

INFLUENCING URBAN WATER MANAGEMENT THROUGH LEARNING ALLIANCES: A MID-TERM REFLECTION ON AN EXPERIMENT IN ŁÓDŹ, POLAND¹

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INTRODUCTION

Water and the city of Łódź

The presence of 18 streams has been a key factor in the history of Łódź. Providing an essential water resource, they were part of the reason why Łódź, located right in the centre of Poland, was transformed from a provincial town to major manufacturing centre. Rapid industrialization and growth of the textile industry in the 19th century led to the city becoming known as ‘the Polish Manchester’. The city has changed considerably since. The 1930s depression and collapse of the Soviet empire after 1989 both decimated the markets for the cities textiles. None of the major textile mills enterprises are left and the population has fallen significantly (to just under 800,000 persons). Efforts to revitalize the city are again looking to water to provide inspiration. Streams polluted with sewage, that were once canalized and buried underground, are being recovered and cleaned. A city whose symbol is a boat, is searching for its rivers. Alliances of city managers, academics, activists and investors are aiming to again utilize the power of these restored rivers in a different way: as an attractive centerpiece for new urban development and revitalization. Ecologically-focused restoration of rivers and associated green spaces in the city aims to help to reduce flooding risks, improve the water quality of streams and aquatic habitat, and provide a spur to economic development and regeneration.

Box 1. Water supply isn't Łódź's biggest challenge

The water supply situation in the city is fairly good and demand has fallen by more than half since the end of communism (and the restructuring of the economy and a fall in population). Per capita consumption is now 117 litres per capita per day and is falling towards the EU average (100 lpcd) as a result of awareness raising campaigns to use water wisely. Almost all houses are metered. The city abstracts water from a river intake on the Pilica River about 40 kms from the city and nearby wells. Diverse sources and alternative wells and intakes mean the supply is very secure, and quality is good because 90% is abstracted from wells. Public wells in the city, often handpumps in parks and public places, are also maintained. These help make water visible in the city. Environmental sanitation and stormwater management pose much bigger challenges than water supply in the city.

An innovative approach to urban water science

A narrow focus of much technical research and a neglect of political context or developmental processes have been linked to the disappointing impacts of many water

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management research projects (Gyawali et al., 2006). Common shortcomings of research are that water management science focuses on the interests of the researchers rather than the concerns of potential research users, that it fails to take an integrated approach because of the division of problems into fragments and work within scientific disciplines (a good example is not involving economists at an early stage to analyse the cost of technologies and their use, or not involving political scientists in development of decision support processes) and that research results published in scientific papers don't reach the people who need this information.

The Sustainable Water Management Improves Tomorrow's Cities' Health (SWITCH) project is a major research partnership funded by the EC, with a budget exceeding €20 million, undertaking innovation in the area of integrated urban water management (IUWM). Rather than solely focusing on new research, the project is encouraging learning alliances to help set the research agenda and to put research across different aspects of the urban water cycle into use in cities to help improve integration and scaling-up impacts. One of the objectives of SWITCH is to *do better*, meaning: developing research interventions that are more integrated; research is put to use and sustained after the project; and learning and sharing of lessons so that innovations can be scaled up. Many of the challenges faced in getting research into use, and replicated at scale, are not only technical, but also related to issues of governance, financing and administration. To be effective and address the needs of the cities involved, SWITCH has aimed to engage the relevant stakeholders and establish linkages between research providers, knowledge managers and research users through learning alliances. Learning alliances are at the centre of the SWITCH approach.

This paper

At the middle of the SWITCH project, two and a half years into a five year research programme, Łódź appears to have been one of the most successful cities in operationalising the learning alliance approach. Based on a better understanding of basic scientific processes, several innovative methodologies for integrated and sustainable improvements in urban water management are being tested in demonstrations involving research users, and through the learning alliance in the city, new linkages have been forged between scientists, decision makers and other key stakeholders creating the potential to scale up the use of research results. Mid-way into this ambitious project therefore, this paper aims to draw preliminary lessons and make recommendations from the Łódź experience that might help inform the implementation of the remainder of the project in the city, and offer insights for other SWITCH cities and similar initiatives aiming to put 'research into use'.

The paper is based upon the authors' own experience as 'agents-for-change' within the process, interviews with a selection of members of the Łódź learning alliance, and review of project documents. The authors' roles as the learning alliance facilitator and city coordinator in Łódź, and as external 'coaches' to the process make us far from impartial. However, following the best practice principles of process documentation (Schouten *et al.*, 2007) we have sought to be self-critical and reflective, and to check our own perceptions and views. The paper remains a working paper for discussion and aims itself to support learning in Łódź through discussion of its contents. After outlining key elements of the SWITCH project methodology in Łódź including the project's theory of change and the approach to develop the learning alliance, the paper highlights results achieved to date in a progress review of the project before suggesting some of the lessons the authors have learnt and making recommendations intended to help both SWITCH in Łódź be a more effective project and to maximize the impact and sustainability in other cities.

PROJECT METHODOLOGY

Urban water management science

The project aims to introduce a package of measures under the heading of *integrated urban water management* that will together reduce flood peak flows, reduce the levels of pollution in rivers, and improve the quality of the urban environment through making Łódź's hidden rivers more accessible and attractive. Reduced flows from flash storm events will have benefits for wastewater treatment and reduced stormwater pollution, as well as protecting the city and properties. Flooded roads sometimes lead to severe traffic congestion and disruption. Pollution levels in watercourses need to be reduced to make waters safe for recreational uses and to improve the riverine ecology following targets set out of the EU water framework directive. Making Łódź's rivers more visible and restoring channels to more natural conditions aims to make water a focus of revitalization efforts in the city and provide attractive waterside settings for the public. Although changing as the project follows its path of implementation and the priorities of stakeholders emerge, this package of measures includes the introduction of new technologies which can be considered under the following headings.

River restoration following ecohydrology principles

Harnessing the natural abilities of rivers and their ecosystems to retain nutrients, break down pollutants and cleanse themselves, the SWITCH project in Łódź is piloting river restoration based upon more natural approaches to river and habitat engineering. Restoration is underpinned by ecohydrology principles that emphasise the links between hydrological and ecological processes (Zalewski et al. 1997, Zalewski 2006). This includes the creation and restoration of river floodplains and wetlands, the design of ponds and reservoirs that provide multiple functions including recreational and aesthetic benefits as well as reducing flood peaks, and providing green spaces along urban river valleys that contribute to improved health and quality of life. Downstream areas to the city have also been badly polluted through years of sewage disposal, and river and floodplain sediments have been contaminated with heavy metals and organic compounds. Ironically, these may be mobilised and pollution made worse as a result of falling groundwater levels that are linked to reduced water uses and discharges in the city in modern times. Phyto-remediation measures adapted to the changing hydrology, including the use of willows and native plant communities have the potential to help prevent the release of heavy metals and other toxins.

Utilising sewage sludge as a productive resource

Sewage sludge is a waste product that is problematic to dispose of, but composted sludge can be used as a fertiliser to cultivate useful crops. Currently most sludge generated in Łódź is landfilled but the landfill sites are becoming full. The city has decided to incinerate sludge and started to construct an incinerator, but an alternative is to use sludge to fertilise crops like willow which can be used as sources of biomass energy. Extending sewage treatment by constructing willow plantations may partially solve the sludge disposal problem and generate additional benefits. Willow wood chips from short rotation forestry could potentially meet the energy needs of municipal buildings in the City of Łódź as well as disposing of sewage sludge. However, the high level of heavy metals in the polluted sludge is a major problem and severely limits the amount of sludge that can be applied.

Decoupling stormwater drains and sewers, and sustainable urban drainage

Separating stormwater and sewerage flows has emerged as a key issue for city stakeholders. It is necessary to separate these flows in order to up-scale the SWITCH activities to other rivers and safely bring them back to the surface. Separation of stormwater from the municipal sewage is also important for achieving a high quality of treated sewage as the plant cannot cope well with highly diluted wastewater. During flood peaks the plants' ability to purify

sewage is reduced since the treatment process requires a residence time of the received sewage at the plant of 12 hours. Shortening the sewage residence time lowers the quality of the treated water at the outflow and impacts on the receiving Ner River. Separation of the stormwater and its retention in the landscape and rivers could reduce flooding and improve water quality.

Intervention logic

The intervention logic of the SWITCH project in Łódź can be described under the following hypotheses. Together these form the project's theory of change: how SWITCH aims to make a difference in the city and beyond.

Improved monitoring of basic ecological and hydrological processes will lead to better understanding of the role of rivers within management institutions and better designed management interventions

The project is putting considerable effort and resources into surveys, establishing monitoring systems and other research to understand fundamental ecological and hydrological processes. This effort includes monitoring of water flow, water quality, and ecological surveys. The data provides a critical baseline for the design and monitoring of interventions.

Incorporating ecohydrology and 'closing the loop' principles into the urban water system and practice of city water management agencies will lead to more effective and sustainable solutions that minimise environmental impacts

SWITCH is encouraging the better design of urban water 'systems', and piloting alternatives. There are two major foci of these action research or demonstration initiatives. The first involves river restoration based upon ecohydrology principles in an urban river valley that crosses the north of the city, the Sokołowka River. The City Office Department of Infrastructure, advised by the University of Łódź, is re-engineering the river along more natural principles. Improved stormwater retention ponds are being constructed to fulfill multiple roles, aiming to create more effective structures that provide more benefits and cost less to maintain and the self-cleansing capacity of the river is being enhanced. The second focus of demonstration is testing the feasibility of the reuse of sewage sludge in the cultivation of willow as an energy crop. Disposal of heavily polluted sludge is a major problem for the wastewater treatment plant, and this pilot involving the company managing the plant (GOS) and the University aims to test the effectiveness and safety of using sludge productively.

Involving city stakeholders at all stages of the research will lead to identification of more effective research topics and science results that are more widely used within management agencies

The project team has been thinking about use of the research and the scaling up the demonstrated technologies from the outset to maximize the impact of their work. The learning alliance aims to create the conditions for a productive stakeholder dialogue on goals, problems and solutions and to jointly plan activities, share results more widely and quickly than would be normal practice, and to utilize as much local and outside expertise as possible in putting research into use. Although the initial research topics were quite well defined before the learning alliance was established, the project team has tried to be flexible in responding to the needs expressed by stakeholders in the learning alliance and to support the follow up of opportunities for scaling up innovatives by supporting other organisations to make use of research findings and to transfer approaches e.g. to other urban rivers in the city.

Advocacy and public awareness activities will lead a wider sense of ownership of urban rivers and lead to actions to protect them

To build a wider alliance – beyond water professionals and immediate stakeholders – the SWITCH team in Łódź has undertaken a wide range of awareness raising and advocacy activities. These have including engaging youth to raise their awareness of environmental issues and to create interest in the city’s hidden rivers. A school art competition awarded prizes to the best paintings, the student group held a photography exhibition on water in the city and schools have made class visits to the Sokolowka River. The mass media, especially radio and newspapers, have also been engaged whenever events have provided opportunities. A website also provides a central source of information on the project in Łódź (<http://switchŁódź.wordpress.com/>).

Łódź’s learning alliance

Researchers from the University of Łódź have been co-operating with the City of Łódź Office since the mid 1990’s, and this was the basis for joint application to the SWITCH project. Co-operation has been substantially enhanced since the Łódź SWITCH Learning Alliance has been established and EU funds were available for activities. The process started in March 2006, engaging initially the stakeholders with the most critical perceived roles in water management. Over time, additional important actors have been identified and involved, and a learning alliance facilitator was appointed by the University to support and coordinate the process (October 2006).

Out of a total budget for activities in Łódź of €1,000,000 (both University and City Office over five years, including the City of Office contribution for investments of €750,000) a total of about €30,000 has to date been invested in learning alliance activities. The SWITCH budget is relied upon to finance the learning alliance facilitator and activity costs although there are also usually in-kind contributions from members such as meeting rooms provided for free and refreshments for participants, and voluntary work of the PhD students. In addition to the learning alliance and city coordinator, University/ERCE staff have been hired to support events on the casual basis when needed for support with meeting preparation or training events. The learning facilitator received training to support her work including training courses (usually 4 or 5 days each) in learning alliance facilitation and development, process documentation, and monitoring and evaluation.

Some of the main stakeholders engaged in the Łódź SWITCH learning alliance, and their roles, are included in Box 2. The links among these stakeholders are not as strong as they could be and the SWITCH Learning Alliance platform has worked to strengthen the connections.

Box 2. Some of the stakeholders in urban water management involved in the Łódź SWITCH learning alliance

City of Łódź Office (UML): The Sub-department of Infrastructure in the Department of Municipal Management of the City Office has a number of important roles in water management. They issue permits in relation to activities that interfere with rivers like the laying of cables and pipes, are responsible for management of stormwater, supervising the Łódź Infrastructure Company to whom the city’s water and sanitation infrastructure is leased and supervising the companies that supply water and treat wastewater. One project within the sub-department is the restoration of the Sokolowka River. Other important departments within the City Office are: the Sub-department for Environment, Water Management and Geology in the Department of Environment and Agriculture which issues water permits and plays a key role in environmental planning; the Sub-department for Protection of Green Areas and the Sub-department for Maintenance of Green Areas and Agriculture; the Department of Strategy and Analysis involved in development strategy and collection and analysis of

key data, and with a unit focusing on revitalization and long-term development; the Department of Spatial Planning and Architecture; and the Office for Spatial Planning of the City of Łódź who amongst other things are preparing the Sokolowka local development plan.

The *Łódź Infrastructure Company* (LSI) owns and develops the treatment plants and networks for water supply and sewerage in Łódź. They don't operate these systems: that is the role of ZWiK who operate the water and sanitation networks and supply consumers, and GOS who run the wastewater treatment plant. Currently the city is in the middle of a major programme to upgrade water and sanitation networks to improve water quality and reduce leakage and extend the sewerage network, funded by the EU cohesion fund. Many of the roads and tram lines have been dug up and new sewers and water piping are being laid underneath. Combined sewers in the city centre are being replaced to eliminate overflows of sewage into rivers.

The *Water Sewerage System Company* (ZWiK) supplies water to consumers in Łódź (and Tomaszów Mazowiecki where the main abstraction points are located) managing over 2000 km of water and 1600 km of sewage piping. The company manages water abstraction, treatment and supply to consumers, and maintains the sewage network (but it does not run the wastewater treatment plant). Recently, following flash floods, the company has taken on additional tasks relating to maintenance of the stormwater drainage system.

GOS (*Group Waste Water Treatment Plant for the Łódź Agglomeration*) operate the wastewater treatment plant that treats all the sewage collected across the city.

Learning alliance activities

Table 1 describes the major learning alliance activities to date. These are grouped following the four hypotheses which together represent the project's intervention logic in the city: 1) monitoring and surveys to improve understanding of scientific processes, 2) design and pilot implementation of innovations, 3) learning and sharing within learning alliance to have wider impact, 4) advocacy and dissemination to raise wider awareness, and finally 5) those additional 'background' activities that are vital to the facilitation of the SWITCH process in the city. The table gives an overview of the scope and scale of activities involving the learning alliance.

The initial phases of learning alliance development included developing and training a facilitation team, developing a website and communication mechanisms and at least 3 major workshops on different urban water management research areas. The workshops were held with the curious, motivated and constructive participation of all the groups of stakeholders, with each workshop extending the forum to a larger group identified by the participants in the initial stakeholder analysis and through the activities and discussions. Each of the workshops were run with the help of the methodologies learnt and developed by the SWITCH facilitation team, and which contributed to the outputs such as workshop documentation to capture progress and help take activities forwards.

At the beginning of the process, facilitation was based mostly on the existing contacts, face-to-face meetings with the identified and new members, and presentations of the project to various possible learning alliance partners in the city and region especially at organised or external meetings. With time, more emphasis was put on organising dedicated meetings for all the learning alliance members (three or four times yearly with long breaks between), and e-mail communication between them. Ad-hoc working meetings with the learning alliance members involved in particular aspects of the project were organised frequently, sometimes even weekly with different groups and partners).

Assessing effectiveness of the learning alliance

The Łódź SWITCH learning alliances aims to achieve an improved research process, and it is important to have ways to track and judge whether the approach is effective, but standard

impact evaluation methods are not likely to be applicable. Learning alliances place emphasis on changes in perceptions, behaviours, and increased collaboration for scaling up. Two innovative methods of assessing effectiveness of the learning alliance being used in Łódź that can capture these type of changes are scoring ladders (see Box 3) to assess mainly qualitative change (Sijbesma and Postma, 2008; Butterworth and Da Silva, 2008) and process documentation (Schouten *et al.*, 2007).

Process documentation is important for projects with social or political objectives such as empowerment, stakeholder cooperation, integration etc. These projects have the ambition to change traditional patterns, attitudes, relationships, approaches and ways of thinking. They should therefore try to understand the context and background of these attitudes, relationships and approaches. Process documentation is a tool that helps project staff and stakeholders to carefully track meaningful events in their project, ‘in order to discern more accurately what is happening, how it is happening and why it may be happening.’ (Annie E. Casey Foundation, 2003; Schouten *et al.*, 2007). A training course in July 2007 made the approach available to the SWITCH project team in Łódź. This project itself is an example of process documentation, and due to time constraints is the first process documentation output produced by the Łódź team.

Table 1. Some major activities in the process of the development of the Learning Alliance in SWITCH Project Łódź, Poland

Year	Qtr	Monitoring and survey activities	Pilots	Learning activities in the city	Creating wider awareness	Behind the scenes facilitation and other activities
2006	1	Defined preliminary research scope and identified research partners	Started design of demonstration projects		Design and distribution of a first brochure about SWITCH activities in Łódź	Interviews, face-to-face meetings, presentations for identification of the core LA members Presentation of the project concept: World Water Forum in Mexico
	2	Launch of the PhD research (Application of Ecohydrology for urban river restoration ...) Establishment of monitoring stations and starting research activities on the demonstration sites	Start of construction of the Teresa Reservoir First Demonstration Activity Report – WWTP – state of Art	Scoping Meeting involving the members of the SWITCH Management Team and the core Łódź LA members (first meeting with 12 members participating) Presentation of the Demonstration report to the LA	Publication of an article in a local journal by the City Office, Necessary reanimation: Sokolowka river comes back	First draft of Stakeholder analysis Key LA members (8 members) identified Identification of further institutions to be invited to join Łódź LA
	3	Launching of MSc theses in SWITCH	Development of a mathematical model of stormwater runoff and retention in the Sokolowka catchment	SWITCH Łódź presented at revitalisation conference		Setting the Action Plan for establishment of Learning Alliance
	4			First annual RTD report (Sokolowka – monitoring and baseline studies) shared ???	Publication of conceptual journal paper on Ecohydrology – the use of water ecosystem processes for healthy Urban Environments.	Appointment of the LA Facilitator Production of an integrated City Story Line (12-36M)
2007	1		Biomass harvesting on the energetic willow plantation	Working meeting of the Łódź SWITCH learning alliance (30 participants) on stormwater management and GIS tools for decision support systems in urban water management		Presentation of the RTD report to the LA Presentation and approval of the SWITCH Łódź Project goals and objectives to the Łódź City Council by the University of Łódź and ERCE LA Facilitation training for the SWITCH LA facilitators (4 SWITCH cities)
	2		Tree surveys undertaken which served as the basis for the creation of the Sokolowka Valley Park and its landscape design Establishing of the vegetation	Łódź City agree to co-operate in the EU Project Raindrop	Launching of the City Web-page and communication platform Article in a national daily newspaper: “Łódź makes itself a river”	Communication with the local media for assuring the project dissemination

		zone on the Teresa Reservoir		Publication of a paper in the local newspaper by the LA member (City of Łódź Office): The rivers of Łódź and their restoration, Special issue of "The Municipal Review"	
		Establishing of new plots on the energetic willow plantation		Rivers of Łódź - photo exhibition organised with the NGO "Nudno"	
		Presentation of the DSS Model on the WWTP to the LA		Presentation of the SWITCH project at the exhibition "Earth from Above".	
3	Start of PhD study (PCBs, PCDDS, and PCDFs concentrations in the Sulejow, Wloclawek, Jeziorsko and Sokolowka reservoirs sediments and biota)			Preparation of 2 films, photographic and journalistic documentation (Gazeta Wyborcza) about the SWITCH in Łódź.	LA Process Documentation training (involving over 50 participants from all the SWITCH cities)
				Two articles in the in Łódź edition of a national daily newspaper on SWITCH and Process documentation workshop	
				Second brochure and poster "Sokolowka River Valley – Local Development Project"	
4	Launching of MSc theses in SWITCH	Biomass harvesting on the energetic willow plantation	Developers investing in the Sokolowka river valley contact LA for more information and consultation; involving into the LA activities	Final of the artistic competition for schools "Water in Łódź – the City of the Future"	Preparation to the Visioning Workshop – face to face meetings, letters and e-mail communication
	Second annual RTD report			Film and TV broadcasts mentioning the SWITCH activities on the Ner river: "The green light for the Ner River"	
2008	1	Preliminary design of the Sedimentation Chamber on the Sokolowka River	Presentation of the 2 years RTD results and consultation with the LA (reporting session)		Presentation of the SWITCH 2-nd year results to the LA members: RTD, LA, implementation, by all the involved LA members and partners
		Design of the Zabieniec reservoir completed	Visioning Workshop (about 60 LA members and participants, including national level representatives)		Setting the City Story line (25-42M)
			Presentation "... management plans for the Łódź rivers as a part of the Spatial Development Plan for the City" by ERCE to the City of Łódź		
	2	Installation of On-line hydrological monitoring station	Second stage of the vegetation zone planting on the Teresa Reservoir	Use of LA methodology in visioning for Łódź revitalisation – a conference on all the revitalisation aspects of the urban development, including water	Information table on the investments on the location of the Sokolowka River Demonstration Project.

Box 3. Monitoring learning alliance outcomes

Five objectives (four are shared with other SWITCH cities, while one was added to specifically monitor issues related to social inclusion in Łódź) each with related indicators are being used in Łódź to monitor learning alliance progress:

1. We know who learning alliance members are, and how to communicate with them effectively
2. Regular, effective and innovative events capture interest of learning alliance members
3. Demonstration activities are undertaken within a framework for scaling-up
4. We understand why change is occurring in relation to integrated urban water management, not just what happens
5. Issues of social inclusion (gender, poverty and other marginalised groups) are systematically mainstreamed across all SWITCH activities in the city.

For the third objective, demonstration activities are undertaken within a framework for scaling-up, indicators are the availability of demonstration plans, the level of ownership of these plans, and commitments made to scaling-up implementation. An example of how scenarios are developed based on the indicators and how these are used to assess progress is given below:

Scenarios for objective 3	Score
Demonstration activities are initiated without significant discussion in the learning alliance	0
Demonstration activities are decided after limited consultation with some members of the learning alliance	25
Demonstration activity plans are consistent and integrated within LA plans (city storylines) and are supported but without clear commitments to scaling-up	50 benchmark
Learning alliance members with potential to scale up demonstration activities pro-actively made suggestions and proposals that were addressed in demonstration plans.	75
Learning alliance members maintain a keen interest in demonstration activities at all stages and report back against their initial commitments to scale-up interventions.	100
Justification of score (Januray 2008)	Score awarded
<p>There is evidence that learning alliance members do undertake proactive efforts towards upscaling and replication of the demonstrative solutions, the most significant examples being:</p> <ul style="list-style-type: none"> • requests by the Head of Architecture and Urban Planning Department of the City of Łódź Office to consult the learning alliance members on the approval for the external investment plan for the Sokołowka Valley redevelopment plan • an invitation to cooperate on the development of the city spatial plan in the area of the river corridor and protection, which opens possibilities for implementation at a city-wide scale, • The Economic Chamber Polish Waterworks asked the SWITCH Łódź team to publish an article about the project in the chamber's quarterly journal, which is circulated to 400 member organizations. 	75

With relatively limited resources for monitoring, SWITCH learning alliances have initially agreed to implement this relatively simple method of monitoring in all cities using a mix of common and city-specific objectives and indicators.

RESULTS AND DISCUSSION

Although it is recognized that an important part of the research is focused on understanding basic processes, this underlying research is well documented elsewhere and is not a major focus in this paper. In this section, the focus is placed on testing interventions through pilots and influencing stakeholders within the city.

Testing principles through pilots

Revitalisation of the Sokolowka Urban River Valley

Mutual learning, information sharing and awareness rising through the learning alliance have led to a series of technologies/ interventions Sokolowka River as a demonstration project for river restoration in the city. These have included construction of reservoirs (one completed in 2006, one under construction, one in design), construction of a biofilter for stormwater purification (approved by the City Council, designed, and in the formal process of implementation), development of a Sokolowka park (approved by the City Council and budget allocated), and consideration of best management practices, river restoration and ecohydrological processes by developers. Figure 1 summarizes these investments along the river.

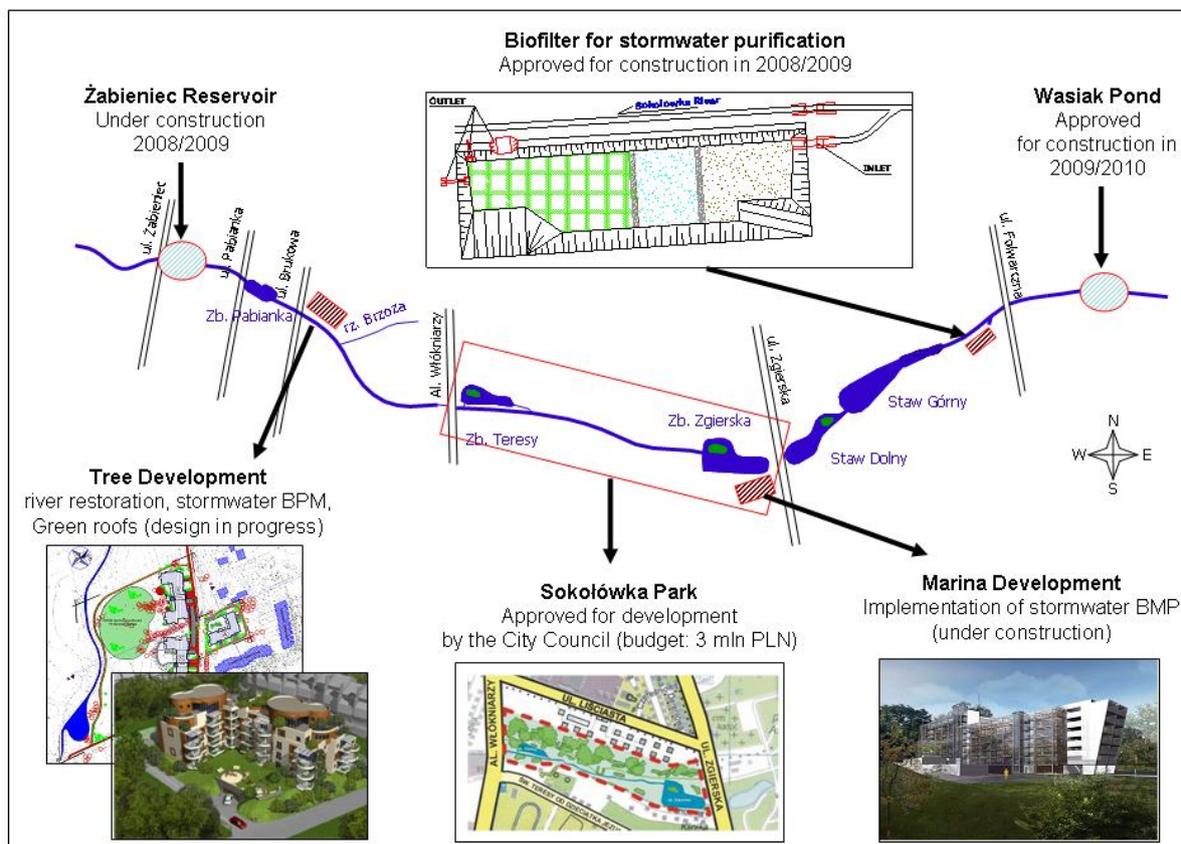


Figure 1. Interventions linked to the SWITCH Project in the Sokolowka River valley (constructed, under development and in design)

Recently, another developer in the Sokolowka River valley contacted the learning alliance to implement best management practices in stormwater at one of their new developments (see box 4). The new apartments will be located on the bank of the Sokolowka River, but the building and

the investment area will be disconnected from the combined sewage system. The investment is currently under design.

Box 4. Developers supporting the Sokołowka river revitalization project

Developers sometimes have a bad reputation for only being interested in making money. The Tree Development Group - currently involved in three major residential projects in Łódź - are trying to follow an ethical approach to providing homes in Łódź that are 'close to nature'. One of the projects '*Ogrody Liściasta*' is an apartment development to be constructed on land adjacent to the Sokołowka River. Having read about the Universities work on river restoration in the newspaper *Gazeta Wyborcza* the Tree Development Group contacted the SWITCH project. They were rather worried about talking to 'ecologists' that might only be interested in the natural environment and blocking any development. But it was a pleasant surprise to find that their ideas for an environmentally sympathetic housing development did fit neatly with the wider project for revitalization of the Sokołowka River being promoted by the University and the City Office. Professor Zalewski from the University, through the Sokołowka project being supported by SWITCH, has subsequently provided considerable support in the conceptual design of the development bringing in new thinking on how to realize ecological objectives. Over several months they have been meeting together a couple of times a month.

Ogrody Liściasta is a fairly low density development of 100 apartments on a plot of 30,000m². One of the suggestions in the design consultations between the developers and the Professor was to restrict the blocks to five storeys to keep them below the tree-tops and minimise intrusion on the landscape. The buildings will be about 120m from the river, and through the discussions, an agreed package of other measures has emerged which will contribute to the overall river restoration project. A small reservoir will be constructed on the river using ecohydrology design principles, improving views from the apartments at the same time as improving the river's capacity to purify itself and retain sediment from the reaching the Pabianka reservoir just downstream. Along the 300m stretch of river fronting the development, the developers have also included a path near the river that will be open to walkers and cyclists. This could become part of the planned continuous path near the river which remains on the drawing board for the city. The original ideas for 'gardens' have also been modified to make the landscaping and planting more natural and in line with the riparian setting. Trees on the site will be retained, and green roofs will be constructed on the apartments. It has not been straightforward for the developers to develop this riverside project. Originally the city office said it would not be possible to get permission. But the ecological approach to design, supported by the University, has won people around.

Based on an interview with Wojciech Krasowski and Pawel Bernat, Tree Development Group property developers, Łódź

Using sewage sludge to grow energy crops

The Łódź wastewater treatment plant is located at the 'end-of-pipe'. It receives and treats all of the city's sewage before discharging water into the Ner River and disposing of the remaining sludge to landfill. The company operating the plant is an independent government-owned enterprise, and is separate from the other organisations responsible for providing services to consumers, management of the city's sewerage and stormwater network and investing in infrastructure (including the wastewater plant).

The Łódź wastewater treatment plant has been closely involved in research being undertaken by the University of Łódź on the use of sewage sludge for fertilization of biomass energy crops (see Box 5). Pilot plantations of willow have been cultivated by the company on municipal land next to their wastewater treatment plant. A major problem is the high level of heavy metal pollutants in the sludge. This issue is not easy to solve because it requires action by the city authorities to control the companies that are likely to be involved. Andrzej Czaplak (see Box 6), working at the wastewater plant, says there are only 10 or 15 companies that could be responsible for such

heavy metals in the waste stream. In fact, this lack of control is a major headache and risk for the company: only last year they were supposed to pay a heavy fine for failing to meet targets on pollutants in treated wastewater. But it is impossible for the plant to meet the targets without actions being taken upstream by other stakeholders. Here there is an important need to improve communication, trust and collaboration between the different agencies involved in sanitation.

Box 5. Closing the nutrient cycle: using sewage sludge to grow energy crops

For almost four years Agata Drobniowska has been researching the use of sewage sludge and composted sludge as fertilisers for willow trees, which can then provide biomass energy. She explained that her research for SWITCH is different from that of many fellow PhD students at the university. Laboratory testing of scientific properties and variables is only one aspect of her research. Engaging with people at the waste water company, the municipal office, private companies and fellow citizens of Łódź have also been crucial aspects of her daily work. They have helped her gather knowledge about application of the concept beyond the initial pilot plots.

From the beginning, the wastewater treatment plant was open to cooperation. She has been working closely since with the engineers and laboratory workers at the plant. Together they have collected data from the treatment plant on the levels of nutrients and toxins in the waste water, the efficiency of willows in taking up heavy metals, the ideal ratio of composted and un-composted sludge, the quality and yield of biomass and environmental impacts such as changes in biodiversity. Out of the four types of willow tested on a smaller scale, two types were planted on a 50 ha plot in 2005.

Based on literature research, experience elsewhere and the findings from the pilot plantation, Agata developed a mathematical model for managers at the waste water treatment plant. The municipality and Polish experts in planting and harvesting willows reviewed the model and suggested to include more support for financial analysis, harvesting, transport, demand for bio-energy, technologies for converting the willows into energy and legislative issues.

This research has not been easy. Agatha has spent a lot of time in meetings and discussions with the municipality and treatment plant. This also required her to follow up on questions and suggestions by learning alliance members. She has held various presentations for the learning alliance and other groups such as visiting schoolchildren and students.

There are still several constraints to scaling up implementation. Given the high concentrations of heavy metals in the sludge, about 300ha of plantations would be needed to utilize all the sludge produced. For farmers who own land around the plant willow plantations could be an attractive source of income. EU subsidies exist, but information on how to access these funds is lacking. Several legal and management hurdles also need to be tackled. To overcome these constraints Agata suggests better monitoring of pollution and enforcement, developing the management and ownership options further in a working group within the learning alliance and in close cooperation with the lawyers of the plant, and awareness raising and exploring options for EU financial support for farmers.

Agata feels that doing research in this way has meant she has to understand more of the complexity of reality. This has made her work difficult at times, but also more interesting and she hopes it will help to ensure this research is applied. Fortunately, she has not worked alone, the SWITCH team has helped facilitate the process and raise awareness for the research. Also, the wastewater company has been very supportive. Besides assigning staff to work on the pilot, they also promote it in their public advocacy. Just recently, she was surprised to see that they promoted the research in two information films they produced independently of the SWITCH project. It is encouraging so see that this wider ownership of the research now exists in Łódź.

Agata Drobniowska is just completing her PhD studies on use of sewage sludge to fertilise willow plantations for energy production.

Box 6. Andrzej Czapla is an engineer in middle management at the Łódź wastewater treatment plant

Many organisations are involved in water and wastewater management in Łódź and it is institutionally complex, says Andrzej Czapla. This is where he sees the SWITCH supported learning alliance having an important role: he says it was the first attempt to improve communication between the different organisations and to provide a cross-institutional platform to share information and discuss water and sanitation issues. Andrzej mentioned that through the learning alliance he first met some people that he only knew by name before. He went on to say that SWITCH is giving an overall picture of how everything is working together in the city and is addressing the issues in an integrated way. This is needed by the individual organisations that themselves only work on a small part of the system. He says that the learning alliance has enabled the participants to ‘send signals’ about key issues to the city authorities, and to ‘open the eyes’ of people to areas that are beyond the scope of their own jobs.

Andrzej says that he or his colleague have attended all of the 5 or 6 learning alliance meetings held to date. These meetings take a large amount of his time and for him that is scarce: sometimes the whole day. But it is worth it, he says. He was happy to be involved in the development of the SWITCH programme and is looking forward to the results it will generate. In fact, he would now like to see a higher intensity of meetings and events including smaller workgroups to take up specific issues. It has also been useful to learn from other cities and countries on how similar problems have been tackled like creating retention to deal with flood flows, and he cites the example of Birmingham from SWITCH as well as similar learning opportunities he has had from Krakow through the Polish Association of Water and Sewerage Operators, visits to Germany and contacts with the International Water Association. He has particularly encouraged the SWITCH learning alliance to address stormwater management issues since 50% of the city has combined stormwater sewers, and the plant struggles to cope with peak flows of highly diluted sewage. He mentioned this as an example of an issue to be picked up, recognizing that SWITCH and the learning alliance are only at the beginning of their journey.

Learning and sharing with stakeholders

With time, their repeated attendance, more and more active participation, voices heard and recorded, and trust that the Learning Alliance is a group where they can constructively share their viewpoints, confidence that ideas shared would contribute to a more efficient integrated management of water-related issues in the city began to show (see Boxes 6,7 and 8). The challenges that still have to be overcome, however, involve the willingness by the top decision-makers to actively engage in the process and to take ownership of integrated problems faced by all the stakeholders in the city. The day-to-day culture in water management still comes across as based on isolated actions by stakeholders to be focused on solving problems and meeting goals within separate organizations rather than meeting the city goals in an integrated way. Integration of stakeholders into the learning alliance group has been an initial step to working on solutions to the problems together in the forum. A visioning workshop – an entirely new approach and methodology accepted with interest and enthusiasm - was the first real foundation towards identification of common goals and then working out strategies that would lead to a plan for integrated water management on the ground.

Visioning to set joint objectives

In January 2008, a visioning workshop was organized and considered an important test of the maturity of the learning alliance. The workshop brought together over 50 participants representing about 25 organizations and institutions, including both decision-makers and their ‘right hands’. Before the workshop, the higher decision-makers and executive levels in these organizations had not yet actively participated in the learning alliance. Realizing the seriousness of the workshop goals they seemed not to want to miss a chance to express their views and emphasize their commitment and involvement in the water management issues. A key success

was constructive discussions and group activities, and there was evidence of a common willingness to contribute and seek specific changes, rather than to criticize and dwell in the past. This is a positive attitude shift that the SWITCH learning alliance has sought to encourage. The workshop methodology was considered interesting by the participants, who evaluated it as being innovative and helpful. The participants expressed pride Łódź that has a vision for better urban water management and that they contributed to establishing it. That vision is that by 2038 'Łódź Uses Its Water Wisely' and:

'The city's resources management is based on an efficient and integrated system ensuring access to information for all. Investors and authorities respect ecological properties of land and waters. Infrastructure serves the functions and requirements of an environmentally secure city, is reliable, meets the needs of all of the city's population and assures good status of aquatic ecosystems. Green areas - river valleys along open corridors – provide space for recreation and are the 'green lungs' of Łódź. The population's common and in-depth ecological awareness contributes to exceptional quality of life. Our city is a leading centre for innovation, education and implementation in Poland.'

Subsequently the methodology has been adopted for a visioning process focusing on a wider issue than water management: the revitalization of the city as whole especially its historic and neglected ex-industrial zones.

Box 7. Upgrading Water and Sewerage Networks: the Łódź Infrastructure Company

Environmental sanitation and stormwater management are the biggest challenges in Łódź, with the water supply situation being relatively good. Severely polluted sludge from the wastewater plant has to be disposed of safely, some parts of the city still depend on local collection centres for sewage or have combined sewers that pollute rivers during storms, and some places are affected badly by flooding during storms. The SWITCH project is helping the Łódź Infrastructure Company address some of these problems through research on the use of sludge to fertilise willow crops which then be used to produce energy, and the restoration of the Sokołowka River to improve water quality. A major need is to now also take up stormwater management issues, we were told.

The company has participated in all SWITCH learning alliance meetings since the beginning and they say that they find these very useful. The learning alliance, we were told, provides a platform to gather people representing different organisations, to share information and develop new initiatives. Through the demonstration projects on the Sokołowka River the company has tested new approaches to improving water quality and improving the urban environment, and want to replicate such river restoration activities across the 18 other rivers in the city. But there are challenges in doing this. They know how to do it, but lack financial resources and capacity. It is not easy to find new sources of finance either. Developers don't want to pay: in fact they try to lever investments from the city and it is hard enough to attract investors. EU funds play a critical role in upgrading infrastructure. They also see that it is very hard to find funds for research, which itself takes a long time and is expensive. Really good specialists are also in short supply. SWITCH has been important in helping the company bring interesting and practical innovations into use. Over the past few years they have realized that every project is interdisciplinary and SWITCH is also helping address this issue.

Based on an interview with Teresa Woźniak (President), Konrad Kulawiak and Przemysław Wnuk.

Box 8. Paweł Bernat and Wojciech Krasowski work for the developers Tree Development Group

Developers sometimes have a bad reputation for only being interested in making money. The Tree Development Group - currently involved in three major residential projects in Łódź - are trying to follow

an ethical approach to providing homes in Łódź that are ‘close to nature’. One of the projects ‘*Ogrody Liściasta*’ is an apartment development to be constructed on land adjacent to the Sokołowka River. Having read about the Universities work on river restoration in the newspaper *Gazeta Wyborcza* the Tree Development Group contacted the SWITCH project. They were rather worried about talking to ‘ecologists’ who might only be interested in the natural environment and blocking any development. But it was a pleasant surprise to find that their ideas for an environmentally sympathetic housing development did fit neatly with the wider project for revitalization of the Sokołowka River being promoted by the University and the City Office. Professor Zalewski from the University, through the Sokołowka project being supported by SWITCH, has subsequently provided considerable support in the conceptual design of the development bringing in new thinking on how to realize ecological objectives. Over several months they have been meeting together a couple of times a month.

Ogrody Liściasta is a fairly low density development of 100 apartments on a plot of 30,000m². One of the suggestions in the design consultations between the developers and the Professor was to restrict the blocks to five storeys to keep them below the tree-tops and minimise intrusion on the landscape. The buildings will be about 120m from the river, and through the discussions, an agreed package of other measures has emerged which will contribute to the overall river restoration project. A small reservoir will be constructed on the river using ecohydrology design principles, improving views from the apartments at the same time as improving the river’s capacity to purify itself and retain sediment from reaching the Pabianka reservoir just downstream. Along the 300m stretch of river fronting the development, the developers have also included a path near the river that will be open to walkers and cyclists. This could become part of the planned continuous path near the river which remains on the drawing board for the city. The original ideas for ‘gardens’ have also been modified to make the landscaping and planting more natural and in line with the riparian setting. Trees on the site will be retained, and green roofs will be constructed on the apartments. It has not been straightforward for the developers to develop this riverside project. Originally the city office said it would not be possible to get permission. But the ecological approach to design, supported by the University, has won people around.

The SWITCH learning alliance has been an important platform to bring together a wide group of forces and stakeholders involved in water management, and Tree Development Group have participated in two of the events of date. Wojtek said they like the integrity of the approach, its clear focus on urban rivers and its orientation towards finding better solutions. Although it is necessary at times to have the strong support at the highest level, he says it seems effective as it involves middle-level management. As an example, he says that staff working in the local government will not take risks easily and all too often taking no risks means nothing new, different or innovative. But the learning alliance events, he says, can open up people’s minds. He also said it is only possible to move forwards by architects, developers, environmentalists, planners etc working together more closely, and he would like to see similar kinds of platforms on wider issues. In fact, the concerns of the Tree Development Group in finding sustainable ways to develop homes that are nice to live in and contribute to the Łódź economy are broader than water.

In another development amongst the trees at Nowosolna on the outskirts of the city, the Tree Development Group has incorporated a stormwater retention pond into the development. This was their own idea, and was not a formal requirement. However, it has been a challenge to design something that will look good while often being empty: a necessity if the structure is to provide a flood reduction function. The Tree Development Group have not yet really thought about demand management issues to further reduce the impact of people living within their developments – this is not the most pressing issue in Łódź - and are not sure about far they can intrude on the behavior of households especially where this would involve costly measures like the re-use of wastewater to irrigate gardens. Wojtek said there is a need for much more awareness on this topic before people would be willing for pay for solutions and modify their behavior in consuming water.

Box 9. Potential and constraints in scaling-up good ideas: River Jasien

The River Jasien flows through an old ex-industrial part of the city (Księży Młyn) which is currently a major focus of redevelopment in Łódź given its historic factory buildings (currently being converted to lofts, offices and other uses) and its location close to the city centre. The river is partly channelized and partly buried underground. It is badly polluted and also receives untreated sewage from combined sewers. Building upon the river restoration efforts in the Sokołowka, the SWITCH team in the city was contacted to see whether this urban river could also be improved. The contact came in a round about way. Last summer, the learning alliance facilitator Monika Dziegielewska-Geitz went to Italy as part of a group interested in learning about conservation and restoration of art and heritage. Through people involved, Monika got in touch with a developer (MegaDex) involved in converting an old factory to loft apartments and who had heard about the efforts to restore the Sokołowka. The land involved happened to be next to a stretch of the River Jasien and the people involved were inspired to try and use restoration of the river as a catalyst to improving the local area. They developed an ambitious vision that was presented at the Łódź Revitalization Conference in April 2008 to try and interest decision makers.

A key need that was identified was water quality monitoring, vital to enable detailed planning of options for a watercourse that is badly polluted and could present health risks to the public and their animals. This is where the initiative hit a wall and has stalled to date. The water quality monitoring that is needed is costly (50-100,000 Zloty for monthly monitoring over a year) and although ERCE could do such monitoring it hasn't been possible to find anyone to pay for it. The river doesn't belong to MegaDex and they see wider benefits for the city, so they don't want to pay the whole cost. The department of infrastructure in the city office didn't see it as their problem. The river technically belongs to the Marshall's office (a regional institution) and a proposal might be submitted to them. The Łódź Infrastructure Company might also be interested as would the Voivodship's Inspectorate for Environmental Protection, another regional body.

The lesson learnt in this case is that scaling up of innovations in urban water management is unlikely to be automatic and means more work. ERCE have limited capacity to follow up and hiring more people requires money that is not available. The learning alliance provides a forum to keep this initiative on the table and to try and take it forwards. To date no single organisation is able to lead the task, develop the partnership further and secure funds. This requires a lot of time, good coordination of all the stakeholders and skills that are in short supply. If the learning alliance had any unallocated funds, it is the kind of issue on which a small targeted investment in proposal writing and coordination might lead to the scaling up of the river restoration efforts. But the learning alliance does not have such funds at the moment and subcontracting in SWITCH is also not straightforward.

The importance of champions

The deputy mayor is a strong supporter of SWITCH, which sends out a strong signal to other stakeholders. He opens each learning alliance meeting and has seemed to have made many of the ideas around river restoration his own, linking the objectives of the city to those of SWITCH in various public speeches. To bring SWITCH onto the agenda of regional stakeholders is the next step but is complicated by tensions between the Voivodship and the municipality. Often the responsibilities are not clear and there is a big gap in information between these two levels. The SWITCH team is taking steps to bridge this information gap through the learning alliance. At the initial step of stakeholder identification, the Voivodship was recognized as a stakeholder that should be involved.

At the visioning workshop, both the Marshall and the director of environment protection were invited, but were unable to attend. They sent a representative who was actually already part of the learning alliance, but in previous meetings had not engaged much with others. During this

workshop he volunteered to present the Vovoidship Company for Amelioration and Maintenance of Water Infrastructure (WZMIUW). Hearing about the responsibilities and strategies at Vovoidship level was very informative for the city level stakeholders and well appreciated.

The existing relations between Director of ERCE and the efforts of the facilitator have also been instrumental in gaining the support from key stakeholders in the city. In the 1990s Professor Zalewski was already advising the municipality to use green spaces to revitalize the city and also reduce water pollution. While there was slowly some support for this idea and plans got drafted, there was also resistance. The Mayor was supportive of the idea, but it was not politically rewarding until the time of SWITCH and now these ideas and plans start being put to practice. SWITCH has provided leverage through funding for pilot projects on river restoration, natural treatment of wastewater and the reuse of sludge. The funding helped overcome some of the objections to these plans. The professor says that the “learning alliance approach helps change people’s mindsets, but this doesn’t happen in just two or three meetings. It is a process that takes time.” SWITCH has brought greater awareness of IURM says the Professor and he feels that both the project and the learning alliance concept have made a strong contribution to developments in Łódź. For example, the emphasis on innovation is something he views very positively. The main challenge he says is informing people and changing their mindsets especially to eliminate myths. A lot of resistance towards ideas like wetlands restoration is based on inaccurate knowledge and bad experiences from what engineers did in the past.

Box 10. Integrating water and environmental issues with overall city re-development initiatives

The revitalization of the city of Łódź has provided an excellent entry point for linking IUWM and SWITCH to wider processes of city development. Through involvement of the learning alliance facilitator, water and environment were brought into the agenda ‘integrated city revitalisation’ through a stronger focus on revitalizing Łódź its 18 rivers and improving the quality of the water system in the city. In 2006, the European Regional Centre for Ecohydrology presented itself and the SWITCH project at the Łódź 2023 conference, part of a series on city regeneration (www.vision-Łódź-2023.info). With over 100 participants, this conference brought together a diverse audience including city decision makers, developers, planners, architects, banks, private developers, heads of universities, journalists and ‘creatives’. This shows how SWITCH can be effective by linking to existing events and initiatives or networks in the city.

In April 2008, the links between water and city redevelopment were further strengthened as a full session at the latest conference was dedicated to urban water and SWITCH. During this session the deputy mayor expressed the importance of recognizing water and green resources as key in the city’s redevelopment. This showed how building relations with him over the course of the project is paying off. Several newspaper articles made mention of the conference and referred specifically to the importance of water for Łódź development. Media interest has continued since then and one of the results has been that the Tree Development Group approached ERCE for information on how they can improve the river fronting one of their development areas.

Communication within the learning alliance

Initially the involvement of stakeholders was through formal letters to the heads of department, or managers. At first, most of the learning members sent representatives from lower levels of the hierarchy (junior managers, inspectors etc) but over time the recognition of the project has increased, aided by public speeches of the deputy mayor and media coverage. At the visioning workshop, senior representatives were there as well.

The team now uses various means to communicate with the learning alliance members. Official correspondence is done through fax and telephone, while all reports and proceedings are sent by email and posted on the weblog which is also used for announcements. A database of addresses has been made and circulated to all members. At present, the weblog is not very user friendly. The learning alliance facilitator would like to improve the look, but she lacks time or funds for this. The weblog is mainly being used by the project team to upload documents, but the hope is that the learning alliance members would also do so in the future.

There are noticeable changes in how learning alliance members communicate. At the initial meetings, many people did not know each other and they behaved very formally. People did not participate easily in discussions. Most people were passively absorbing information, but reluctant to speak. During coffee breaks, people did not mingle or speak to people they had not met yet. Over time, people started to recognize each other and through facilitation methods like *world café* and small group discussions, poster group work, people were stimulated to actively contribute and an atmosphere of openness has been built. During the visioning workshop especially, it was hard to get the people to stop talking, so this has been a major change.

There have also been attitude changes among the learning alliance members: at the beginning people were afraid to speak on behalf of their organizations, because there is often a lot of criticism between the different organizations involved in urban water management. These reservations seem to have disappeared now and people are eager to focus on the positive contribution that they could have to SWITCH. Although they are not always sure what this may be, they are now much more comfortable with engaging in the process.

Learning alliance members have expressed this eagerness as well, saying ‘we get so many invitations to take part in events, but we choose SWITCH over others because we know you make an effort to make it interesting and useful. The learning alliance facilitation methodologies are very different from how meetings or workshops are usually organized and there has been positive feedback over time (while some others still feel it is important to keep to more traditional forms of presentation).

The traditional hierarchical structure also plays a role in the involvement of junior researchers (e.g. Masters students). The facilitator has actively involved students in the facilitation of the learning alliance meetings. However, she has noticed that students often feel like they are working for SWITCH rather than full members of the learning alliance. She has initiated several discussions with these students to discuss their involvement. She is trying to use the learning alliance methodology to promote idea of sharing as equals. Students and researchers are not simply ‘helping hands’, but the learning alliance should also try to address their interests and concerns. Consciously eliciting their responses has brought new insights and encouraged the team of researchers to share their experiences about the process rather than just the results of their research.

Raising awareness in the wider community

The media have been a real catalyst for the project and the learning alliance in Łódź including various newspaper articles and also interviews for TV and radio. This has raised the credibility of SWITCH and also raised people’s awareness. In the first year of the project, awareness raising activities included presentations and distribution of informative brochures within a relatively closed circle of the possible learning alliance members and city officials. After the first year, local media were actively brought into the process and became the members of the learning

alliance. Several dissemination activities included: radio broadcasts (about five interviews in studio and several others on the occasion of events), TV broadcasts (three events interviews in studio and others at events), two press conferences, and newspaper articles in both on regional and national level (eight in total). In 2007, there were two films produced by independent producers (on the waste water treatment plant, Ner River initiative) using information generated by the SWITCH project. Additionally, two films were produced within the Process Documentation meeting, and one film is now being produced by the SWITCH Project including information about three demonstration cities in SWITCH (Łódź, Beijing, Accra).

A communication strategy for the project should ideally be linked to the learning alliance approach, including to a larger extend city office and such information media as: City of Łódź websites, billboards, printed brochures/newsletter in daily newspaper. An education path (along the river) is also planned to be developed which would further help raise awareness.

LESSONS LEARNED AND RECOMMENDATIONS

A number of things that are working well in relation to the Łódź SWITCH learning alliance and offer useful lessons for other SWITCH cities and similar projects trying to develop innovative research provider and user partnerships. The main lessons learned that we would like to highlight from mainly positive experiences to date are that:

- *Champions need to be identified and engaged from an early date.* In Łódź, SWITCH and the learning alliance process have benefited from champions with high level influence. Professor Zalewski has an influential network and the University is well respected. These factors appear to have been critical in bringing many of the major institutions on board with support for the initiative at director level.
- *Ensure the right skills are in place to facilitate a learning alliance process.* It was recognized early on that researchers within the partner organisations in Łódź did not have the right skills and capacity to facilitate the learning alliance and these skills were sought outside. A senior facilitator with considerable experience and specific skills in networking and facilitation was recruited to work full-time on the learning alliance facilitation task.
- *Balance scientific, facilitation, and research user perspectives.* A good balance and working relationship has developed between the senior scientist who is the city coordinator and the learning alliance facilitator. Working at an equal level, these colleagues do not always agree and often have a different view, but working this through leads to a genuinely different approach. It would be even stronger if somebody from the municipality, as a SWITCH partner, or another key research user, joined this *de-facto* coordination and steering group.
- *A host organisation that is able to take the role of leadership in facilitating an inclusive process.* ERCE as a partner of the University is well placed to ‘host’ the learning alliance, having an interest in finding more effective ways to do science, and with strong backup and organisation for publicity, communication, events organisation etc. Although constrained by a fairly restrictive mandate (ecohydrology science) they have been willing to step outside this area when it is important and recruit staff to play initiating or integrating roles that no other organisation can easily move to take on. There isn’t a single organisation with a responsibility for integrated urban water management in Łódź like most cities, but an organisation or group has to assume and take the facilitating. Since costs are low and skills are high, the University has been able to undertake the level of tasks needed to develop and sustain a learning alliance process.
- *Build upon existing research activities and partnerships.* SWITCH activities have built upon, augmented and expanded the ambition (especially relating to impact) of existing research

activities and collaborations that were established before SWITCH. The University had been working with a few of the major city institutions, and research on the restoration of the Sokołowka River and sludge for biomass energy. SWITCH has significantly broadened and deepened these connections and it is within SWITCH that for the first time all organisations come together to address IUWM issues.

- *Provide training and coaching to support processes.* The Łódź learning alliance facilitator has participated actively in all the learning alliance training events. The city coordinator didn't come to the events that were held outside the city (in Cairo and Accra), due to time constraints and this has been a drawback. But because two training events (learning alliance facilitation and process documentation) were held in Łódź and the close co-operation with the learning alliance facilitator she was then able to participate. There is a need to continue to provide regular support and inspiration to learning alliance facilitators and city co-ordinators and bring scientists into this role. Training events provided by SWITCH have been appreciated, particularly because of the opportunities to learn from other cities inside SWITCH and other projects outside the consortium.
- *Consider communication issues carefully and invest in these.* Language issues could have been problematic in Łódź were mainly Polish learning alliance members and researchers might fail to connect with an Anglo-centric project. However, these have been well addressed and specialist translators have been employed when required. Publication on the city learning alliance website has been in English and Polish to reach different audiences within the project outside Poland and within the city. The city coordinator and learning alliance facilitator are fluent in English and Polish and have also been able to translate when needed. The team have also effectively engaged the media and used appropriate forms of communication for different purposes. Radio and newspaper interviews, through time consuming development of contacts and interest, have led articles that have given wide exposure to the project. The website has also led to new contacts such as a group of German schools who visited as part of an exchange programme with Polish schools to learn about the environmental science within SWITCH. An art competition for schools and a photographic exhibition led by a students group have also raised the issue of water in Łódź with new generations and audiences.

There have also been some less successful experiences over the first couple of years of the SWITCH project in Łódź and a number of constraints and risks can be identified to sustaining an effective learning alliance process that puts research into use. The following further recommendations draw on our reflections about the process to date, and aim to make the project more effective in Łódź and maximize its impacts and legacy after it ends in five years time.

- *Some unallocated resources that can be invested during the course of project implementation need to be available to the learning alliance.* Funds, often relatively small seed funds, need to be available for the suggested research activities that emerge from learning alliance suggestions to further advance the project and its impacts. These, obviously given the demand-led aspirations of the project, could not always be included into the original research plan (e.g. stormwater issues, social inclusion and research on the use of biodiversity indices for assessment of the impacts of river restoration) but are important to demonstrate the commitment of SWITCH in responding to the needs of stakeholders in the learning alliance. The SWITCH project, running over 5 years, would ideally have: put a third of resources into science identified in normal ways (at beginning, mainly by researchers, focusing on basic science and technological demonstrations); a third into learning alliance processes concentrating on putting research into use; and a third into unallocated funds that can be used

to fund other science needs that emerge, feasibility studies, additional training etc. Then the project would really be able to respond to expressed demands.

- *Ensure that appropriate skills and time are made available to document the learning alliance process.* The learning alliance facilitator has been too overloaded with facilitation and organizational tasks to, at the same time, document the research process and its impact. Her skills are in high demand, and she is often also dragged into other activities. Despite a very successful training in process documentation being held in the city, Łódź like other SWITCH cities has not been able to produce (until now) reflective process documentation that could inform project implementation as well as provide materials for external communication activities. An additional person, perhaps working part-time, should be recruited if funds were available. Ideally such a person would have journalistic skills and science experience and have the ability to stand outside the project team and look inside and comment on its effectiveness and impact.
- *Increase the intensity and diversity of activities.* It is now about the right time to step up the intensity of SWITCH learning alliance activities. It has taken over two years to develop the trust and joint understanding that enables the learning alliance to now function as a team. However, the existing level of activities will need to be increased in intensity to reach the high ambition levels of SWITCH i.e. a paradigm shift towards integrated urban water management. The last learning alliance meeting was held in January 2008, although there was a revitalization conference in April 2008 in which SWITCH participated. Activities between meetings such as good email and web-based communication keep the group engaged but progress is fairly slow. The learning alliance should now consider introducing working groups to work intensely on specific topics like wastewater sludge reuse, stormwater management etc. as well as regular larger events engaging a broad group. There is also a need to create more opportunities to expose city stakeholders to new ideas in other places through exchanges supported by SWITCH. There are not yet effective ways to do this within the project, either through face-to-face visits or electronically, although the participation in the scientific meetings and SWITCH visitors to the city from Birmingham, Hamburg and elsewhere and brought ideas to the city have been welcomed.
- *Project management needed that is responsive to city needs.* Increasing the impact of SWITCH learning alliances activities in Łódź will need more active support from the central project management structure. Initially there was no funding for the learning alliance process and this was only allocated after one year. The potential to make requests for funding to be provided for additional tasks and new science areas that respond to local needs is unclear. SWITCH has enabled the Łódź team to be quite flexible although the reporting is all about deliverables rather than outcomes. SWITCH needs effective planning tools focused on impacts, although the learning alliances have developed indicators that could provide a basis.
- *To work within the local context and ways of doing business, while challenging them and introducing improvements.* There is a very hierarchical approach within organisations in Łódź. Sometimes it is necessary to work within this, sometimes to challenge it. In Łódź, a balance between traditional formal meetings with the highest level participants and more participatory methods to engage middle-level managers has worked well.
- *Ensure that an interdisciplinary team is kept motivated and involved.* Recognising the level of work needed to make such a process successful, there is a need to ensure resources (skilled people who are remunerated properly), and continuity. There is a major risk to continuity and impact if one or two individuals were lost, e.g. due to financial resources not being available for paying enough for skilled people. The process depends on their energy, and often out of hours commitment to go beyond the call of duty.

- *Find more and better incentives to increase researcher involvement.* Need to increase interest and trust, researchers want to see that the results of their work are appreciated and used by authorities in the implementation plans/decision making. They would like see their work being considered and used. Good and relevant research presented in the right way at the right time will be used. But the current incentives for researchers are mainly about writing research reports and papers that often don't meet this need. Why should they do extra work and engage with difficult stakeholders that may be critical and demanding?
- *Strategic planning.* The visioning process, with a group that was ready to be consolidated, gave a real sense of achievement and helped built commitment. This should be continued to look at scenarios and strategies, and potentially the process could a road map for the city and be a lasting legacy of the project.
- *Address the economic and institutional impacts of interventions and consider potential unintended consequences.* To date the work in Łódź has not addressed economic issues in detail (such as the costs of various alternative technologies and their use), institutional research questions, or issues of social inclusion. All interventions including river restoration have the potential to create unintended consequences and exclude certain members of society unless issues of inclusion are addressed specifically.
- *Sustainability of the learning alliance.* It is likely that something will endure in Łódź: some of legacy of the network that the learning alliance has developed. However it will be a major challenge for the learning alliance to secure even the relatively low level of funding it needs to maintain networking activities. Research itself struggles to make its case for public funding despite the public goods it creates for the wider benefit of society. A learning alliance on integrated urban water management works in an even more public and altruistic space, but also suffers from the fact that aims to be broad and doesn't fit within the mandate or budget lines of a single organisations. Learning is unfortunately all too often seen as a luxury and not always a necessary item for investment.
- *Tackle an overall lack of capacity and shortage of skills to follow these kinds of approaches.* The city could benefit from further training, especially developing on skills for cooperation, project development, implementing, and fund raising. Technical improvement is always welcome too, especially to broaden skills out of own narrow disciplines are but this is not such a critical need. Opportunities are being missed currently because of gaps in capacity and it is hindering scaling up of impacts.

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