <http://www.switchurbanwater.eu/page/1728>.

- **Lodz demonstration city activities:**

- Two photo exhibitions 'Earth from Above' and 'The Rivers of Lodz' have taken place. The Rivers of Lodz presents the state of the Lodz rivers, and their role in the life of the city and its inhabitants. It expresses the concern and interest of Lodz society shown in presence of water in the city landscape. It emerged as initiative of the NGO "Nud-NO", the students of the University of Lodz and the SWITCH Project. Read more at <http://picasaweb.google.co.uk/processdocumentation/Movies/photo#5088883232>
- 'Faces and Spaces' is an presentation of photographs taken in Lodz on how rehabilitation and restoration projects around water can be made more socially inclusive. Available at: <http://picasaweb.google.co.uk/processdocumentation/SWITCHPhotography/photo#5088883232>
- 'Expectations for Sokolowska river' video, available at: <http://picasaweb.google.co.uk/processdocumentation/Movies/photo#5088950356>
- This 8 page supplement in the national newspaper Gazeta Wyborcza produced by the writing / voice group of the process documentation workshop held at Lodz in July shows how the SWITCH project is trying to promote learning and change for better water management in the city of Lodz. Read more at: <http://www.switchurbanwater.eu/content/download/2032/10440/file/SWITCH%20writing%20final.pdf>.

SWITCH Tel Aviv city story

Tel Aviv has developed into a modern city of 371,400 inhabitants occupying an area of 51.76 km² (area of dwelling 77.3 km²) with a high population density (7200 persons/ km²). Tel Aviv is a wealthy city compared to the national average and is the commercial centre of Israel with a population of over one million arriving to the city during the day. Read more at <http://www.switchurbanwater.eu/page/1730>.

- **Tel Aviv demonstration city activities - Soil Aquifer Treatment (SAT)**

The development of effective and sustainable water treatment and storage technology uses SAT as a prefilter for nanofiltration (NF) of the microbial and chemical contaminants that constrain potable water reuse. Due to growing demand for housing and energy, an improved short SAT-NF system is being developed, as an alternative to large infiltration fields. Read more at <http://www.switchurbanwater.eu/page/268>.

- You will find here several presentations in ppt format on demo city Tel-Aviv: <http://www.switchurbanwater.eu/page/1061>.

SWITCH Zaragoza city story

Zaragoza is at the confluence of two tributaries, the Rio Gallego from the north and the Rio Jalon from the south. The valleys are green from irrigation and the surrounding hills are barren. Water supply is currently abstracted from the Rio Ebro via the Imperial Canal on the south bank of the river. Read more at: <http://www.switchurbanwater.eu/page/1729>.

- **Zaragoza demonstration city activities - Water Demand Management**

Zaragoza is committed to reducing daily consumption of water to 90litres per person by 2010. This will be achieved through two recognized approaches: water loss management, and reducing water consumption. The demonstration will reduce user consumption and losses from the distribution network as well as showing the potential of an integrated resource planning approach. Read more at <http://www.switchurbanwater.eu/page/247>.

Emscher Region, Germany (demo project) - Urban Stormwater Management

Four demonstration projects on:

- Discharging roof runoff into retention areas
- Disconnection of impervious roads to reduce hydraulic overload
- A Best Management Practice combining storm water drainage and regulation of high groundwater levels
- Restoring connectivity of a river catchment as part of the rehabilitation of a former steelworks area

4. Events and Training

A series of training events are being organized by the SWITCH project in order to support the development of effective learning alliances. They are held in partnership with other programmes, and most of the events are also open to researchers and practitioners from outside the SWITCH project. Materials and outputs from past events, and details about forthcoming training opportunities are available at:

<http://www.switchurbanwater.eu/page/1821>.

- **Facilitation skills**

The objective of the SWITCH training workshops on 'Learning Alliance Development and Facilitation' is to advance and consolidate the establishment of city Learning Alliances through training of facilitators. It focuses on introducing useful tools and approaches that facilitators might use to support Learning Alliance development and activities. The course has been run in Cairo, Egypt from 24-27 January 2007, in Lodz, Poland from 28-31 March 2007 and Lima, Peru from 4-6 June 2007. Materials and workshops reports are available at <http://www.switchurbanwater.eu/page/1197>. During the training course participants worked on 'city building blocks' or posters where they captured ideas and lessons learned from the session. These were translated into things to take home from the workshop. In some cases these were concrete plans for activities, in others, questions arose that need to be answered by colleagues back home. You can find the outputs from these here: <http://www.switchurbanwater.eu/page/1218>.

- **Process Documentation**

The City of Lodz and its Learning Alliance is very active. Research activities in the first year were aimed at providing background information for further research and implementation. The first reservoir at the Sokolowka river catchment was constructed and experimental plantation at the protective zone of the Group Waste Water Treatment Plant at the Ner River has been developed and exploited. Learning Alliance activities included mapping of potential institutions and stakeholders to participate in the LA. These activities have included a training workshop in July on 'Process documentation for learning alliances and action research', organized by the IRC International Water and Sanitation Centre (www.irc.nl), ERCE - the European Regional Centre for Ecohydrology under the auspices of UNESCO (www.erce.unesco.lodz.pl), and the EMPOWERS Partnership (www.empowers.info). Dissemination of Lodz activities included presentations on the World Water Forum in Mexico and other conferences and the publication of a chapter in the UNESCO IHP Urban Water Series (2007). The full workshop report is available at <http://www.switchurbanwater.eu/page/2091>.

Report of training for consortium in LA approaches: At the start-up meeting in April 2006, two days of training in Learning Alliance approaches involved the whole SWITCH consortium. The Report of Learning Alliances Training is available at <http://www.switchurbanwater.eu/page/1790>.

Future events

Learning and sharing workshop: Later in 2007, the SWITCH project will co-organize a training workshop to learn and share from experiences in developing Learning Alliances. By this time, SWITCH partnerships for innovation in urban water management will be almost one year old. Participants from other programmes followed Learning Alliance type methodologies will be welcome. The location and dates will be confirmed shortly. For more details please contact Joep Verhagen verhagen@irc.nl at the IRC International Water and Sanitation Centre.

The SWITCH 2nd Scientific Meeting is to be held in Tel-Aviv, Israel, 25-29 November 2007. Further information can be found at: <http://www.switchurbanwater.eu/page/2075>

SWITCH LA Training Workshop: Soil/Aquifer based natural systems for drinking water and wastewater treatment: November 28th and 29th 2007, Tel Aviv. All SWITCH partners and LAs are welcome to attend. Details at (requires login) <http://www.switchurbanwater.eu/page/2084>.

'Visioning and Scenario planning' workshops are taking place this year in all the demonstration cities, in preparation for the Strategic City Water Vision for 2030. Further details are available at (requires login) <http://www.switchurbanwater.eu/page/2079>.

5. Publications and Outputs

There are a great many reports, publications and presentations arising from the SWITCH project, with more becoming available all the time. A selection of Briefing Notes which have wide application can be found at <http://www.switchurbanwater.eu/page/2132>.

Briefing Note: Sustainable stormwater management

National Technical University of Athens (NTUA), Greece

Sustainable drainage systems are cost-effective easy-to-manage solutions, designed to manage runoff flow rates, reduce the impact of urbanization and the danger of flooding, provide water treatment, protect water resources from point and diffuse pollution, and create new habitats for wildlife and plant life. They can replace existing sewerage systems which are close to full capacity.

Briefing note: On-site wastewater treatment, recycling and reuse

National Technical University of Athens (NTUA), Greece

On-site water recycling and reuse systems involve reclaiming wastewater on site, as well as harvesting rainwater and distributing reclaimed water within the buildings for non-potable use. They have great potential as water conservation measures, and can also reduce the need for infrastructure expansion required for water distribution and wastewater collection. Although there are some applications of such systems in the domestic sector, this approach to water conservation is still largely unknown and is consequently often overlooked as a possibility.

Briefing note: Climate change and water management for Alexandria

This describes the geographic and climatic conditions prevailing in Alexandria. Predictions of climate change are discussed and their impacts on urban water systems, with some possible adaptation measures outlined.

Briefing note: Water conservation measures in the domestic sector

Water conservation is often associated with curtailment of water use and doing less with less water, typically during a water shortage, such as a drought. However, it also includes day-to-day demand management to achieve water efficiency: using improved technologies and practices that deliver equal or better service with less water.

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