



018530 - SWITCH

Sustainable Water Management in the City of the Future

Integrated Project
Global Change and Ecosystems

D 6.2.2 Scoping reports for demonstration cities

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Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	PP
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Accra Scoping Report
Draft (September, 2006)

Prepared by IWMI and KNUST
(With contribution from SWITCH LA support team)

Objectives

SWITCH aims to achieve integrated – more efficient, more equitable, more sustainable - urban water management. Given the complex environments of our cities, SWITCH recognises that this can only be achieved through joint learning and changes in policy and practice made by multiple stakeholders. Learning alliances are the approach we have adopted to facilitate such changes.

The objective of this scoping exercise is to identify: key organisations and initiatives related to urban water management in each demonstration city, the main problems faced by the city, and potential champions for SWITCH activities on integrated urban water management.

It is intended that the scoping will be used to inform partnership development and detailed planning of the SWITCH project during the inception phase. It is only an initial step in learning alliance development and the scoping is not a full stakeholder analysis. The initial city level scoping is a rapid exercise to be completed by 31 March providing key but provisional knowledge on each city prior to the start-up workshop. The results will also be used to plan visits to all the SWITCH demonstration cities in May/ June 2006.

A full stakeholder analysis and a full city research needs assessment will be undertaken later in the inception phase after learning alliance teams are in place in each demonstration city.

SWITCH will need to build and foster relationships with the following stakeholder types:

- Key organisations responsible for water management in each demonstration city. These include organisations who make decisions or effect changes in policy and practice (e.g. policy analysts and advisors, policy makers, municipal/local government personnel (political & bureaucratic), service providers (public, private & voluntary, regulatory authorities etc);
- People with influence with decision-makers directly (e.g. members of parliament, private sector companies);
- Civil society organisations and individuals who can bring pressure to bear on decision-makers (e.g. NGOs, unions, professional associations etc);
- Water user groups (e.g. consumer groups, irrigation groups etc);
- Local 'leading lights' (activists or champions) working to address poverty, gender, environmental issues etc;
- Those who can support, reinforce and strengthen SWITCH's activities and recommendations (e.g. training and research organisations, financial organisations etc);
- Those in the media who provide a means by which the learning alliance can reach the public; and
- The donor community, who can further finance and support SWITCH's activities.



Completion of this task will probably involve 2-3 days input, including short informal meetings with as many of these types of stakeholders as possible.

Part 1. Summary information

Please include a summary of key organisations, their mandate, roles and activities, and all problems and/or opportunities articulated that may be relevant to SWITCH. The work packages (as listed in the description of work) should be used as a check list to identify issues covered by SWITCH. Remember, the aim at this stage is to scope key organisations, identifying as many important issues as possible but not as yet to prioritise them. This will be done later. Together with this summary information, partners are encouraged to keep more detailed records of meetings (i.e. travel reports, meeting minutes) and to collect any relevant documents from stakeholders. These will be useful later,

1 ORGANISATION, 2 (PERSON MET, 3 DATE OF MEETING)	Mandates, roles and activities	Problems and opportunities articulated by organisation
AMA Sewage Treatment Plant	This plant is responsible for treating domestic wastewater.	The plant currently receives substantial quantity of industrial waste. The volume of the industrial wastewater is not the problem but the wide variation of influent concentration. Quality of effluent from the plant is within WHO limit. Methane gas could be harnessed from the system for energy production.
Environmental Protection Agency	One of the statutory functions of EPA is to co-ordinate activities of such bodies, as it considers appropriate for the purposes of collection, treatment, storage, transportation and disposal of waste. It also provides technical assistance to the Accra Metropolitan Assembly to enable them fulfil their responsibility of managing the environment. It plays an advisory role in the management of domestic wastewater within the metropolis of Accra. Its main focus is on the management of industrial wastewater among others. It sets standards based on international limits for domestic use.	Sometimes involved in legal issues due to non-compliance. Low staff strength and challenges of inadequate logistics.
Environmental Management Sub-committee of AMA	Monitoring all public health and sanitation activities in the city including contracting out of services	Inadequate Capacity to carry out functions. Training and logistics required for effective services delivery.

	for liquid and solid waste collection and disposal and monitoring activities of the WMD MPHD and sub-metros.	Can be a very instrumental tool for monitoring pollution in the city of Accra.
Ghana Water Company Limited	Supply the people of Accra with pipe borne water. Supply a few urban farmers with water for irrigation	There is a demand –supply gap which needs to be closed by increased investment in the water sector. Non-payment of bills by water users continues to be a problem. Opportunities now exist for private sector involvement in the provision of potable water to the inhabitants of Accra: Financing of Turnkey Projects; private sector involvement in water supply and Sewerage Operations; partnership in procurement, installation, operation and maintenance of pre-payment metering system.
Environmental Health and Sanitation Unit (EHSU), MLGRD	Responsible for preparation of model bye-laws for the approval by the Ministry of Local Government and Rural Development, for adaptation by Metropolitan, Municipal and District Assemblies including Accra. Responsible for overall monitoring of Environmental, Public Health and Sanitation	There is an acute sanitation and hence public health problem in the city of Accra. The Government of Ghana developed an Environmental Sanitation Policy for the country in 1999. This policy is currently under review. The EHSU is responsible for monitoring the implementation of these services in the country. The Waste Management Department and the Metropolitan Public Health Department work under this unit in Local Government Structure which provides them with training and logistics periodically. Their personnel are employed by the AMA. Logistical and inadequate capacity affects the delivery of their services which is critical.
Public Health Department (AMA) Mr. J.C. Aryeetey (Ag. Director). Mark Anthony Adotey (Assistant Chief Env. Health Officer-Head Food/Water/Drugs Safety Unit) 28/06/06	Role: Dissemination of health Information, advocacy, education, nuisance control and enforcement of regulations and bye-laws. Food and Water Safety. Goal : 1. To abate nuisance in all types of premises and places 2. To develop a public health information system 3. To ensure that the Consuming public takes in safe food. <i>The AMA is responsible for secondary and tertiary drains but not primary drains like the Odaw River. The GWCL is responsible for water but City Authority has</i>	Challenges to the work of the Department: Lack of political will to ensure the health and safety of Accra and to demand that the polluter pays (What people pay is not enough 20% pay and 80 % do not pay for wastes disposal at all) Many people also do not pay property rates AMA wants to charge realistic rates. Needs a sound revenue base. Public do not co-operate with Env. Health Officers. Used to have public health specialist. GWCL has handed sewage to AMA. No clear role for Metro Health in Water. Do not have equipments anymore for water sampling. AMA is involved in several platforms where its input is sought, but never gets credit. The main UWM issues are Waste and silt influx from other Districts upstream. Failure by relevant institutions to execute their mandate and lack of routine maintenance of existing structures In urban areas there is lack of personal responsibility towards

	<p><i>a stake so high level of interaction. MPHDD is considered a civil service organisation</i></p> <p>There are three Units under MPHDD: Public Health Information Nuisance Control and Enforcement Food/Water Safety and Hygiene</p> <p>Responsible for:</p> <ol style="list-style-type: none"> Advocacy, education and enforcement of regulations and bye-laws to improve the health status of the people in the city. In advocacy, support is solicited from governmental organisations. An example is the Accra Metro Environmental Health Initiative with DFID funding in which communities were organised and empowered to deal with environmental sanitation and water pollution. Environmental inspection Linking AMA with other institutions Sewage (WMD) responsibility) Issuing license to sachet water producers Sampling of potable water for quality analysis has ceased since 	<p>health and sanitation whereas village people take better care. Basic problem of attitude of Ghanaians to health and Sanitation.</p> <p style="text-align: center;">3.1 Remarks related to SWITCH/ LA</p> <p>Opportunities in UWM: AMA has the capacity if well resourced; incorporated the issue of UWM in AMA budget; need to increase sources of funding to the Department</p> <p>Have organised groups in the past but everyone wants to follow its own road</p> <p>Sees responsibility for stakeholder engagement as regional entity Endorses the idea of a larger forum. Mayor is keen to solve problems . Would like to arrange briefing with Mayor.</p> <p style="text-align: center;">3.2 Other Remarks</p> <p>World Bank is assisting AMA to construct strong drains and sanitary facilities. GWCL has District Officers. A report on legislative review of AMA is available.</p>
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	<p>equipment is obsolete</p> <p>AMA sources of funding include internally generated revenue from: business operating permits, property rates, user rates/fees, government subvention, District Assembly Common Fund (DACF) Donor Funds from World Bank. AfDB</p> <p>Planned Activity: re-evaluation of properties in Accra. AfDB to resource AMA to deal with wastewater management</p> <p>No Platform for intersectoral interactions exist, except on an adhoc basis</p> <p>Projects:</p> <p>DFID, Accra Metro Health Service Initiative : Communities organise and get support and educational materials from Centre empowering local communities</p> <p>Project with Food Research Institute: Conditions of Food for sale (street foods) and effort to make them safe</p> <p>Did a review of all laws and produced a report.</p>	
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Ministry of Water Resources, Works and Housing	Has the primary responsibility for policy in the water sector.	Lack of funds hinder regular desilting which creates problems including easy flooding of the metropolis when there are heavy rains. A 15 m band width is specified along drains to reduce siltation. Sees the activities of some farmers along drains as a problem.
Ministry of Environment Science and Technology	In collaboration with the Town and Country Planning ensures that environmentally sound technologies are used in urban water management. This role is more of advisory.	Implementation at the District level is a problem.
Ministry of Tourism and Modernisation of the Capital City	Co-ordinating all activities in the Accra and other surrounding towns which send a transient population of more than 2 million into the city each working day.	This ministry has a lot of influence and can be lobbied to get a lot of work done in any sector that will improve the status of the city.
Graphic Communications Group Limited	General news broadcast	Access to the right information on environmental issues. Are invited to programmes, offering them the opportunity to report correctly.
New Times Corporation	General news broadcast	Access to the right information on environmental issues. Are invited to programmes, offering them the opportunity to report correctly.
Water Tanker Owners Association	Provision of Water to residents in the city when they do not have water.	Water in Accra is rationed. GWCL supplies water to almost all households in the city once or twice weekly. When residents have no water they buy from water tankers, which supply households by filling household tanks which most residents now have. Hikes water prices at will. Quality of water not controlled
Coalition of NGOs in the Water sector (CONIWAS)	Advocacy for water provision in peri-urban and low income areas. Regulating activities of all NGOs in the water sector	Can bring pressure to bear on the relevant agencies to provide resources and improved services in water supply delivery.
ISODEC	Advocacy for the provision of adequate water to all city dwellers in Accra at the lowest cost feasible.	Can bring pressure to bear on the relevant agencies to provide resources and improved services in water supply delivery.
CSIR Water Research Institute	Research in the water resources, data collection and analysis	Good opportunity for research
IWMI	Strong research in water management for agriculture. Regional resource centre for urban and peri-urban agriculture	Several ongoing projects and initiatives in agriculture water and cities as well as multi-stakeholder processes (MSP) in project. Opportunity to capitalise on several years of research and partnership in Ghana. Time cost of highly qualified staff time may be a constraint

KNUST -WRESP	Based in Kumasi but with very good capacity in research and training	Strong research potentials and provision of skilled personnet for the sector. Availability of students to participate in
GIDA	Ghana Irrigation Development Authority, a parastatal within the Ministry of Food and Agriculture (MoFA)	So far not focussed in the city. However, GIDA has just developed a new irrigation policy in which irrigation in around cities has been considered.
Public Utilities Regulatory Commission. Stephen N Adu, Commissioner / Executive Secretary; Robert Saka Addo 28/06/06	<p>An independent body established under the Public Utilities Regulatory Commission Act 1997 (Act 538), regulating and overseeing the provision of utility services (electricity & water) in the country; water focus is on 82 urban areas countrywide. Commission is made up of 9 members (appointed by the President), including chairman, executive secretary, representatives for labour (TUC), industry (AGI), and domestic consumers, plus 4 experts.</p> <p>Roles/functions</p> <ul style="list-style-type: none"> - To provide guidelines for rates to be charged for the provision of utility services - To examine and approve water & electricity rates - To protect the interests of consumers and providers of services - To monitor and enforce standards of performance for provision of services - To promote fair competition among public utilities - To receive & investigate complaints, settle disputes between consumers and public utilities <p>To advise any person or authority in respect of any utility</p>	<p>Stabilisation of tariff regime: phased transition from 20 cents/cu metre in 97/98, to 56 cents/m3 2006 – close to economic level, but WB refers to 70 c/m3;</p> <p>tariff enshrines benchmarks (e.g. efficiency, loss allowance, etc).</p> <p>Losses 50/50: technical (i.e. leakages) and commercial (i.e. tapping, billing, metering)</p> <p>Difficulty of providing ‘social lifeline’ tariff (first 10 m3 free), but in ‘compound’ houses (multiple occupancy) this still penalises poor HHs. Social tariff now extended to 20 m3. Tariff still however doesn’t work well for poor, and looking at non-tariff mechanisms for the poor (pilot project with GWCL & WaterAid). Key problem (for poor) is accessibility; pilot will build profiles of areas where water is stressed.</p> <p>Challenges around ‘tanker’ operations: biggest cost associated with haulage, so need to develop more ‘filling’ points.</p> <p>GWCL lacks funds for investing in infrastructural development (PURC is supposed to look after its interests).</p> <p>Interest in water quality management</p>

Meteorological Services Department	Gathering and dissemination of rainfall and other data on weather.	Data available on continuous basis for decision making.
Donor Agencies (World Bank, CIDA, DfID, DANIDA, EU, AFD, UNICEF, GTZ, KfW)	Provision of funds for the provision of water and monitoring of delivery.	Monitoring use of resources provided and provision of capacity building for effective delivery.
<p>Royal Netherlands Embassy</p> <p>Wilma van Esch (first secretary, Environment and Water advisor environment)</p> <p>29/06/06</p>	<p>Mandate and roles: The Netherlands is one of the 2 major donors in urban water supply. As most of the funding is through ORET/FMO the embassy does not have a special water advisor and water is considered part of the environment sector. The other sector is Health. These have however strong linkages with WASH. RNE is especially interested in developing more support in the urban sanitation, since this is an area where they see a great need but little activities of development partners.</p> <p>Activities and projects related to IUWM in Accra: The embassy is interested in urban sanitation, but will on the short term focus more on supporting the development of an institutional anchor for sanitation on policy level and revising the environmental policy with emphasis on the urban sector. For the moment, RNE has not yet plans to be involved in implementation on the ground.</p> <p>Other Dutch involvement in Accra:</p> <ul style="list-style-type: none"> - There is a city ling between old Accra and Amsterdam. - Work on the Odaw drain (by Interbeton,). 	<p>Lack of institutional framework for sanitation, especially urban sanitation.</p> <p>Limited attention for participatory planning of projects like the AfDB project</p> <p>Idea on LA for SWITCH: Be careful for the funding challenge. People are likely to start off very enthusiastically, but this will go down if funding is not coming.</p> <p>Other remarks: Accra might be a too challenging city to start with.</p> <p>AfDB project on urban sanitation has been approved. Development partners have been criticising the first draft for having no planning component and focussing too much on infrastructure.</p> <p>"I am very interested in the SWITCH project and I fully support it".</p>

	<ul style="list-style-type: none"> - Weija drinking water system - Management contract of Vitens with GWCL - SNV is starting to be more involved in the watsan sector, including the urban sector. <p>Other initiatives which might be interesting for SWITCH:</p> <ul style="list-style-type: none"> - Development Partner Group on Watsan, in which the GoG is also a partner. Hosted by MoWRWH. AFD is hosting at the moment (Maelis Borghese). Arthur Swatson is co-chair. - City Alliance / City Wide approach (see web) 	
<p>Royal Netherlands Embassy</p> <p>Wilma van Esch (first secretary, Environment and Water advisor environment)</p> <p>29/06/06</p>	<p>Mandate and roles: Water is not one of the direct focus points of the RNE in Ghana, but Health and Environment are. These have however strong linkages with WASH. RNE is especially interested in urban sanitation, since this is an area where they see a great need but little activities of development partners (except for World Bank).</p> <p>Activities and projects related to IUWM in Accra: The embassy is interested in urban sanitation, but will on the short term focus more on supporting the development of an institutional anchor for sanitation on policy level and revising the environmental policy with emphasis on the urban sector. For the moment, RNE will not be involved in</p>	<p>Lack of institutional framework for sanitation, especially urban sanitation.</p> <p>Lack of participatory planning of projects like the AfDB project</p> <p>Idea on LA for SWITCH: Be careful for the funding challenge. People are likely to start off very enthusiastically, but this will go down if funding is not coming.</p> <p>Other remarks: Accra is a very challenging city to start with.</p> <p>AfDB project on urban sanitation has been approved. Development partners have been criticising it for having no planning component and focussing too much on infrastructure.</p> <p>"I am very interested in the SWITCH project and I fully support it".</p>

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<p>Resource Centre Network (RCN) Ghana / Knowledge Management Task Force Ghana</p> <p>Mr. Eugene Larbi (Managing Director TREND Group)</p> <p>29/06/06</p>	<p>Mandate and roles:</p> <p>The KM taskforce intends to stimulate knowledge and information development, sharing and management in the WASH (water, sanitation and Hygiene) and IWRM sector. It consists of the MoWRWH, Coniwas (representing NGOs), World Vision (representing INGOs), CWSA, Pruspa (representing private sector), KNUST, WRI, TREND Group and WaterAid. The KM task</p>	<p>A problem that the task force is facing is the lack of focus (like one or a number of projects to focus on) and the lack of a stable funding stream.</p> <p>Idea on LA for SWITCH: The KM task force has a lot of experience on bringing stakeholders together. It would be important for the LA to have a thematic focus or a specific project to focus around. This is something the task force is lacking. It will be important to build on existing experiences. IRC has that experience and could provide tools and guidelines.</p>

	<p>Force steers the Resource Centre Network, consisting of 4 organisations involved in knowledge and information development and dissemination. These 4 organisations are: TREND Group, WaterAid, KNUST, WRI. The initial funding was provided by IRC (core funding for conducting initial studies, meetings etc). So far the RCN has had a mainly rural focus (partly because the level of interest of CWSA), but the RCN and the task force are really interested into expanding to the urban sector.</p> <p>Activities and projects related to IUWM in Accra:</p> <ul style="list-style-type: none"> - awareness creation on the importance of knowledge management. - Now: more or less bi-monthly meetings with KM Task Force - Business Plan (for next 5 years) for the RCN is under development - Planning to establish secretariat for the KM initiative, but this is still in concept phase. <p>Pipe line projects:</p> <ul style="list-style-type: none"> - TPP: tri-partite partnerships for water management in small towns. Big learning alliances component. <p>Sustain project, (Scaling Up Sanitation through Access and Information Networking), submitted by Unicef to EUWF2. Big LA component.</p>	
Centre for African Wetlands	Established in 2000. Covers 10 West African countries.	- Research focus so far mainly on Densu river, very little on Odaw

<p>Ms. Matilda Bissah Prof Yaa Ntiama-Baidu Prof W.A. Asomaning Mr. Edward Koomson</p> <p>27/06/06</p>	<p>Funded by Netherlands Government but funding cut after building of Centre completed. Operating on skeleton staff</p> <p>Mandate and roles: Complementary projects include developing research and management capacity for wetlands. Provide capacity to do work itself, including info dissemination and policy advocacy on wetland resources.</p> <p>Activities: Directly related projects 1. Capacity building in integrating water resource management inc. 4 city catchments (source & catchment mgt)and training courses (share lessons) to districts, environment agencies, water companies, watsan committees. First training is 9 October. Focus on Accra, Kumasi, Takoradi and Cape Coast. Focus on the source of water and management of catchment areas 2. Serve as node for global mangrove project, collating mangrove research. Compiling/collating best practice. Lit review & case studies e.g rain water harvesting for gardening, now then dissemination.</p> <p>At Centre doing conjunctive use with storage of rainwater to groundwater then pumping when needed from bores.</p>	<ul style="list-style-type: none"> - Lack of dissemination of results of research on the Densu river. <p>Remarks on SWITCH project / LAs</p> <ul style="list-style-type: none"> - Need to ensure someone owns the goals of SWITCH – a good home for the LA. - Recommend picking a couple demonstration projects to weave around (ex. Odaw River and the conflicting interest in water use as a case study for all SWITCH themes.). - Densu basin has absorbed much research activities already but a LA can disseminate the findings - Necessary to bring in the ministry of local government <p>Other remarks:</p> <ul style="list-style-type: none"> - Have access to students. Include in PhD announcements (env. Science) - Could combine SWITCH and Centre training activities. - Have good networks SWITCH could access including IUWM mailing list. - Host for programs - Mentioned that Ghana Academy of Arts & Sciences could offer platform for researchers – could be expanded? - Ministry of Environment absorbed into local government
<p>Hydrological services Department</p> <p>Harold Clottey</p> <p>27/06/06</p>	<p>Drainage and sewerage (Design and construction, Coastal protection, Operational hydrology)</p> <p>The source of funding is from the central government</p>	<p>1. Inadequate funding to provide drainage facilities to cope with demand. HSD activities are done on ad hoc basis 2 . Lack of enforcement of regulations.</p> <p>3. AMA is not doing its work in the following areas: -Public awareness on proper solid waste -enforcement of building regulation</p>

	through the Ministry of Water, Works and Housing	<p>4. Contrary to HSD mandate, other agencies such as Department of feeder roads (DFR) and Department of urban roads (DUR) are designing and supervising the construction of culvert. The result or effect is that the culverts are not well designed and constructed resulting in demolition and reconstruction after some time.</p> <p>Expectation from SWITCH Focus of the social and institutional aspects to address HSD problems. LA will be a platform for stakeholders to interact to identify solutions for the social aspects</p>
<p>Dr. Nelson Obirih-Opareh</p> <p>(Head of the Agriculture, Medicine and Environment (AME) Division of STEPRI.)</p> <p>26/06/06</p>	<p>The Science and Technology Policy Research Institute (STEPRI) is one of the Institutes of the Council for Scientific and Industrial Research (CSIR). Its mission is to provide the research support necessary for the formulation and implementation of public policies aimed at promoting the application and utilization of Science and Technology in the national development process. STEPRI was established to fill the gap in conducting research for Science and Technology policy in Ghana and to facilitate S&T acculturation in the society. To address its mandate, the Institute carries out a number of activities including policy studies, organization of workshops and seminars and publications.</p> <p>STEPRI influences policy making in the following ways:</p> <ol style="list-style-type: none"> 1. Submit reports to the government, sector ministry, government agencies, etc. (Most of these reports are submitted directly to the government or its agency or indirectly through the Director-General of the CSIR and at times through the 	<ul style="list-style-type: none"> • Enormous quantities of wastewater are being generated. Very important to recycle, but there are issues with environmental and public health. • Cost implications of recycling • Quality separation at house would be good • Accra Metro Assemblies need to integrate urban agriculture into overall planning • The biggest problem facing the Institute is inadequate funding by the government and delays in the release of approved budgets. This sometime throws the plans of the institute out of gear. <p>Thoughts on SWITCH Learning Alliance: Learning alliance is an excellent idea. Would like a forum to share ideas and knowledge.</p> <p>Could play a role in organising seminars, workshops</p>

	<p>CSIR Council).</p> <ol style="list-style-type: none"> Through Participation of Round Table Discussions, Workshops, Seminars, Conferences, Submission of Articles Through one-to-one interaction with politician. However, it must be noted that no politician would tell the world that this or that was the source of the policy. But when one reads carefully through a policy document, it is sometimes very clear that the institute might be the source for that policy Participate in policy making process such as the preparation of Science and Technology Policy, the Ghana Poverty Reduction Strategy (GPRS I & II), and through the involvement in the Committees levels. <p>The institute has built a strong human and institutional capacities to deal with its mandate, particularly in the areas of S&T Policies. It has also developed very fruitful collaborative research activities with other institutions/ organisations both within and outside the country. Such collaborations have the capabilities of the institute in many areas.</p> <p>Three Flagship Projects of STEPRI</p> <ol style="list-style-type: none"> Urban Agriculture Biotechnology S&T Research support for MSMEs <p>Main activities:</p>	
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	<ol style="list-style-type: none"> 1. Urban and Peri-Urban Agriculture 2. Public health and food safety concerns of wastewater water usage in urban agriculture 3. Irrigation agriculture, with particular interest in Rice Cultivation at Dawhenya Irrigation Project. 4. Rural Enterprises development 5. Analysis of Government Policies, with particular reference to agriculture development 6. Waste Management 7. Challenge Programme Water for Food (CP 34) <p>Other current Projects</p> <p>Urban Agriculture in Accra. Collaborative Research on Urban Agriculture STEPTRI, IWMI; The Ministry of Food and Agriculture, Ghana; and the University of Ghana, Legon. The Programme is sponsored by the Resource Centres for Urban Agriculture and Food Security - Cities Farming for the Future (RUAF-CFF) Programme on a Multi-stakeholder Processes for Action Planning and Policy Formulation (MPAP) for Urban Agriculture in Accra, Ghana (Obirih-Opareh N, and others, 2005)</p> <p>Technological Incubators: Tools for Promoting Enterprises Development in Ghana. (Obirih-Opareh N, 2004)</p>	
<p>WaterAid Aissa Toure Sarr, Country Representative</p> <p>27/06/06</p>	<p>Mandate and roles: WaterAid Ghana works through local partners (NGOs or LG, sometimes private sector) in implementing water and sanitation. Financial</p>	<p>Pricing is not the problem, but lack of access (on utility level and on level of alternative providers)</p> <p>⇒ How to improve coverage through GWCL. But this will take time.</p> <p>⇒ In the mean time alternatives exist?</p> <p>Impacting through GWCL is difficult (also because of political</p>

	<p>support, training and technical advice, as well as planning, budgeting and institutional development.</p> <p>Strong focus on advocacy. Interest in KM. Since last year: systematic research on pro-poor issues.</p> <p>Just started new 5 year strategy. New strategy: Move from 10% -> 30% budget allocation to urban sector. More emphasis on IWRM (but probably with a focus on the rural sector).</p> <p>Activities and projects related to IUWM in Accra:</p> <p>This year: project with UN Habitat</p> <p>Water for African Cities: WaterAid is bringing in the pro-poor focus and building up the capacity of communities. (however, the contract has not been signed yet (27/6/6))</p> <p>Pilot on bulk water management supply (in Glefe, TeshiTechi, Nima) with PURC, GWCL.</p> <p>Part of Resource Centre Network, knowledge management initiative Ghana, steered by the KM Task Force. However, way forward not clear. The learning alliances approach under SWITCH could give boost.</p>	<p>issues), but impact through community mobilisation, regulation for small water providers etc. is possible</p> <p>Lack of regulation, especially for informal water supply sector (small water enterprises provide 60%)</p> <p>Lack of knowledge management: different organisations are doing the same thing without knowing it or sharing information.</p> <p>Water quality</p> <p>5% cost contribution to capital investments for water supply by users is controversial.</p> <p>Remarks on SWITCH / LAs</p> <p>A project like SWITCH could give a boost to the KM Task Force. KM Task Force could be basis of LA.</p>
<p>Water Resources Commission</p> <p>Charles Biney, Executive Secretary (also Director Water</p>	<p>Under Ministry of Works and Housing now Ministry of Water Resources, Works and Housing (name changed last year). Funded by DANIDA</p>	<ul style="list-style-type: none"> - Eventual lack of water. - Siltation from deforestation. - Encroachment of settlement on RAMSA wetland sites. - Mining stress upstream could wipe out part of Accra water supply. - Lack of knowledge and regulation of groundwater use.

<p>Research Institute)</p> <p>27/06/06</p>	<p>Mandate and roles</p> <ul style="list-style-type: none"> - Regulate and manage water resources. - Current focus on raw water users e.g extraction for industrial purposes. - Grants permits for water use. Rate for water use permit very low to date. Started in 2001. - Based water demands on pump size calcs. - Has mandate to coordinate stakeholders and build capacity. <p>Activities</p> <ul style="list-style-type: none"> - Support water institutions in info mgt. Collect basin level data - Ghana has 16 major river basins. Doing IWRM on a basin level starting with Densu Basin on the west of Accra which provides part of the water supply in Accra - Formed Densu Basin Board (multi-stakeholder). Took a year to form . Working through all basins progressively with eventual whole of country plan. Also doing transboundary cooperation on Volta Basin (6 countries). Forming Basin Authority - So far, only 140 major water users are registered. Many minor users who are not registered. In process of registering smaller users. - Developed draft Ghana Water Policy – not released. Current situation demands consolidated water policy with an urban and rural water sections. Now with Cabinet. - Have draft regulation on drilling and groundwater development. 	<ul style="list-style-type: none"> - Challenge Program, in collaboration with the White Volta Basin Office is developing a decision support system <p>Remarks concerning LA</p> <p>Suggest linking SWITCH with UN Habitat program on Urban catchment degradation (being done by WRC as a component part of Water for Africa Cities program (WaterAid)</p> <p>Other remarks:</p> <ul style="list-style-type: none"> - Already several platforms operating. - Sending vision statement and objectives of organisation through along with plan summaries. - Agriculture has to register water access on WRC water register which gets referred then to WRC. - Water Resources Management Study – Reports available on water supplies and demands.
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<p>AMA Public Health Department</p> <p>Mr. J. C. Aryeetey (Ag. Director) Mark Anthony Adotey (Assistant Chief Env. Health Officer-Head Food/water/drugs & hygiene unit)</p> <p>28/06/06</p>	<p>Role: advocacy, education, sometimes enforcement of regulations and by-laws, Nuisance Control and Enforcement</p> <p>Dissemination of health information</p> <p>Goal: to improve health of people in Accra.</p> <p>Develop plans and solicit support from Government.</p> <p>Inspect at household scale of water and sanitary management – occasionally take citizens to Court.</p> <p>Monitors permits that are issued?</p> <p>AMA (Not Health?) responsible for tributaries but not Odaw River.</p> <p>GWCL responsible for water but City Authority has a stake so high level of interaction.</p> <p>Considered a civil servant organisation.</p> <p>There are three units:</p> <ul style="list-style-type: none"> - Food/water/drug safety and hygiene; - Nuisance Control and Enforcement; - Public Health Information <p>Responsible for:</p> <p>a. Advocacy, education and enforcement of regulations and by-laws to improve the health status of the people in the city. In advocacy, support is solicited from governmental organizations. Example is the Accra Environmental Health Initiative with UNICEF in which communities were</p>	<p>Challenges to the work of the Department</p> <p>Lack of political will to ensure the health safety of Accra and to demand that the polluter pays (What people pay is not enough. 20% pay and 80% of properties not paying at all.)</p> <p>City Authority being prevented from charging but believe in concept of polluter pays.</p> <p>AMA wants to charge realistic rates. Needs a revenue base.</p> <p>Public distrusts officers</p> <p>Department has been fragmented.</p> <p>Used to have public health specialist but GWCL has handed sanitation to AMA.</p> <p>Not clear role for Metro Health in water.</p> <p>Don't have funds for anymore for water sampling.</p> <p>Involved in several platforms where its input is sought, but AMA never gets credit.</p> <p>The main UWM issues waste and silt influx from other Districts upstream; failure by relevant institutions to execute their mandate; and lack of routine maintenance of existing structures.</p> <p>In urban areas a lack of personal responsibility whereas village people take better care. Basic problem on attitude of Ghanaians to health!</p> <p>Remarks related to SWITCH / LA Opportunities in UWM: AMA has the capacity if well resourced; incorporated the issue of UWM in AMA budget; need to increase sources of funding to the Department</p> <p>Have organised groups in past but everyone wants to follow its own road.</p> <p>Sees responsibility for stakeholder engagement as regional entity.</p> <p>Endorses the idea of a larger Forum – Mayor is keen to solve problem. Would like to arrange briefing with Mayor</p> <p>Other remarks: World Bank is going to fund AMA to deal with wastewater. ?</p> <p>GWCL has district officers.</p> <p>Accra facing 50 years as a Nation.</p>
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	<p>organized and empowered to deal with environmental sanitation and water pollution.</p> <ul style="list-style-type: none"> b. Environmental inspection c. Linking AMA with other institutions d. Sewage e. Issuing License to sachet water producers <p>The sources of funding include internally generated revenue from: business operating permits, property rates, user rates, government, and AfDB.</p> <p>Sampling of potable water for quality analysis has ceased since equipments are obsolete.</p> <p>Planned activity: re-valuation of properties in Accra; AfDB to resource AMA to deal with water</p> <p>No platform for intersectoral interactions exist, except on ad hoc basis</p> <p>Projects UNICEF-DFID: Accra Health Initiative: Communities organise and get support and educational materials from Centre empowering local communities.</p> <p>Project with Food Research Institute: conditions of food for sale.</p> <p>Did a review of all laws and produced a report that gathered dust (get copy)</p>	<p>EDP sometime supports AMA</p> <p>A report on legislative review of AMA is available .</p>
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<p>Public Utilities Regulatory Commission.</p> <p>Stephen N Adu, Commissioner / Executive Secretary; Robert?</p> <p>28/06/06</p>	<p>An independent body established under the Public Utilities Regulatory Commission Act 1997 (Act 538), regulating and overseeing the provision of utility services (electricity & water) in the country; water focus is on 82 urban areas countrywide. Commission is made up of 9 members (appointed by the President), including chairman, executive secretary, representatives for labour (TUC), industry (AGI), and domestic consumers, plus 4 experts.</p> <p>Roles/functions</p> <ul style="list-style-type: none"> - To provide guidelines for rates to be charged for the provision of utility services - To examine and approve water & electricity rates - To protect the interests of consumers and providers of services - To monitor and enforce standards of performance for provision of services - To promote fair competition among public utilities - To receive & investigate complaints, settle disputes between consumers and public utilities - To advise any person or authority in respect of any utility 	<p>Stabilisation of tariff regime: phased transition from 20 cents/cu metre in 97/98, to 56 cents/m3 2006 – close to economic level, but WB refers to 70 c/m3;</p> <p>tariff enshrines benchmarks (e.g. efficiency, loss allowance, etc).</p> <p>Losses 50/50: technical (i.e. leakages) and commercial (i.e. tapping, billing, metering)</p> <p>Difficulty of providing ‘social lifeline’ tariff (first 10 m3 free), but in ‘compound’ houses (multiple occupancy) this still penalises poor HHs. Social tariff now extended to 20 m3. Tariff still however doesn’t work well for poor, and looking at non-tariff mechanisms for the poor (pilot project – with whom? GWCL, WaterAid & ?). Key problem (for poor) is accessibility; pilot will build profiles of areas where water is stressed...</p> <p>Challenges around ‘tanker’ operations: biggest cost associated with haulage, so need to develop more ‘filling’ points.</p> <p>GWCL lacks funds for investing in infrastructural development (PURC is supposed to look after its interests).</p> <p>Interest in water quality management.</p>
<p>Waste Management Department, Accra Metropolitan Assembly</p> <p>Mr. Anderson N. Blay (Chief Environmental Health Technologist) and Mr. S. K. Kpodo (Principal Environmental Health Technologist)</p>	<p>Mandate and roles:</p> <ul style="list-style-type: none"> - emptying of septic tanks - management of treatment sites (1 out of 3 working). GWCL is responsible for pumping station. - solid waste management (collect, transport, treat, disposal of waste, cleansing (including the 	<p>Lack of financial resources.</p> <ul style="list-style-type: none"> - Little funding by donors. - Tariffs for water include sewage and are collected by GWCL, but does not come back to the Waste Management Department <p>Ghana Water Company is not involving the Waste Management Department on the Sewage Improvement management by the African Development Bank.</p> <p>Plastic is a big problem for drains. Lack of awareness of public in this.</p>

<p>Mr. Frank Chinbuah (Chief Environmental Health officer)</p> <p>28/06/06</p>	<p>beach), cleaning drains - sewage. (moved less than a year ago from the GWCL to AMA).</p> <p>Activities and projects related to IUWM in Accra: WMD is not involved in Water for African Cities</p> <p>WMD is looking into recycling and reusing waste. However, little awareness of consumers on sorting waste.</p> <p>Platform created for that involving Metro Public Health, CBOs, churches, schools, Ministry of local government, EPA (as consultant for report writing). Trying to put value on plastic waste.</p> <p>A consultant was contracted to write on plastic waste management</p> <p>In July 2004, the Ministry of Trade and Industry, the AMA and plastic manufacturers to find ways and means to deal with the plastic waste menace. A decision was then taken to buy the plastic waste.</p> <p>In furtherance to that, the Ministry of Trade and Industry funded the purchase of sea containers to be placed at designated points where plastic waste will be purchased from the public. The containers were distributed to some companies and NGOs who will operate the collection points. There are five collection points in Accra:</p> <ul style="list-style-type: none"> • Kwame Nkrumah Circle • Behind Kaneshie 	<p>Solid waste is a bigger problem than sewage.</p> <p>Wastewater treatment plants are not working. This is mainly caused by management problems and lack of skills of operators, and financial constraints</p> <p>Remarks on SWITCH and Las****: “There should be a platform to share and spread information to improve the situation in Accra”</p>
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	<p>Market Complex</p> <ul style="list-style-type: none"> James Town Tema Station 37 Lorry park <p>The Germans (GTZ?) have shown interest in working with WMD. Their idea is to privatise solid waste collection and involve small enterprises.</p> <p>The collection point purchase the plastics at 1000 cedis /kg and sell it between 1,300 and 1,500 cedis/kg</p>	
<p>Ministry of Water Resources, Works and Housing – Water Directorate</p> <p>Minta A. Aboagye (Director Water)</p> <p>29/06/06</p>	<p>President is owner of water resources. Minister coordinates activities in the water sector.</p> <p>GPRS & MDGs driving agenda, and basis for soliciting assistance. Water is Gov's No 1 priority.</p> <p>Harmonise policies.</p> <p>Urban water mainly handled by GWCL. Basin management handled by Water Resources Commission. Hydrological services handles operational hydrology, stream flow monitoring, flood control. Sewerage went to Ministry of Local Government (AMA has all waste). CSIR Water Research Institute looking at groundwater.</p> <p>Some collaboration happening. Strategic Investment Plan under development.</p> <p>Currently 3 areas being covered in urban water? May break into smaller units for better management. Does not</p>	<p>Previously supply-side only; more recent recognition of need for holistic switch.</p> <p>Need to 'decentralise' to smaller 'building scale' operations.</p> <p>Joint planning for total water management at initial stage (i.e. Strat. Investment Plan – earlier plan for urban situation being revamped).</p> <p>Peri-urban growth posing most serious challenge; Accra bursting at seams.</p> <p>Need assistance in waste water management.</p> <p>Operator losses high (~50%); and need to extend existing coverage.</p> <p>Knowledge and information Management needs to be addressed. Better understanding between organisations is necessary.</p> <p>Remarks on SWITCH and LA: Strongly supports learning alliance.</p> <p>Other remarks: Training for demand management done under UN Habitat – Water for African Cities program. Program has begun – link into Zabu Zabu just starting – mostly Muslim. Brings in stakeholders including land use.</p>

	<p>currently include demand management?</p> <p>Management contract for 18 urban systems with Vitens and Rand Water: for next 5 years only; doesn't relate to assets.</p>	
<ul style="list-style-type: none"> • Metro Planning Coordinating Unit-AMA. • Richard Kwame Oduro (Assistant Planning Officer) • 29th July 2006 	<p>The new Local Government Act 1993 (Act 462) section 46(3) established for each Assembly a District Planning Coordinating Unit (DPCU). The DPCU or the Metropolitan Planning Unit (MPCU) is to serve as a Secretariat to the Metropolitan Planning Authority and to advise on planning, programming, monitoring, evaluation and coordination of development plans, policies, programmes and projects within the Metropolis.</p> <p>Mandate and activities</p> <ul style="list-style-type: none"> ❖ Collection and analysis of economic, social, physical and institutional data. ❖ Preliminary rationalization and harmonization of development policies. ❖ Implementation of strategies and programmes and the preparation of projects documentation. ❖ Identification of bankable projects, assessment of the economic viability as well as the provision of technical advice for their implementation. ❖ Co-ordination of activities for the implementation of development projects in the Metropolis. ❖ Assist in the preparation of a comprehensive, integrated, perspective plans (medium - term plans, annual action 	<ul style="list-style-type: none"> ❖ Low revenue mobilization towards development activities of the Assembly. ❖ Through the Assembly's Dev't Plans, the attention of GWCL is drawn to shortfalls against targets. <p><i>(Following Leading Question)</i> Explanation was given to the under-achievements of the Assembly., and it was agreed that there was room for improvement in collaboration with others(internal & External Depts and other institutions.</p> <p>Volunteered that there were internal conflicts, which impede performance and development.</p> <p>Waste Management. At low/medium income areas dumping is free – and so such services are paid for through the services of private contractors.</p> <ul style="list-style-type: none"> - And that private contractor is not paid promptly for services rendered due the lack of funds. <p>But at well-organised and high-income residents pay for waste services rendered to them.</p> <ul style="list-style-type: none"> - Collecting outstanding debts jeopardised on-going relationships. - Inadequate infrastructure Capacity. - AMA is involved in taking care of the city and providing certain social services to the public, but some section of the public sees AMA differently (i.e. in less favourable light).

	<p>plans) the development budget, and the identification of subject areas for technical details of the plan targets. - Plans are changeable and this depends on depends on Gov't of the day. P(NDC)-5 Year Plans based on Vision 2020. NPP- 30 Year Plans based on GPRS.</p> <ul style="list-style-type: none"> - Consultation process with NDPC, Budget Dept & order relevant Depts - Formation of Task Force for preparation of Dev't Plans.: Members include- Selected relevant Depts., CBO's NGO's, Private Sector Institution, Informal Vibrant Groups and Community Members. - Plans look at Water Supply: GWCL are contacted for certain inputs, but are not members of the Task force for the plan preparation. - Plans take into account coverage, consumption over time. Refer to D-Plan Page 110 ❖ Monitoring and evaluating of the implementation process of projects. - Including approval/recommendation of payment of contractors, certification to confirm work done to specification. ❖ Co-ordination of donor funded development activities. ❖ Responsible for Outdoor Advertisement: Permitting, erection & Control. 	
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	- Physical Planning (Development Control) is undertaken by TCPD.	
Others:  Urban Irrigation Farmers associations  All Breweries and all Big industrial water users		

2. Background notes

Include here supporting notes on any key issues that may need further explanation.

Accra

Is the administrative and political and commercial capital of Ghana. Main agricultural activities in the metropolis include fishing, poultry farming, and cultivation of vegetables or horticultural gardening. Accra experiences a bimodal rainfall regime, which occurs from March to July (major rain season) and from September to November (minor rainy season). Average annual rainfall is about 810mm. Rainfall is usually intensive with short storms, giving rise to local flooding where drainage channels are obstructed. Accra has a current population of about 2 million. It is the most populated and the fast growing metropolis in Ghana with an annual growth rate of 4.3 % (National Population Census, 2000). In addition, Accra has a functional population of 2.5 to 3 million people in terms of socio-economic activities aside the residential dimensions.

According to Agodzo et al. (2003), the total amount of grey and black wastewater currently produced annually in Ghana has been estimated as 280 million m³. This untreated water is derived mainly from domestic sources, as Ghana's industrial development is concentrated along the coastline where urban water treated or untreated is disposed off into the ocean. It is established as well that less than 5% of the households in Accra are connected to pipe sewerage systems, while 21 % use flood drains (gutters) as open sewerage that ends up in nearby urban water bodies. Kitchen and bathroom drains are usually directed into open drains. Most of urban drains are not covered and investigation shows that some households without adequate sanitation facilities engage in directly defecation into these drains. The 2000 population Census shows that one third of all households in Ghana use public toilet due to absence of toilet facilities in many dwellings. Presently, a large modern biological treatment plant is in operation after it started in some few years ago. However this plant handles about 8% of Accra's inner city wastewater from domestic and industrial sources. Currently, this plant operates about three times below capacity due to constraints of small urban sewerage network. Additionally only about 10% of Accra's waste water is collected for some form of treatment. There are about three other smaller treatment plants scattered in the city.

Drainage in Accra

River Catchments	Description/Characteristics	Resources	Problems
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Densu River and Sakumono Lagoon	Largest of all the four coastal basins within Accra. Total drainage is about 2500 km ² . Few of the drainage channels in the catchment are constructed. As a result there is heavy erosion of drainage channels	Fishing activities, Treated for potable water source	Flooding is common along the 8km of the Densu River below the Weija dam whenever there is overtopping or deliberate release of water over the spillway.
Korle-Chemu Catchment	Covers an area of 250 km ² . Principal streams draining the catchment are the Odaw river and its tributaries. This catchment contains the major urbanized areas of Accra. The Odaw river is the main river draining the metropolis.	Fishing activity	Erosion and siltation of drains remain a serious problem. Flooding is a problem Some of the inundation is due to lack of adequate drainage channels. Refuse dumped into drains leading to choked drains
Kpeshie	Covers a relatively small catchment of 110 Km ²	Fishing activity	Many water logged areas become flooded with little rain. Poor drainage, channels silted and choked with refuse
Songo-Mokwe	Smallest drainage basin in the metropolitan area. It covers about 50km ² , draining the area of Teshie to ridgeline with Sakumono II catchment	Fishing activity	Poor drainage resulting in serious flooding in Teshie Nungua estates

Source: AMA 2002

Poor drainage therefore constitutes a major problem, which affects many parts of the metropolitan area. Natural features such as underlying geology, soil conditions and localized topographic features create some drainage problems. Development should never have been allowed in such areas; however the lack of planning and control has been unable to prevent urban encroachment. Urbanization is the cause of most of these problems as it has led to increased surface runoff and flooding in low lying areas. Inadequate drainage and under designed channel capacity in many areas is culpable for the flood problems. These problems are compounded where drains are used to deposit solid and sanitary wastes.

3. Actions identified



Identify follow-up actions for SWITCH project focusing on where linkages might be improved between city needs and work packages.

<i>Work package</i>	<i>Action</i>	<i>Who</i>
2.2 Decision processes for stormwater management		
3.1 Demand management	Come up with strategies to ensure effective water demand management in Accra	Water Directorate, MWRWH, PURC
3.2 safe water reuse	Ensuring safe reuse of urban water	Water Directorate, KNUST, GWCL, PURC, IWMI
4.1 Ecosanitation and Decentralised wastewater management in urban context	Investigate knowledge base and possibility of its acceptance in Accra	EHSU, AMA-WMD, EPA, Valley view university, IWMI, KNUST
5.2 Water and urban agriculture	Link up with the existing city learning alliance on urban agriculture in Accra	IWMI, AMA, CSIR, MoFA, KNUST
5.3 Natural systems in the municipal water cycle	Consider opportunities for self purification along wastewater channels in Accra	Hydrological Services Dept., WRI, UG, KNUST, IWMI
6.2 Learning Alliances	Consider multi-stakeholder collaboration in Accra	All key stakeholders

4. Contacts:

Include contacts of key persons.

<i>Organisation</i>	<i>Names</i>	<i>Details</i>
Environmental Protection Agency	Florence Agyei Johnathan Allotey	Head, Accra Office of the EPA 021-664697/8, fagyei@yahoo.co.uk Executive Director, EPA. 021 664697/8, 667524, 663499, 662465/epaed@africaonline.com.gh ,
AMA Public Health Department	Mr. J. C. Aryeetey (Ag. Director AMA Public Health Department) Mark Anthony Adotey (Assisatnt Chief Env. Health Officer-Head Food/water/drugs & hygine unit)	P.O.Box 133 Accra Tel: 466609 Aadotey1952@yahoo.com
Ghanaian Times	Tom Dorkenoo	Editor. 021-228282,
AMA	Timothy T. Oman (Principal Planning Officer, AMA coordinating Unit) Stanley Adjiri Blankson (Metro Chief Executive, Accra Metropolitan Assembly) Richard Kwame Oduro (Assistant Planning Officer) Coordinating Unit-	. 0244- 792834 0244/0277 209911 richidswise@yahoo.co.uk

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AMA Waste Management Department/ AMA waste Treatment Plant	Mr. B.M. Laryea Mr. Blay (Chief Environmental Health Technologist) Mr. S. K. Kpodo Mr. Frank Chinbuah (Principal Environmental Health Technologist)	Tel: 021-225465/230574 Tel: 024-4624010 Tel: 024-4699554 Office: PO Box 1269, Accra Tel: 020-225465/230574 wmd@ghana.com
AMA Environmental Management Sub-committee		
Ghana Water Company	Cynthia Hiram Yaro (PRO) Asomaning Nyarko	024-4659376 020-8308944 naamaley@yhoo.com
Hydrological Services Dept.	Mr Harold T. Clotty (prin. Consultant)	PO Box MB 501 Accra Mobile: 020-8167788 Tel office: 021-663688
Ministry of Water Resources, Works and Housing Water Directorate	Mr. Gabriel Engmnann Mr Minta A. Aboagye (Director Water)	685513 673891/673701 gabengmann@yahoo.com m_aboagye@water-mwrwh.com y_minta2000@yahoo.com PO Box GP 2344 Mobile: 0244-321732 Tel: 020-402139
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Ministry of Tourism and Modernisation of the Capital City	Stephen Asamoah Boateng (Dep. Minister)	021 662260
Community Water and Sanitation Agency (CWSA)	Mr. R. K. D. VanEss Ms. Charlotte Engmann Mrs. Safuratu Andani	021 514801 021 514801 021 518718

Public Utilities Regulatory Commission (PURC)	Mr. Stephen N. Adu (commissioner / Executive Secretary)	No 51 Liberation Road African Liberation Circle, Accra P.O. Box CT 3095 Cantonments, Accra Tel: 021-244180-3 stephadu@purcghana.com , info@purcghana.com
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Parliamentary Select Committee on Local Government & Rural Devt	Kwabena Appiah Pinkrah Joseph Yieleh-Chireh Tawiah Abrefa – Secretary	024-4649277
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Royal Netherlands Embassy	Wilma van Esch (first secretary, Environment and Water advisor)	PO Box CY 1647 89 Liberation road Ako Adjei Interchange Accra 021-785487 Wilma-vanesch@minbuza.nl

5. Documents:

Include details of key documents collected/ brought to attention.

No	Details (include web links if relevant)	Status
1	National Water Policy	Prepared by Ministry of Works, Housing and Water Resources. Draft (Awaiting Cabinet Approval)
2	Environmental Sanitation Policy	To be reviewed by end of the year. 1999 version Currently in Use
3	Communications Strategy – Water Resources Commission	In Use
4	Small Towns Water Supply Policy-CWSA	In Use by CWSA for the delivery of water supply services to Small Towns and Peri-urban communities.
5	Environmental Health Inspection: Organisation and Implementation	In Use by Environmental Health Officers in the country.
6	Ghana's Water Resources: Management Challenges and Opportunities.	Document by Government of Ghana - Ministry of Works, Housing and Water Resources. 1998
7	Accra Metropolitan Assembly Report 2002	Ministry of Local Govt & Rural Devpt.
8	2000 Population & Housing Census – Special Report on 20 Largest Localities	Ghana Statistical Services, 2002
	Other Reference Materials	
9	Urban Agriculture in Accra Metropolis. Report by the Accra Multi-stakeholder forum on urban agriculture. 120pp	
10	Obuobie, E., Keraita, B., Danso, G., Amoah, P., Cofie, O.O., Raschid-Sally, L. and P. Drechsel. 2006. Irrigated Vegetable Farming in Urban and Peri-urban Ghana. IWMI-RUAF-IDRC, Accra, Ghana: 150 pp.	
11	Agodzo S. K. et al. 2003. Use of Wastewater In Irrigated Agriculture: Country Studies from Bolivia, Ghana and Tunisia, Vol. 2 (Ghana).	

Scoping Visit Lodz, Poland

28 – 31 May 2006

Report



Lodz means "the boat"

Prepared by:

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- 9. References
- 10. Lodz notes



The overall purpose of the scoping visit is to get the SWITCH programme in the city of Lodz¹, Poland, started. Not so much in terms of research content, but rather in terms of starting to bring together and promote interaction among key stakeholders in urban water management.

In order to achieve this, the visiting team worked at three levels:

1. work with the current core SWITCH team of Lodz to organize the visit; check the review the initial identification of key stakeholders; review the existing preliminary scoping report; discuss scoping visit reporting and preparation of the Lodz Learning Alliance Platform (LLAP) action plan;
2. interview a selection of key stakeholders and visit the two study sites to get a feeling of current views and work on urban water management and prepare people visited for the Lodz SWITCH workshop;
3. bring together key stakeholders in a half day workshop to (1) present SWITCH global, SWITCH Lodz plans and the Learning Alliance concept and (2) stimulate interaction among them to start visioning SWITCH in Lodz and discussing LA as a modality for an integrated collaborative approach;

Additional to the above, the opportunity was taken to participate in the official opening of the ERCE institute.

See annex for detailed visit programme.

Methods

Informal and formal discussions and meetings on content and process with the Lodz SWITCH core team, including joint drinks and meals, which contributed to 'break the ice' and start building confidence and trust.

Interviews of (a selection of) key stakeholders and site visits making use of the scoping visit checklist (see notes in annex).

Organizing and (co)facilitating a Lodz SWITCH workshop (see programme and reporting in annex), making use of the following facilitation methods:

1. Presentations by Lodz stakeholders;
2. Presentation with questions and answers of SWITCH global, SWITCH Lodz and the LA concept;
3. Doing a 'Lodz SWITCH café' (see www.theworldcafe.com for method) on visioning SWITCH and LA by participants. The method consists in 3 informal rounds in which all participants in every time different arbitrary constellations discuss and document 3 questions relevant to doing SWITCH in Lodz (see annex for details);
4. A plenary metaplan (visualisation and sharing of thoughts on cards) session around 2 questions: (1) and (2) what participants are prepared to contribute to SWITCH.

¹ Lodz pronounce Wootzch means boat

See annex 1 for scoping visit program.

Main lessons

1. SWITCH Lodz is driven by a very enthusiastic team from the Department of Applied Ecology, who de facto operate from the recently opened UNESCO ERCE centre.
2. The city (council) is aware and interested in SWITCH, though at this stage not directly involved yet.
3. To have Lodz fully participate in SWITCH, including the learning and sharing among cities and research teams, the language issue will need to be addressed. Lodz documentation is mainly in Polish. Lodz participants generally speaking cannot communicate in English language.
4. More discussion among all parties involved is required to get a common view on Lodz SWITCH priorities. The proposed demo's (along a minor little stream and the plantations recycling waste of the water treatment plant) will not obviously on their own contribute to a paradigm shift in IUWM in the city. The initiative of the local NGO Nafali to more actively involve the citizens of the city in IUWM seems more interesting.

Recommendations

At this stage we have not formulated very clear recommendations. The notes by Carol Howe below do however raise a few interesting points.

Working together better - Demonstration Cities and Learning Alliances
Carol Howe

First, thank you to all of you who have proactively become engaged in the activities of the demonstration cities and learning alliances. It is exciting to see all this energy and commitment. Following are my comments on some of the things we need to consider or build upon in connection with the demonstration cities and learning alliances.

Overall

1. When talking to local stakeholders it is important that local stakeholders are aware of the benefits that SWITCH can bring to their area. SWITCH is providing access to:
 - Knowledge sharing of over \$20 million Euros worth of urban water research
 - Direct and virtual interactions with a global network of urban water scientists and learning alliance professionals
 - Locally tailored training and dissemination materials on urban water management and learning alliances
 - Enhanced potential for and assistance with local urban water funding through regional and technical collaboration
 - Local demonstration project funding
 - Enhanced profile for their City through association as a SWITCH demo city
2. Urban learning alliances will be significantly different than rural, peri-urban or developing country learning alliances (a learning process in itself that we should document). Urban areas generally have much better access to \$ and the resources of facilitators, meeting spaces, technical facilities and other key factors critical to the success of learning alliances. This infrastructure generally exists. If the Demonstration Cities buy into the learning alliance process it is not un-reasonable to assume that these services will be provided by either government or NGOs as their "in-kind" contribution.
3. For SWITCH to be a success and its outcomes realised we will need to work as ONE team – researchers, learning alliance facilitators, city coordinators and training and dissemination specialists. I am against generating more

acronyms that might confuse externals and segment us internally. I strongly suggest that we complete the initial scoping studies in each of the demo cities and then define what \$ are needed to fund future activities. We need clearer definition on the city plans before this can happen. The biggest issue after the scoping studies will be WHAT IS THE NEXT STEP? For example, in Lodz we saw willingness of most stakeholders to join in a learning alliance but no clear understanding of what they might actually do. Maybe facilitation would help this process but perhaps there are other next steps also that are more productive and acceptable. I would like to raise the possibility of doing scenario planning exercises in each of the cities for 20-30 years into the future. From this the learning alliances may be able to better define what future they would most like to move towards. Scenario planning often allows people to move outside of the day to day structures and issues that can limit cooperation. I also think a 9 city compilation of urban water scenarios backed by a learning alliance would be very good reading.

4. We at the project office are sorting through how to make all the information you collect through the scoping studies readily available to all that need it. Much is in hard copy and non-English. We will get back to you soon on this but welcome any suggestions.

5. In response to John B's recent email details of the budget for 6.2 can be found on the FTP shared drive under folder called Financial database. Although this is the budget for 6.2 we are sorting through what additional budget is being provided by Themes out of their research funds, the training and dissemination budgets and the demo project budgets. Mike – it is good to see that you are pursuing coordination of the governance research with the learning alliances as indeed this is critical.

Specific Requests from SWITCH Project Manager

1. Our experiences in Lodz, Poland have made it clear that we should have briefing materials on the SWITCH program (in simple detail but beyond the brochure) available prior to and at the scoping study. In non-English speaking countries this will need to be translated into the native language.

I will prepare a master presentation for use by Theme leaders and City Coordinators that can be tailored to their needs. To do this I will need each Theme leader to send me ONE or two slides that very simply summarises your themes activities with examples of where this will be applied. Pictures on the slide that visually capture what you are doing are very helpful.

2. For the Learning Alliances to be successful we will need to build up trust with the local communities. It is important that we have continuity of SWITCH members with these cities. The researchers are defining this with each city. Can we have the same commitment from the Learning Alliance team? Also, I will work with the training & dissemination people to get them involved in each city earlier rather than later.

3. The scoping report for Lodz will be available next week. The questions provided by the LA for this meeting were useful in the scoping exercise. However, post scoping study the team was unsure what format or information should be included in the scoping study report and future action plan. For future scoping studies it would be extremely useful for all if the Learning Alliance could produce a standard report template that covers how to summarise the scoping study and also the key steps that should be in City's learning alliance action plan. John, I heard that you had done the template for the scoping study part but I don't seem to have it. This should also include the lessons that the SWITCH team learned on what worked well and things to avoid, in interacting with local groups.

In closing, I am planning to join the scoping studies in Tel Aviv and Accra and am investigating participating in Birmingham or Hamburg.

Next steps

Finalize and agree on the content of this report and provide a translation for Lodz participants as a basis for further discussions and setting the local agenda.

Day	Activity	Persons involved
Sunday afternoon	Arrival in Lodz	Peter J. Bury (PJB) & Carol Howe (CH)
	Initial visit programme discussions	PJB & CH with Zbigniew Kaczkowski (Zibi)
Monday morning	Interviews with key stakeholders:	
	“NGO Lodz na Fali”	PJB & CH with Maciej Zalewski (MZ), Katarzyna Izydorczyk (KI) & Zibi
	Department of Environment and Agriculture The Office of the City Łódź	PJB & CH with MZ, KI & Zibi
	Voivod Inspectorate of Environmental Protection in Lodz	PJB & CH with MZ, KI & Zibi
	Sewage Treatment Plant in Łódź	PJB & CH with KI, Wojciech Frątczak (WF), Agata Drobniewska (AD) & Zibi
Monday afternoon	Visit demo site 1, Sokolowka river	PJB & CH with KI, WF, AD
	Visit demo site 2, Ner river	PJB & CH with KI, WF, AD
	Preparation workshop	PJB & CH with Iwona Wagner (IW)
Tuesday morning	Dinner with ERCE director Preparation workshop & Lodz SWITCH LA workshop	PJB, CH, Lodz SWITCH team and 24 participants
	Brief evaluation and next steps discussion	PJB, CH, Lodz SWITCH coordinator
Tuesday afternoon	Report writing	PJB & CH
	Reception ERCE opening	PJB & CH, Lodz SWITCH team and others invited
Wednesday morning	Departure	CH
Wednesday afternoon	Attendance ERCE official opening Departure	PJB PJB



SWITCH

Annex 2 Interviews and visits



Notes made by visiting team are reproduced here

Notes by Carol Howe

Lessons learnt

- Almost all stakeholders spoke only Polish. Translation was awkward and took longer than expected.
- Presentations and briefing materials need to be carefully prepared in advance in both languages.

Background – General information

- Legislated policy main mechanism of regulatory requirements.
- Wastewater treatment plant regulated by regional body.
- Over 200 bores operating for water supply – no pressure needed (no pumping)
- Infiltration from City keeping groundwater about even.
- City wants to increase infiltration to groundwater for water supply.
- Water supplied by water utilities that are separate but owned by City
- Heating for houses supplied through centralised system of 5 main plants. Charge is flat rate
- Water, wastewater and storm water charges all in one bill from City of Lodz. Wastewater treatment plant gives invoice to City for services and cost passed on to customer.
- Wastewater plant has just finished expansion and has excess capacity although unclear whether they will still be under-capacity in wet weather once commissioned. (8 minute video of plant available – Carol to put on website)
- Hot water is supplied through same plants at 10cents per kilolitre
- Cold water is supplied separate at 3 cents per kilolitre plus service charge
- Properties are metered for water use. Can pay by usage or opt for flat rate that allows 7 cu meter per person per month. Paying usage (from staff experience) was felt to be cheaper.
- People of Lodz have a strong affinity for rivers even though their 12 urban systems are not much more than creeks. They would like more access. Lotz means boat.
- General confusion on whether water was safe to drink with most saying no. Almost all drink bottled water. Water used to come from river system which had serious problems – algae blooms. Now over 90% from groundwater.
- Bottled water cost 40cents per litre
- Energy costs – 8-10 euros/month?
- Heating – 10-20 euros/month
- On-going thread of coal burning – air pollution – need for green space and access to water – drive to improve river systems and surrounding green space. No talk or observed knowledge of sustainability, risk assessment, integrated water modelled, alternative governance or finance structures.

Monday 29, 2006

NGO – Lodz You Like Association of Lodz Nafili (Lodz on Waves)

Want to revitalise city

Do not believe enough citizens currently get involved – not part of culture

Lodz is representative of an industrialised town needing transition

Have tools such as Internet website, social forum

They are a relatively new, virtual organisation with 16 people and plan to grow

100 registered forum users but many more users

Have already successfully lobbied to get airline flights into Lodz and money for the Museum of Modern Art.

Have decided to divide their effort into schools education and the direct problem of river pollution

Department of Environment and Agriculture

The Office of the City Łódź says that things are getting better – step by step

Industry use and discharges are declining

Sewage treatment plant upgrades are happening

However, infiltration needs improved

Air quality is big problem – burn coal as main fuel



Need more green space to absorb air pollutants



Undertaking two main actions

Sewering unsewered areas (backlog)

Separating stormwater and sewerage systems (through support of European Union

Parks are being expanded and organised around hydrological features – new reservoirs being constructed for aesthetic purposes.

Have awareness raising role through botanical gardens, zoological and forestry

Website is available through main City Council site

Voivod (regional) Inspectorate of Environmental Protection in Lodz

Part of National system – funded for \$8M per year. Other funds for environment about 10%

Interested in turning surface waters to recreational use – eutrophication a problem

Control drinking water quality testing of groundwater – say quality ok

Health Department tests tap water quality

Offices seriously understaffed with financial limitations – limits ability to do things such as risk assessments, etc.

180 people in Department – 20% analysis of results, 60% inspection, 30% tech-admin

Central Institute of National Government does main planning and water needs forecasting. General Inspector is National with Regional Directors

Not clear what modelling is done or can be done.

GIS systems are available at National level – Institutions are charged to access this information.

Website – www.wfios.lodz.pl

See SWITCH advantage as exchanging information and experiences

Learning alliance

Stakeholders believe learning alliance will help in:

- Promotion of city
- Knowledge sharing
- Coordination of Government
- Making compliance and actions clearer to EU
- Better community awareness of river systems and water mgt.

Attitude positive by all stakeholders in workshop to formation of learning alliance but goals and objectives not clear.

Carol suggest that SWITCH consider small scenario planning exercises in each city to help stakeholders form their vision for what type of water management they would like to have in 30 years time. Something to excite and give LA direction outside of current problems and day to day issues.



SWITCH

Annex 3 Lodz SWITCH workshop



Programme

Note: required translations meant some session took more time than scheduled. In order to save time, local presentations and most group work outputs were not (fully) translated by recorded for later documentation in English.

Indicative timing	Activity	Who / remarks
10:00 - 10:15	Opening	Iwona Wagner (IW), coordinator
10:15 - 10:20	Purpose and programme: introduce SWITCH; let people start talking to each other; identify who wants to take part.	IW
10:20 - 10:25	name tags	Peter (PB)
10:25 - 11:05	local presentations (some brief, some with power points)	IW and various no discussion (recording no translations)
11:05 - 11:25	The SWITCH programme	Carol Howe (CH)
11:20 - 11:45	SWITCH in Lodz	IW
11:45 - 11:30	Learning Alliance the concept questions and comments	PB
11:30 - 12:30	Lodz SWITCH café: 3 rounds of group work on key questions related to SWITCH and LA in Lodz, plenary presentations of group work	PB (see elsewhere in report)
12:30 - 13:00	Metaplan session on next steps: 1 are you willing to be part of this and 2 what suggestions for next steps taken up by small taskforce	PB / IW

“Lodz SWITCH café” questions introduced by IW and discussed (see annex on method)

1. Your vision for your children: what does Lodz need to achieve in water management in the next 20 years
2. Who in (or outside) Lodz should be involved in SWITCH Lodz?
3. What kind of extra benefits could the city gain if we create a learning alliance platform in Lodz?

For outcomes see annex 5.

Next steps questions (see annex on Metaplan method)

1. What could you contribute to the Lodz SWITCH learning alliance?
2. What suggestions do you have for next steps?

For outcomes see annex 5.

1. Local presentations
2. SWITCH global presentation
3. SWITCH Lodz presentation
4. LA concept presentation
5. Questions and answers (on presentations 2 – 4)

Questions and answers on presentations

Zawilski Marek, Prof. (Technical University of Łódź):

SWITCH project and Learning alliance create the opportunity to establish structure which could substitute such institutions like Major Office Advisory Scientific Council. It was created for problem solving but is inefficient. Are there any examples/cities known that learning alliance provided progress in IWM implementation?

Answer Peter:

In the SWITCH programme the experience is not really there yet, because we just started. But we do have the cities participating in the programme, good example is Birmingham, where the city makes resources, people, time, meeting space, sometimes even money to organise LA. But as I know, there are other examples outside SWITCH, such example is an agenda 21, program where have been found the solutions to allocate the resources needed for creation LA.

Andrzej Czapla (Sewage Treatment Plant in Łódź):

Different WM statements are submitted at national level, but the implementation is a weak point - often everything is stopped at the “statement faze”. The problem is lack of cooperation at regional/city level. Part of responsibilities belongs to the city while other are placed at voivod level. Theoretically there are legal means enabling cooperation but in practice the information and decision flow is impaired.

Answer Iwona:

If the problem is cooperation, we should use the advantage given by the SWITCH project and use the experience and skills people involved in the project. SWITCH gives the access to the relevant training and assistance both abroad and in the country.

Jolanta Włodarczyk (Department of Environment and Agriculture The Office of the City Łódź):

The scope of the topics being in interest of learning alliance are action targets of the City Office. Examples are Sokołówka river, Sewage Treatment Plant and small retention development project. This projects are already running. They have to consider the LA idea, nevertheless it is not true that there is complete lack of cooperation and the Sewage



Treatment Plant is a good example of cooperation between the city and voivod. The problems with diffused decision-making process is related with legislation defining responsibilities of each institution. Of course, it would be good to include also such institutions like Water Management Regional Board or Voivod Inspectorate of Environmental Protection.

Anita Waack (Department of Infrastructure The Office of the City Łódź):

There is such a cooperation but each institutions is strongly focused on narrow topic for which is responsible. The general thinking is that such particulate topic is the most important and that such responsible institution is the most competent to do the job. But it is important to give other stakeholders the chance for their own opinion, which may be very valuable. It seems, that such opportunity is related with SWITCH project.



SWITCH

Annex 5 Workshop outputs



“Lodz SWITCH café” outcomes to the questions introduced by Iwona and discussed (see annex on method)

1. Your vision for your children: what does Lodz need to achieve in water management in the next 20 years?
2. Who in (or outside) Lodz should be involved in SWITCH Lodz?
3. What kind of extra benefits could the city gain if we create a learning alliance platform in Lodz?

Ad. Question 1. Your vision for your children: what does Lodz need to achieve in water management in the next 20 years?

Discussion at table #1

- education and awareness raising – key activities needed to achieve sustainable IUWM in Lodz in long-term manner;
- successful advertising of the IUWM goals and positive outcomes, for example through implementation of slogans like: “clean city – clean rivers” to rise awareness that litter thrown away by individual affects the whole population (aesthetic value);
- wide involvement of basic community structures (Rady Osiedla = Housing Estate Council), which have funds at disposal but often don’t have identified environmental needs in their neighbourhood, it makes that local communities will identify with IUWM;
- the area around water should be green (human - friendly), protected and used for recreation, especially should be focused on teenagers through supplying opportunities for active recreation (special tracks for skates, bikes, etc.). If more attractive and free of charge recreation places would be available, less kids would be bored and interested in bad things like drugs, alcohol, etc.

Discussion at table #2

- rehabilitation of rivers inside the city;
- secured local water resources, social safety in case of unexpected events (climate changes);
- higher awareness of the value of good quality water resources;
- high quality recreation areas, positive correlation between natural environment in good state and recreational infrastructure;
- increased city attractiveness – attracting people to the initiative;
- acceleration of investments in infrastructure: sewerage unsewered areas and separating storm water and sewerage systems;
- defining clear and stable priorities in water management inside city.

Discussion at table #3

- creation of complex recreation areas – special need for large water body inside (close to) the city;
- improved river systems with green space created in surrounding area;
- reservoirs inside city used for storm-water purification (bio-filters);
- creation of education paths along rivers one of the ways to achieve lon-term sustainability in IUWM.



Ad. Question 2. Who in (or outside) Lodz should be involved in SWITCH Lodz?

Discussion at table #1

- especially more active should be The Office of the City Łódź, furthermore involved should be: Marshall Office (Urząd Marszałkowski), Water Management Regional Board (Regionalny Zarząd Gospodarki Wodnej); local members of Self-governments at all levels, NGO's, universities and schools, Regional Board of National Forests Company.

Discussion at table #2

- The Office of the City Łódź, Marshall Office (Urząd Marszałkowski);
- funding institutions, especially those responsible for EU funds (potential LA host?);
- Housing Estate Councils (Rady Osiedla);
- LA needs not only facilitator but also patronage;
- number of stakeholders involved in LA should be limited to competent ones;

Discussion at table #3

- Decision makers involved in IUWM;
- Water Management Regional Board (Regionalny Zarząd Gospodarki Wodnej);
- people with relevant know-how;

Ad. Questions 3. What kind of extra benefits could the city gain if we create a learning alliance platform in Lodz?

Discussion at table #1

- IUWM know-how knowledge sharing;
- Improvement of cooperation among all stakeholders, not only those with strong position;
- development of more sophisticated tools for management and planning (GIS, modelling) connected with increased accessibility to the information about the city;
- enhanced international cooperation will speed-up knowledge and experience flow and enable wide city promotion;
- development of the city infrastructure;
- increased local patriotism.

Discussion at table #2

- improved cooperation between governmental and self-governmental authorities and services;
- city promotion;
- enhanced knowledge and experience flow;
- dissemination of IUWM knowledge;
- adopting all water management issues to the UE standards.

Discussion at table #3

- knowledge-based water management, diminished political influence;
- improved cooperation between major stakeholders and research institutions;
- changed administrative structure – adopted to IWM.

Next steps, metaplan session

This session held in plenary consisted in two rounds of questions, answered by all participants using the metaplan method (see annex on Metaplan method). The outcome is documented below.

1. What could you contribute to the Lodz SWITCH learning alliance?
2. What suggestions do you have for next steps?

Ad.Question 1. What could you contribute to the Lodz SWITCH learning alliance?

1. dissemination of SWITCH ideas;
2. training courses for schools;
3. gathering and coordinating the information related with the Office of the City;
4. promotion and coupling the outcomes from parallel projects Alter and SWITCH – win-win strategy;
5. local communities engagement;
6. planning further strategy;
7. implementation of research outcomes into real actions;
8. research programs training.

Ad.Question 2. What suggestions do you have for next steps?

1. establishing patronage;
2. setting the LA meetings schedule;
3. setting clear goals with accomplishing deadlines;
4. identifying stakeholders responsible for identified tasks;
5. associate different governance levels;
6. dissemination the SWITCH project knowledge among self-governments members;
7. prepare pilot scale action involving local community.

Reflecting on the level of progress (not just yes/no response) with recommendations to address problems and take advantage of opportunities

1. Have all the key stakeholders in urban water management been identified?

Key stakeholders have been identified at city level (see inventory of stakeholders) and most participated in the scoping visit talks, and currently include key city council departments, water / sewage utilities, regional environment agency, a civil society organization, relevant departments of 2 city universities. A few additional recommendations have been made during the scoping visit workshop (see workshop report). It was discussed that the Lodz SWITCH process will follow an inclusive and incremental approach, open for further interested parties to join at later stages.

2. What is the level of engagement to date between the project and those stakeholders?

Bilateral engagements between the Lodz SWITCH coordinators (ERCE) and in particular relevant city council departments and the technical university have been ongoing since before the inception of SWITCH. With most other stakeholders interaction has started. The scoping visit workshop offered a first, highly appreciated, opportunity to engage with key stakeholders in a workshop setting.

3. Has a broad range of urban water management problems been identified?

The focus, for the time being, is on the two already identified main themes: river recuperation and storm water management (natural systems) on the Sokolowka river and sewage sludge valorization on the Ner river. However both the Lodz SWITCH programme coordination team and the scoping visit workshop identified further UWM issues that should be addressed (see report).

4. Have the possible linkages between these problems (city needs for solutions) and the work packages (research that can potential provide solutions) been explored adequately?

With exception of the Lodz SWITCH programme coordination team (at ERCE) most key stakeholders have currently a fairly narrow mandate specific view on UWM issues. Only once the key stakeholders within the context of a Lodz LA platform start to interact as a group will further linkages and a more integrated approach emerge. A very first timid step was taken during the scoping visit workshop.

What can be done is to identify methods to speed up local identification of linkages by organizing LA activities like 'future scenario planning' workshops.

5. Are modifications needed to improve efficiencies and synergies between work packages?

Yes, but the answer to question 4 indicates that the process has only just begun and that clarity and local ownership on possible necessary modifications will only emerge at a later stage (see question 4).

6. Have cross-cutting issues (gender, poverty, governance, financing etc) been adequately considered?

Not really yet. Though these topics have been mentioned during the scoping visit both by the visiting team and some of the local stakeholders.

A few remarks at this stage:

1. There was a 50-50 gender balance among the Lodz workshop;
 2. During the workshop issues like awareness raising and education of the whole city population were mentioned as key activities.
 3. The vocabulary used seems to indicate fairly hierarchical thinking in society.
 4. There are indications that local financing may be available (in cash and kind) to contribute to SWITCH and the LA process.
7. Is information being gathered (hard copy and electronic documents etc) and collated in an accessible way?

Not yet, but there is awareness for the need for this and initial steps to improve the infrastructure and mechanisms to make this happen are being taken. It is too early to assess the extent to which information will be made easily accessible. Though one partner, Lodz Na Fali, clearly aims at participation, sharing, accessibility (though with a strong focus on only digital webbased formats).

8. Is there sufficient local interest in SWITCH and the learning alliance approach (a critical mass of interested people to be involved, and a few who are really willing to drive process) to justify further efforts to develop a learning alliance?

Definitely. Local interest among most stakeholders seems very high and broad based indeed.

9. Has the host organization for running the learning alliance been identified, and do they have prior experience of similar activities?

Overall coordination (role) of SWITCH Lodz is likely to remain in the hands of the Dept. of Eco-Hydrology, though one wonders if this may actually shift to the new ERCE institute.

10. Has an appropriately skilled facilitator/ coordinator been identified to lead the learning alliance?

There is a clear awareness for the need to identify other players to take up various required roles in SWITCH Lodz, particularly 'facilitation' of the LA process and 'advocacy' to include fully the City Council and its various relevant departments. Initial ideas on whom to ask for both these roles have been discussed and will be followed up locally. Other roles maybe identified over time, such as (local) awareness raising and dissemination (using the media and other channels).

11. Have other support and resource needs been identified?

See elements of an answer above. Lodz SWITCH will need more time to specifically identify needs based on maturation of ideas of what actually will be done.

12. Is funding in place for the learning alliance (including availability of matching funds where needed)?

The impression is that the Lodz LA Platform can start with the resources available to each individual participant (person or organization). Since the facilitator has not been identified yet, nothing concrete can be said on required funding and/or possible sources.

13. Is the learning alliance action plan consistent with the work package description for the learning alliances (wp6.2) in the description of works?

Under construction, a plan will follow in the coming weeks.

14. Have the immediate next steps (follow up action) to progress establishment of the learning alliance been identified and roles and responsibilities agreed?

Yes, see details in this report and its annexes.

15. Any other issues?

See remainder of this report.

World Café

Group work during Lodz SWITCH workshop: “Lodz SWITCH café”

Method: world café (see www.theworldcafe.com includes downloadable guidelines)

Summary of method:

- Three tables with fixed hosts, with large table sheet and markers
- People join one of the tables
- Discuss and document question 1, move
- Discuss and document question 2, move
- Discuss and document question 3, move
- Hosts prepare presentation with assistants
- Plenary presentations (photos of sheets)

Metaplan

Visualization method using 1/3 A4 cards and markers to allow all participants to contribute and share in a ‘safe / confidential’ way their true thoughts about key questions.

In plenary participants are given a question and ask to write down their answer on one (or more) cards following these rules:

1. write clearly
2. only one thought per card
3. use key words
4. not more than 3 lines of text on each card

Cards are collected and anonymously presented on a board by the facilitator. Contributions are checked on clarity, but anyone can help clarify the card, not necessarily the author.

#	Full Name	Organization / position	Possible role in SWITCH	Email / phone / www.
1	Anita Waack	Department of Infrastructure The Office of the City Łódź / Head of Subdepartment		infrastruktura@uml.lodz.pl +48 42 638 49 95 www.uml.lodz.pl
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Ecological policy for the city of Lodz, Local Agenda 21, Lodz City Office, 1997

Lodz na Fali, Stowarzyszenie, presentation + CDRom, website

Pictures on http://www.flickr.com/photos/bury_irc/tags/lodz/

SWITCH website <http://www.switchurbanwater.eu/>

Relevant bookmarks <http://del.icio.us/pjbury/SWITCH%2BLodz>

Raport O Stanie Srodowiska, Lodz 2005 (environment report)



SWITCH

Annex 9 Notes during visit



Raw Lodz notes taken by Peter J. Bury

SUNDAY

- dinner with Macief, Iwono, Zibby and UK David: skiing. Fairly sector specialist. Macief seems to have high level contacts

MONDAY

Boat on waves / Lodz na fali: would you like associations. young org. dissatisfaction of city, enthuse citizens, little involvement, tools: internet site, 2morrow present, internet forum, many people leave, specialise in km & sharing, networking, in LA they can facilitate, in minds first, quality of life, 16 people virtually, different background, lawyer, bank, work with schools, schools have internet. Money is not an issue. Relation with gov: museum of modern art. They lobby, 100 registered users, growing on voluntary contributions. Talks on LA facilitation ongoing. Christof & ... plan to share tasks in groups. T-shirt please don't smoke.

mentions: poor people, poor building, social issues.

Issues Lodz: water, miss river only ponds in Parks. Give river to citizens.

LA's: opportunity to learn on this an involve specialists. Want to learn from outside: wider perspective. Benefit for na Fali.

Manufaktura with fontein.

People start dreaming.

Water conservation not in conscience of people.

Water from tap is not drunk.

Water is not expensive

Monika likes documenting

COUNCIL

EPA - Jamuz Burchard, dir.

Lady : Parks & rivers

Some what chaotic meeting

Report on state of environment incl. maps 2005

Sustainability is on nat. framework for envir.

200 wells sub artesian needs pumping

Ms Zalewska Kontowicz

Lots of groundwater

Modelling: problems seem clear

Storm water: villages flood

2 catchment (watershed) areas: splits city

Problems: water is getting better: less industry, better treatment. Air quality is issue: coal: create green space. So if I were politician ...

Development of sewerage system. EU funding for this.

REGION INSPECTORATE - Environment - quality of bulk water

Andrzej Drozdzyk

- not aware of SWITCH

- water is drinkable

- groundwater protection



- Bacterial by health
- Hydraulogy does volume
- Lodz is upland with more rain
- working together is limited
- trends: not well known
- risk assessment (e.g. drinking water assessment framework) tools: EU standards, income low: offices understaffed, little money.
- 4 branches. 180 person. Lab. 60. Mon. 20. Inspect. 60.
- 8000000Z budget + envir. fund.
- Fines income: none
- Out of SWITCH: exchange of info, learn of each other.
- Information of met. instit. (nat.) must be paid and are late.
- Little or no modeling, no resources
- 5 yrs rolling monitoring plan.
- Have a website: www.wfosigw.lodz.pl

SEWAGE PLANT

- dep.dir. & tech.
- owned city, 90% from city
- collab with tech.univ. foreseen but not yet
- EU funds
- not finished, once done capacity covers future
- On Ner river
- Sludge: burned by 2009 not for energy, willow plantation too small, heavy metals problem, inflow needs to be stopped. Biogas for electric for plant.
- Funding: water company is paying, from own income. Profit: to city. Started 74. Secondary treatment. 95% of Lodz sewage is collected.

TUESDAY

- 24 people of whom 12 female
- dynamics
- good support
- most verbal short pres.
- na Fali nice ppt (share wsite + saas)
- check vbulletin platform : commercial
- internet connection failed
- Maciej did join
- Envir Region. ppt. presentation
- Language: we cannot follow, some sync translation & recording
- Several present from CD/DVD
- Get copy of Lodz ppt. by Iwona
- LA presentation takes time: 25 min
- Q&A:
- LA an opportunity : good, invites city to join
- resources: e.g. Birming & agenda 21
- involve higher levels
- good: decision takes time, but good also from council
- involve head of city
- infra good: narrow TOR: open this up
- Scenario planning: as next step



SWITCH

- LA money from SWITCH training budget, Kala in IHE.
- Lodz needs support
- CoP on LA
- Local resources for LA from council
- Tech Univ guy does modeling
- Lodz webpage: maybe piggy-bag on na Fali
- report in E & PL
- Report by Tue 6/6



WEDNESDAY

- ERCE opening
- President of Lodz mentions Renaturalization of river
- people want aquapark
- Lodz: from small to big boat
- a river is called 'small boat'
- Lodz 18 rivers: underground



Scoping Report Tel Aviv

30 July – 3 August 2006

Prepared by:

Peter van der Steen
Avner Adin
Avi Aharoni
Haim Cikurel
Patrick Bettane
Kala Vairavamoorthy



Note: The instructions for the scoping exercise are included in this report: in black.
All additions are in blue.

3.2.1 Action plan for establishment of learning alliance

5

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Briefing note for scoping visits

Scoping visits are planned as an initial activity of work package 6.2 (learning alliances). The objective is to provide the basis for establishment of city learning alliances in each SWITCH city. Learning alliances provide the main mechanism to link work packages in an integrated approach to research, and to ensure that innovations have the best chance of being scaled up.

Each visit will involve joint work between the (interim) city coordinator, a member of the learning alliance support team (IRC and University of Greenwich at the moment) providing backstopping support, city stakeholders, and where possible, other members of the SWITCH consortium and a representative of the SWITCH central management unit.

The interactions with city stakeholders during these visits may be in the form of face-to-face meetings, a small workshop or a combination of methods. Lodz for example are planning a repeat of the open space exercise from the start up workshop. Such meetings should be organized, and the agenda set, by the city coordinator.

The outputs of this joint work should be:

- 1) a complete and improved initial city level scoping reports (early drafts of these reports were discussed at the start up workshop for most cities) by filling gaps based upon discussions with city stakeholders. This report is the responsibility of the city coordinator, and should follow the template that was provided. This report provides a basis for ensuring: we know about the main urban water management problems in each city, that we know who the key stakeholders are, that we have identified potential for SWITCH workpackages to respond to city needs, and finally that we start to collate relevant information in an accessible way.
- 2) an action plan (with budgets and where possible identified sources of financing) for the establishment of a city learning alliances. This plan is also the responsibility of the city coordinator, and will build upon the work done in learning alliance sessions at the start up workshop. A template for preparation of the action plan is attached to this note.
- 3) an interim/ visit report summarizing progress made in the city towards establishment of a SWITCH learning alliance. This report is the responsibility of the learning alliance support team member. A checklist for preparation of this report is attached to this note.

In addition,

- Prior to each visit, the learning alliance support team member should ensure that they are familiar with the description of work in order to have a good understanding of what is already planned in the city (awaiting template from IHE to collate this information)
- A 2-page briefing note summarizing the learning alliances (in a shorter form than the background paper circulated at the start-up workshop) will be circulated shortly.

John Butterworth & Mike Morris (18 May 2006)

Please note: Please read the existing plan for work package 6.2 (in the description of work) and use this as a basis for planning activities. For example, you should include a research and demonstration needs assessment as activities unless you have a good reason for not doing these!

Objectives:

Longer term: What does the learning alliance hope to achieve in this city in the longer term? What are the specific changes in policy (specify) and implementation (by whom?) to be achieved over the longer term (e.g. 5 years +)

The objectives formulated by Mekorot, HUJI and UNESCO-IHE during the scoping exercise are as listed below. These are preliminary objectives that will be discussed and possibly be adjusted during the first LA meeting.

The LA in Tel Aviv wants to have achieved the following at the end of the project:

- Relevant research results of the entire SWITCH project (i.e. not only those achieved by the research conducted in Tel Aviv) are in the process of being implemented in Tel Aviv. For this to be achieved, in the early stages of the project the TA LA will be exposed to planned research and innovations in the entire project. During the project direct communication links between the TA LA and the researchers in other demo cities and demo sites will be established.
- The SWITCH approach to urban water management (i.e. holistic management of the urban water system, based on integration of sustainability and risk indicators in decision making and planning, achieved by joint learning and planning by the stakeholders) is adopted by the stakeholders in TA. Ideally, a key institution like the new Water Authority will adopt the SWITCH approach (may take more than 5 years, possibly 10)
- The TA LA ('the Club') will develop into a council of experts and stakeholders that will be consulted by the water sector institutions. The club will show leadership in urban water management.
- At the conclusion of the SWITCH projects a number of follow-up projects have been identified and funding by water sector institutions in Israel has been assured.

Shorter term: How will members of the learning alliance work and learn in different ways over the shorter term (within 1-3 years)?

The objectives at the shorter term (within 1-3 years) are as follows:

- The LA TA has been exposed to all planned research and innovations in the project. The LA has defined which research (which workpackage) is relevant for Tel Aviv. Working relations between TA stakeholders and those workpackage coordinators is

established. Plans for implementation of research results in Tel Aviv have been formulated.

- The discussions in the LA have evolved into a number (3) of possible future scenario's for urban water management in Tel Aviv. These scenario's are subject to analysis by researchers working in Theme 1.
- A system is in place for exchange of data (research results) between TA LA members, as well as with the wider consortium (data is collected, shared and available)
- Working relations have been established with the two institutions in Tel Aviv that are working on the development of sustainability indicators (Water Commision and the Strategic and Long-Term Planning unit in the City Engineer's Office). SWITCH is invited to be involved in the inclusion of indicators (sustainability, risk) in decision making.

Outputs and activities:

Describe the intended outputs and activities of the learning alliance. The following headings are suggested for you to group these outputs/ activities. In the plan also indicate the frequency/ level of intensity of major activities.

- Baseline studies
 - Studies of existing institutional arrangements

An organogram will be developed, which indicates the responsibilities of all relevant institutions as well as their interrelations. The responsibilities of the most important institutions are described in Annex 3.

- Problems/ research needs identification
- A first inventory among stakeholders has identified the research needs as follows: Theme 1,2, and 3, maybe 4.1, 5.1, 5.3 and 6.2. The first meeting of the LA will address this in more detail. See also Annex 5.
- It is likely that reuse of effluent inside the city for urban landscaping or other uses will increase. Research about the associated public health risks is required.
- There is a threat of malicious contamination of the water distribution system. Research about 'water security' is required. The PhD research of Patrick Bettane (supervised by Kala Vairavamoorthy) will address this issue.
- Scoping of existing knowledge and initiatives
- A very important initiative for the project in Tel Aviv is the 'The city strategic plan for Tel Aviv Yafo'. This plan formulates the vision for the future development of the city in relation to all main issues faced by the city. The plan is based on extensive stakeholder consultation.
(<http://www.tel-aviv.gov.il/English/engineering/strategy/index.htm>)

- Another important initiative is the establishment of the new Water Authority. The reason for this new body is that in the past decision making procedures for major infrastructure projects took too long (14 years for the eastern wastewater collection pipeline). The Water Authority is meant to oversee all water related issues and will have far reaching authority to make decisions. The board of the Water Authority will have representatives of a number of relevant ministries and other water sector institutions.
- See also annex 3 with the summaries of all interviews
- Action research (pilot projects)
 - Trying new methods of working (e.g. in broader partnerships)

Apart from the LA method itself, no new methods have been identified.

- Testing new technologies

As detailed in the Description of Work, the research in Tel Aviv includes testing of new technologies for Soil Aquifer Treatment of secondary effluents, for unrestricted irrigation (wp 3.2). In addition research is planned on electro-flocculation applied to secondary effluent and polishing in constructed wetlands (WP 3.3)

Other initiatives to test or use at full scale outside the SWITCH project are:

- Mekorot is involved in a number of other EC research projects (TECHNEAU and RECLAIM in FP6, AQUAREC in FP5) where new technologies for effluent reuse will be developed.
- The Dan Region Association of Towns is about to start construction of a ‘green’ office building. Energy and water saving technologies will be applied in this building. Possibly links could be made with WP 4.1 or 5.1.
- Modelling of the water distribution system for Tel Aviv is currently carried out by researchers from the Technion (dr. Avi Ostfeld). Links could be developed with Theme 1 (PhD fellow Bettane on ‘water security’ as well as more general with wp 1.1 or wp 1.2).
- Information and communication (sharing information)

Information and communication within the TA LA will be by various means:

- The ‘club’ meetings once every 6 months, with a duration of half a day.
- After the club has been established, sharing information with other LA’s will be established, for instance by video conferencing. Links are especially interesting with those LA’s that are dealing with similar issues as in Tel Aviv, like water scarcity in Saragossa or Beijing)

- A section (up to 2 pages) in the monthly magazine of the Israeli Water Association will be dedicated to the SWITCH project. Plans for and results of research will be published, as well as the future scenario's (see objectives) and reports on LA meetings.
- The section on Tel Aviv on the SWITCH intranet will be developed. Initially the ppt presentations prepared by Mekorot for the scoping visit will be posted there as well as a link to the website of the Strategic Plan for Tel Aviv. The monthly 2 pager published in the IWA magazine will be posted there as well. The website will contain documents in Hebrew as well as in English.
- There is no need for an electronic discussion form. Both Mekorot and HUJI are sure that such a system would not be used by the LA members.
- Special attention will be paid to communications about the project to young water professionals. Means to involve this group in the LA will be developed. Background of this action is the decreasing numbers of students choosing a career in the water sector, while the need for this expertise is stable or even increasing.
- Mekorot and HUJI suggest to have the Scientific Meeting planned for February 2006 in Tel Aviv, possibly in cooperation with the International Conference in Tel Aviv-Yafo on Strategic Urban Planning and Management for Sustainable Development (19-22 February 2007). Exchange of experiences between the TA LA and LA's from other cities will greatly benefit all.
- Therefore attempts will be made to bring in key partners of the TA LA as participants in the workshop on 'Sustainability Indicators and Decision Making' organised by Theme 1 in December (preliminary date 11-12). Key partners of TA LA are those that are already involved in developing sustainability indicators: Water Commission and TA Municipality.
- Process documentation will take place by preparing short reports in English on the LA meetings. Each meeting will focus on a specific topic. Objective of the meeting is to reach consensus on the topic that is under discussion. Presentations will be posted on the website.
- The impact of the LA will be evaluated by the following indicators:
 - The status of the Club will be measured by the extent to which it is consulted by planners and decision makers.
 - The number of people that will continue to attend meetings.
 - Whether there will be other groups that would like to join the Club.
 - The extent of feedback to the published material.

Budget

The work required for the LA translates to salary costs for the facilitator. Required input by the facilitator is estimated to be 0.5 day per week. Salary costs are estimated to be 6000 euro per year. Funding for the facilitator for the first two years are requested from the SWITCH project (on top of funds already allocated to TA partners). During those two years the LA should prove that it is beneficial for the stakeholders. If enough interest in



the 'Club' is gained the stakeholders could then finance the facilitation after year 2 till the end of the project and beyond.

Office facilities for the facilitator will be provided by HUJI (in kind contribution). Organisation costs in relation to the Club meetings amount to euro 5.000

Team

Co-ordinator for the LA is Avner Adin (Hebrew University). Deputy Coordinator is Avi Aaharoni (Mekorot). Tasks of the coordinators are 1) communication with SWITCH Central Management Unit, 2) preparation of the content of the club meetings 3) chairing the club meetings 4) the content of the publications in the IWA magazine.

The Facilitator is Avital Dror-Ehre (MSc Environmental Biotechnology, 14,000 PE WWTP manager and chairing the IWA Training/Education Forum). The tasks of the facilitator are: 1) assisting the coordinator, 2) communication with the LA members 3) logistics for the LA meetings 4) logistics in relation to the publications in the IWA magazine 5) feeding the SWITCH website (via Erik Siepman).

As mentioned above, if the alliance will be successful the facilitator could be funded by the stakeholders after year 2. Office space will be provided by HUJI.

Workplan for next 6 months

Timing	Action	Responsible
20 th of August	Formal appointment of facilitator (Avital Dror-Ehre)	Avner Adin
September	All learning alliances members receive username/password for the extranet	Erik Siepman
September	CMU sends to LA coordinator a two page summary for each theme as well as a general presentation to be used to present SWITCH on first club meeting	Erik Siepman
September/October	Article on SWITCH in IWA magazine (September or October issue)	Avner Adin
September	Funding for facilitator to be discussed during MT meeting	Avner Adin
2-6 October	the facilitator receives training in Delft on LA facilitation	John Butterworth
First week of November	First club meeting. Output of the meeting: Workpackages that are most relevant to Tel Aviv will be identified.	Avner Adin
November	a ppt presentation on SWITCH activities in Tel Aviv will be prepared, posted on the public website and distributed to all consortium members.	Avner Adin

December 11-12 (prelim date)	a 2 day workshop on Sustainability and Risk Indicators for Decision Making (Theme 1)	Peter van der Steen
January	The TA LA will send a research needs identification report (shopping list) to the CMU.	Avner Adin
February	During the Scientific Meeting working relations between the TA LA and the work packages will be established. Plans will be developed for implementation of results in Tel Aviv.	Carol Howe

Annex 1 [Tel -Aviv meeting program of SWITCH partners \(30/7/06 -3/8/06\)](#)

Sunday, July 30

09:00 - 12:30 : Shafdan wastewater reclamation and reuse sites, discussion on the R&D projects at Shafdan - Nelly Tal plant director, and Tomer Kreitzer plant engineer
 13:30 – 14:30 : Lunch in Dan Panorama Hotel
 14:30 - 17:00 : Dan Panorama Hotel manager - Esti Keinan – December Conference discussion + Discussion on the targets of the Learning Alliance

Monday, July 31

8.00 - 10.00 : Environmental Health - Tel-Aviv and Central Regions at Tel-Aviv MoH Office - Valerie Pohoryles, Eti Burla, Shalom Goldberger from Ministry of Health
 10.00 – 12.00 : Israeli Water Association at Tel-Aviv, near MoH - Avital Dror-Ehre, Avner Adin from IWA
 12.00 – 1400 : Lunch and travel to Ramat Hasharon WWTP
 14:00 - 16:30 : Israeli Water Works Association at Ramat-Hasharon WWTP - Shabtai Glass, Moti Feldlite from IWWA

Tuesday, August 1

8:30 – 10:00 : Ministry of Interior Central District Regional Committee for Urban Planning, at Mekorot Head offices - David Pick and Ehud Leshem from the Ministry of Interior
 10:00 -11.30 : Moshavei Ha Negev, Negev Region Farmers Association at the Mekorot Head offices - Ilan Peretz, general manager, Moshavei Hanegev
 11.300 – Lunch
 After noon : Free time

Wednesday, August 2

8.00 – 9.00 : Meeting at Mekorot Head offices -Avi Migemi – Director of Water Management Division in Mekorot
 10:00 – 12:00 : Dan Region Association of Towns, Tel-Aviv -Etai Pinkas, Chairman and Eng. Alex Margolin , General Manager - Dan Region Association of Towns for Sewage and Environmental Quality
 12:00 – 14:00 Lunch
 14:00 – 17:00 The Municipality of Tel Aviv, Water, wastewater and Drainage Department, at Tel-Aviv - Eng. David Jackman Director of the department



Thursday, August 3

8.30 – 9.30 : Field trip on constracion site of the main Eastern wastewater pipe of the DRAT

10:00 – 12:00 : Ministry of National Infrastructures, Water Commission offices in Tel Aviv - Mo Provizor, Strategic Planning Director

12:00 – 14:00 Lunch

14:00 – 17:00 Closing meeting with all SWITCH partners at Dan Panorama Hotel, Tel Aviv

Annex 2 List of people met (future LA members)

Title	First Name	Family name	Organisation	Position	email
Partners					
Prof.	Avner	Adin	Hebrew University	Head Water Treatment Technology	adin@vms.huji.ac.il
MSc	Avi	Aharoni	Mekorot	Head of Waste Water Treatment & Effluent Reuse Department	aaharoni@mekorot.co.il
	Patrick	Bettane	Hebrew University	PhD student	patrickb@bezeqint.net
BSc PhD	Haim	Cikurel	Consultant (Mekorot)		chikurel@netvision.net.il
MSc	Avital	Dror-Ehre	Israeli Water Association/Hebrew University	LA facilitator/ PhD student	avitald@raanana.muni.il
MSc	Nelly	Icekson-Tal	Mekorot	Manager Dan Region Sewage Disposal & Reclamation Plant	ntal@mekorot.co.il
Dr.	Bracha	Limoni-Relis	Mekorot	Director of Water Quality Division	breliis@mekorot.co.il
	Avi	Migemi	Mekorot	Director of Water Resources Department	amigemi@mekorot.co.il
Learning Alliance Members					
MSc	Mordehay	Feldlite	Israel Water Works Association		
	Tami	Gavrieli	Municipality of Tel Aviv/City Engineer's Office	Director Strategic and Long-Term Planning	gavriely@tel-aviv.gov.il
Eng.	David	Jackman	Tel Aviv Yafo Water Corporation	General Manager	jackman@tel-aviv.gov.il
	Ehud	Leshem	Ministry of Interior		ehud.leshem@gmail.com
BSc	Alex	Margolin	Dan Region Association of Towns for Environmental Issues and Sewage	CEO	alex-m@egodan.org.il
	Ilan	Peretz	Negev Region Farmers Association	General Manager	ilan-ngv@barak.net.il
	David	Pick	Ministry of Interior		davidp@moin.gov.il
	Etai J.	Pinkas	Dan Region Association of Towns for Environmental Issues and Sewage	Chairman	pinkas@egodan.org.il
Eng.MSc	Valerie	Pohoryles	Ministry of Health	Head of Environmental Health Dept.	valerie.pohoryles@telaviv.health.gov.il
MBA, BSc	Mo	Provizor	Water Commission/ Mol	Director Water Planning Division	mop10@water.gov.il
BSc	Yuval	Sela	Dan Region Association of Towns for Environmental Issues and Sewage	Operations Engineer	yuval@egodan.org.il
	Aharon	Vardi	Water Commission/ Mol	Director of Water Security Department	aharonv10@water.gov.il

Annex 3 Initial city level scoping -TEL AVIV city draft template

This task relates to Work package 6.2 Learning alliances, Task 1b Scoping at city level. See page 261 of the SWITCH description of work

Objectives

SWITCH aims to achieve integrated – more efficient, more equitable, more sustainable - urban water management. Given the complex environments of our cities, SWITCH recognises that this can only be achieved through joint learning and changes in policy and practice made by multiple stakeholders. Learning alliances are the approach we have adopted to facilitate such changes.

The objective of this scoping exercise is to identify: key organisations and initiatives related to urban water management in each demonstration city, the main problems faced by the city, and potential champions (people with influence and interest) for SWITCH activities on integrated urban water management.

It is intended that the scoping will be used to inform partnership development and detailed planning of the SWITCH project during the inception phase. It is only an initial step in learning alliance development and the scoping is not a full stakeholder analysis. The initial city level scoping is a rapid exercise to be completed by 31 March providing key but provisional knowledge on each city prior to the start-up workshop. The results will also be used to plan visits to all the SWITCH demonstration cities in May/ June 2006.

A full stakeholder analysis and a full city research needs assessment will be undertaken later in the inception phase after learning alliance teams are in place in each demonstration city.

SWITCH will need to build and foster relationships with the following stakeholder types:

- Key organisations responsible for water management in each demonstration city. These include organisations who make decisions or effect changes in policy and practice (e.g. policy analysts and advisors, policy makers, municipal/local government personnel (political & bureaucratic), service providers (public, private & voluntary, regulatory authorities etc);
- People with influence with decision-makers directly (e.g. members of parliament, private sector companies);
- Civil society organisations and individuals who can bring pressure to bear on decision-makers (e.g. NGOs, unions, professional associations etc);
- Water user groups (e.g. consumer groups, irrigation groups etc);
- Local ‘leading lights’ (activists or champions) working to address poverty, gender, environmental issues etc;
- Those who can support, reinforce and strengthen SWITCH’s activities and recommendations (e.g. training and research organisations, financial organisations etc);
- Those in the media who provide a means by which the learning alliance can reach the public; and
- The donor community, who can further finance and support SWITCH’s activities.

Completion of this task will probably involve 2-3 days input, including short informal meetings with as many of these types of stakeholders as possible.

Part 1. Summary information

Please include a summary of key organisations, their mandate, roles and activities, and all problems and/or opportunities articulated that may be relevant to SWITCH. The work packages (as listed in the description of work) should be used as a check list to identify issues covered by SWITCH. Remember, the aim at this stage is to scope key organisations, identifying as many important issues as possible but not as yet to prioritise them. This will be done later.

Together with this summary information, partners are encouraged to keep more detailed records of meetings (i.e. travel reports, meeting minutes) and to collect any relevant documents from stakeholders. These will be useful later.

<i>Key organisations (type)</i>	<i>Mandate, roles & activities</i>	<i>Problems and opportunities articulated by this organisation</i>
Ministry of Interior, Central District Regional Committee for Urban Planning	<p>Responsible for all the issuing of permits for infrastructure (roads, sewer, natural gas, city-trains, intercity trains, public area building like schools and parks..) plans in the T.A. region (1.7 million population) and regional urban planning. The total area that the office is in charge is from Gedera to Hedera (4 million population).</p> <p>Their mandate is the responsibility on all planning performed by the Ministry of Interior. They are the professional body of the Regional Committee and they have a strong influence on the decisions of the committee. The director of the Committee is also the chief administrator of the Region for the Ministry of Interior.</p> <p>The Dan Region WWTP and part of the source for the drinking water for the city of Tel –Aviv is under their jurisdiction and control. 40%of the water for T.A. is coming from underground water and the rest is coming from National Water Carrier operated by Mekorot. Almost all the water is produced and treated and supplied to the city by Mekorot (small amounts of wells are maintained by the city itself)..</p> <p>The Dan Region area and the area where the collecting system for the wastewater to the Dan Region are located (250 hectare) under this committee's jurisdiction. They work under the mandate given to them by two laws: The Water Law (1951) – all water sources, and the Wastewater Law (1962). They supervise the different development programs to see if they do not endanger the water sources (safety radiuses). When plans for effluent irrigation plans are presented to them they check if the irrigation is not</p>	<p>Positive examples of their activities:</p> <ol style="list-style-type: none"> 1. One of main achievements of the government is the collection of all regional governmental offices under one building in each regional capital (Government offices compound) this eases the communication between different governmental offices and decisions are more quickly taken and permits issued. 2. The government created a national committee who deals with objections raised by public organisations or other governmental bodies to regional projects. Each project is publicly discussed and objections can be raised within 60 days of the publication. If a project is delayed due to the objections for a long time, this committee tries to mediate and relieve the impasse. <p>Problems:</p> <ol style="list-style-type: none"> 1. One of the main problems is still the diffusion of the decision power between too many governmental bodies. The best example for this is that the construction of the East wastewater pipe- line carrying wastewater to the Dan Region WWTP took 14 years. In the mean -time due to high flow of wastewater (more p.e. during the years) and lack of effective storm water separation in the winter the "Reading –Rishon pipe line" collapsed. <p>The East wastewater pipe – line: One of the two new collector pipe-lines that collect the east bound cities and the other one (Ayalon pipe-line) collects the north bound cities to Shafdan which is situated in the south of T.A. These are besides the original and oldest collector pipe-line (the Reading –Rishon pipe line) that does not have enough capacity even for the actual wastewater flow. The Ministry of Interior is one of the governmental offices in charge of ratifying the planning of such new projects.</p> <ol style="list-style-type: none"> 2. The multi-annual planning for all

	<p>performed within safe distance from water sources or drinking water pipe-line. This body not only ratify development plans but also takes initiatives.</p>	<p>infrastructures is made based on statistical population data from the State Statistics Institute (which is up-dated every 10 -11 years) although the Ministry of Interior has a very accurate on-line record of the population</p> <ol style="list-style-type: none"> 3. Incineration of Secondary sludge from the Dan region WWTP. The sludge today is being pumped to the deep-sea, but its removal will prevent local pollution of the sea and keep a near-by desalination plant from pollution. The building of such a system has been technically adopted but the Green movement is strongly opposed to such a possibility. Recently new risk analysis work has been performed to show that the risk is minimum. This is still being discussed, and development plans are waiting the necessary permits. 4. Plans for treatment of gray water are still not being applied due to different governmental offices objections although the benefit is known and a lot of developed countries have started to apply these plans.
<p>The city of Tel-Aviv (T.A.) Water, wastewater and drainage department</p>	<p>Supply of drinking water to the city. Disposal of wastewater. Responsible for the drainage of storm water together with the Yarkon River drainage authority. The sewer system in the city is connected to the regional sewage collection system of the Dan Region Association of towns. Drinking water: 90% or 45 MCMY is supplied by Mekorot to the city who cares for the quality, another 10% of the supply is by local wells and disinfection of the water by the city. In the 1950's most of the city's supply was from local wells only but due to excessive salinity and industrial pollution only 9 wells out of 80 are active. The quality of the water is monitored by the municipality using outside laboratories. This is besides the analyses by the Ministry of Health. The other activities are: Collection of wastewater by pipe-line system and pumping to the Dan Region Association of Towns central pipe-line (Reading-Rishon) to the WWTP. Drainage of rain - water. Monitoring of the consumption of the water and production of wastewater by citizens. Collection of taxes for drinking water consumption and wastewater collection taxes.</p>	<p>Problems: Leakage control, replacement of old piping., seasonal (winter) flooding problems. The number of staff for the municipality constantly in decrease.</p>
<p>Dan Region Association of Towns</p>	<p>The Dan region Association of Towns is a Non-Profit Organization that actually includes the 7 original municipalities (in the 1950's) and other municipalities that receive the services making on the total 24 municipalities for 2 million p.e.</p>	<p>Positive examples of their activities:</p> <ol style="list-style-type: none"> 1. Starting from the 1970's the Associations' department for the control of industrial pollution sources has succeeded to considerably decrease the pollution of wastewater from industrial sources (which is almost 10% of the

	<p>The main service is the collection and transport of wastewater to the Dan Region WWTP, treatment of the wastes and handing the effluents to Mekorot for further tertiary treatment and reuse in the south. In Tel Aviv city there are 470000 citizens while during the day more than one million citizens. The other duties of the Association is also to supervise the sources of wastewater that are conveyed to the WWTP by a special department who visits industrial plants or other sources of wastewater besides the households and prevents pollution at the source. The Association has also established an oil and grease collection and treatment system and a salt separation and sea disposal system. Both help improve the quality of the wastewater that is conveyed to the WWTP. They also treat the sludge from the WWTP. All the big projects are planned and performed by outside sourcing. The routine maintenance is in-house.</p>	<p>total wastewater flow). The oil separation and treatment program, the salt separation program and successful monitoring of heavy metal sources have been effective.</p> <p>Future development plans:</p> <ol style="list-style-type: none"> 1. The East wastewater collection pipe-line which is finally under construction will connect another 500000 p.e. to the Dan Region WWTP. 2. The North wastewater collection pipe-line "Ayalon" is being planned and finance sources are sought. 3. Development of the Dan Region WWTP will be accordingly, but it has enough capacity for both new collector pipe-lines wastewater. 4. Operation of a primary treatment unit in the WWTP (till 2030). 5. Operation of the sludge treatment system. From 2010 no sludge from the WWTP will be disposed to the sea. These days the sludge filtration stage is starting to be constructed. As a second stage, the opted process is incineration instead of composting (will leave excess compost). But the whole project has still opposition by the Green movement. 6. Combined sewer and flood water systems. Where the storm water will be separated and sent to the river after proper filtration. 7. Improvement of individual homes rain water separation systems. Financial support is given. Low quality effluent storage reservoir construction. Today, in case of a malfunction in the WWTP the effluents are not sent to the SAT but to the river and then to the sea. The 500,000 m³ reservoir will enable these effluents to be further treated.
<p>Moshavei Ha Negev (Negev Region farmers association), end users of the reclaimed water, private company</p>	<p>The biggest agricultural company in Israel. They culture 15000 hectares of land and use 24 MCMY of water of different qualities (effluents, drinking water, salty water, desalinated water...). The main crop is wheat (7000 hectare crop, 600 hectare for seeds), also pees, 1000 hectare, 1000 hectare water-melon, 1000 hectare potatoes (they grow three times more since they have reclaimed water) and different other crops.</p> <p>Mekorot through the Dan Region Project (SAT treated water – the Third Line) supplies 13 MCMY. 7-8 MCMY comes from the secondary effluents of the Beer-Sheba WWTP, 2-3 MCMY are from fresh water supplied by Mekorot and another 1 MCMY are from self sources. The new desalinated water from the Ashkelon plant will replace the fresh water.</p> <p>The secondary effluents from the Beersheba WWTP are planned to be up-graded to</p>	<p>They are satisfied with the Dan Region Project that gave life to the agriculture in this arid part of Israel (the irrigated areas where multiplied since the beginning of the Dan Region Project in 1989). Their relationship with Mekorot is good. No problems with the supply. They would like to get more reclaimed water (lately a 9% decrease was imposed to them by the Water Commissioner).</p> <p>Quality of the water - Some encountered problems in supply are due to the clogging of their pre-filters before irrigation by sand, algae (from the open reclaimed water reservoirs) and also the manganese that comes from the Third Line. The sand is filtered and there is filtration and chlorination to get rid of the algae. The problem of manganese originates from some wells in the Dan Project and then the soluble manganese in contact with air forms solid manganese dioxide and clogs their filters. Mekorot is closing the wells that contain high amounts of manganese and also applying other measures. The situation is much better lately.</p> <p>One of other objection is the high price of reclaimed</p>

	<p>tertiary quality by filtration and disinfection (around 11 MCMY) of tertiary effluents (conforming the Inbar Committee specification) will be supplied to different parts in the area.</p>	<p>Third line water (costs to them around 70% of the fresh water cost and they are not allowed to use more fresh water). The fresh water cost for them is 1.26 NSH/m³ (5.6 NSH= 1 EU) while the Third Line water costs 0.84 NSH/m³ and secondary effluents cost 0.57 NSH/m³. The cost of up-grading the effluents to the new Inbar committee tertiary effluents quality will be 0.15 SH/m³.</p> <p>The association will need more water in the future and that will come mainly from Desalination and up-graded secondary effluents (Beersheba WWTP and others) with some more addition from the Third line.</p>
Ministry of National Infra-structures, Water Commission	<p>The main regulatory body in Israel for the water supply and demand.</p> <p>Responsible for all water resources in the country. Each year they issue permits to produce water from different sources including desalination and reclaimed water and also issues quotas for the end-users that restrict the use of a specific type of water to the allocated quota.</p> <p>Their mandate is covered by the "Water Law". They supervise on "water quota" use by the help of the Hydrological Service and by proper monitoring.</p> <p>Demand management includes the farmers, the industries and even individual users.</p> <p>For the farmers the demand comes through the Ministry of Agriculture and the quotas are decided in common. After the 2000 drought, there was a constant decrease in the quotas for the agriculture (30% decrease compared to the situation in 1989). But the agriculture was not damaged. There is a Governmental decision to keep the agriculture and to let the farmers use 1160 MCMY of different water sources (fresh water only 530 MCMY).</p> <p>Out of it 30 MCMY will go to the Negev (see also above – today they use 24 MCMY).</p> <p>Other activities include prevention of water sources by monitoring, involvement in the desalination plans, monitoring of the hydrological changes in the region and also responsibility for the long-range Master planning of the water demand and supply in Israel. They use a lot of outside engineering help due to staff penury.</p> <p>All national water programs and Master plans have to be approved by the Commission and this is done by cooperation with concerned ministries. Also they are involved in "Water Governance" although it is not part of their original mandate. They mediate between different stakeholders (suppliers or users) to contribute to the</p>	<p>They have a major problem of lack of experienced staff and trained engineers. They are obliged to use out-sourcing and they would be very happy if there was more interest in Water Sciences and Engineering. Due to the relatively low salaries students prefer to choose high tech. and less environmental studies. Most of the future master plans for Water and wastewater are prepared by their engineers.</p> <p>The Commission is the major governmental body who pushed the decision to unit all concerned water related government offices under the State Water Authority (beginning 2007). The idea is to have a central body that will decide on all water and wastewater matters and this will prevent the non-efficiency of having a lot of offices having jurisdiction on the same water source. This body will include all concerned governmental offices and regional bodies and will be leaded by the actual Water Commissioner.</p> <p>Main future plans: The "2002-2010 plan" that has the purpose to ease the situation created in early 2000 by adding 315 MCMY of desalinated water to the water balance and also add more reused effluents (up to 500 MCMY in 2010). The main desalination plants that will be operative till 2010 are: Ashkelon (100 MCMY), Palmahim (30 MCMY), Hedera (100 MCMY), Shomrat (30 MCMY) and Ashdod (45 MCMY). The state gives 60% grants the rest is private. There is a problem in part of these projects. For example in Ashdod Mekorot is ready to start the project (and even created, as required, a separate company Yizum that will be in charge of the development plans) but still the Finance Ministry is not releasing the necessary funds (the foot-print of the Ashdod plant is small and this will make the water production more expensive..).</p> <p>Long range strategic planning to 2040 will deal with 10 different water related subjects. The Master plans for that are prepared by the Commission in-house.</p>

	<p>successful management of water sources of a given region.</p> <p>The cooperation at the municipal level is good. Each municipality through their engineering department prepares their Master plans and they are assisted by the Commissions' engineers. Also in the technical discussions with other government offices on these plans they have a major influence. The Commission can influence on the decision to allocate grants to the municipalities by the Water Authority of the specific region.</p>	
IWA – Israeli Water Association	<p>The Israeli Water Association is an NGO with members from all sectors of water and wastewater. The association has members from different affiliations such as design, management, operation, industries, economy, law, education and government authorities. The management of the Association consists of a multi disciplinary team of high-level professionals in the areas of water and wastewater, who have volunteered their time and expertise to advance water issues in Israel and world wide. One of our prime goals is to increase know-how and awareness of the public as well as the professional community and policy makers on water and wastewater issues. Additional goals are training and updating, updated the members about novel technologies, legislation and relationships with international professional organizations.</p>	<p>Water is a scarce commodity in Israel and must be managed with great care including minimizing water loss, use of marginal waters with advanced treatment technologies, maximizing wastewater effluent reuse and minimizing potential contamination of existing water resources. Professional expertise is required to ensure proper management. IWA's unique position as Israel's leader in providing conferences, courses and seminars on water and wastewater issues for the professional water sector grants a golden opportunity and platform for disseminating the outcome of the various work packages.</p>
Ministry of Health, environmental Health Dept., Central District and Tel-Aviv Region	<p><u>Role:</u> The Ministry of Health is divided in to 7 districts throughout Israel and all report to the main office. They also have 4 regional labs. And one central lab. (Tel-Aviv). Each district has a district office under the management of the District Physician (doctor). The Ministry of health has in each District Office the following departments: Food, pharmaceutical, teeth health, geriatric, psychiatric, epidemiologic, environmental health.. All offices are part of the public health services. In parallel there are the medical services which include the management of all hospitals in Israel. At the top there is the general manager and the responsible minister. The environmental health department is based on a chief engineer and 7 engineers as heads of the different districts.</p> <p><u>The mandate:</u> Their mandate is covered by the following laws and regulation:</p>	<p><u>Problems:</u> Safety radiuses for drinking water well drilling.</p> <p>Lack of suitable financial resources of the local government makes it harder to keep a good drinking water quality and pollution out of the drinking water wells.</p> <p>Old water and wastewater distribution system is taking too long and is not methodically done. The Tel-Aviv municipality wastewater distribution system is 30-40 years old and the pipe-line renewal rate is low.</p> <p>The maintenance level of the distribution system is not very high. All that can cause biofilm growth and microbial pollution in the distribution system and cause a higher chlorine demand. Also frequent leakages of wastewater distribution system in the drinking water aquifer areas can cause severe pollution. New master plan takes in to account the priority of drinking water aquifer areas for the distribution systems renewal.</p> <p>The Ministry of Health, Environmental Health department is responsible for a lot of functions but is a weak governmental body. Most of their decision making</p>

	<p>Public Health Order, Water Law, the law that requires a permit for businesses in the city, Safety Radius (meaning what is the safe radius for drinking water pipe-lines that no other water or chemical intrusion to the soil occurs and no other pipe-lines are present), Local Government Law, Sewer Law, Drinking water regulations, Swimming pools regulations, Effluent regulations (BOD 20/TSS 30) and Inbar Committee regulations, permit for irrigation with effluents, Back-flow prevention regulations. They also are the consulting body for all sewage related matters and also for the Regional Committee for Urban Planning.</p> <p><u>Activities:</u> Control of the drinking water quality and the water sources. Permits for drilling of wells (if they will be used for drinking purposes) through them. They have to ensure that contaminated wells are not used for drinking water. Although drilling permits are issued by The Water Commission. They perform environmental studies that show the Safety Radius areas and the quality of the water to be reclaimed. They perform bacteriological, chemical and hydrological monitoring of the drinking water. Analyses performed between once a week (bacteriology), to once in 6 years (complete analysis, while for surface water the maximum is every 3 years complete analysis). Ministerial responsibility on all Mekorot's water treatment plants. Monitoring of the surface water turbidity (average 1 NTU and up to 3 NTU), monitoring of the drinking water quality (up to 1 NTU turbidity and 50 (max. 70 mg/l) NO₃. The drinking water regulations are being lately revised (Adin Committee) and will be published soon.</p> <p>Other activities include issue of permits for water and wastewater systems in new building projects.</p> <p>The Central District of the Ministry of Health is responsible for all water sources for Tel Aviv and its surroundings. 10% of the water supply to Tel -Aviv is from self sources and the production and water supply to the city is monitored by the Ministry of Health. Bacteriological and chemical monitoring of the cities supplied water is their responsibility. Sampling is performed by the municipality and the Ministry of Health. The analysis is done in the Ministry of Health's labs. Monitoring of 18 water reservoirs in the city (cleaning and</p>	power has been transferred to the Water Commission.
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	<p>disinfection of the water in the reservoirs – once a year for ground water and twice a year for surface water). They are in charge of water treatment systems in the city (micro-organics removal, solvent removal – dichloroethylene as example). Stopping the pumping in certain polluted wells is their responsibility. Prevention of flow of pesticides tank wash water and fertilizer tanks washing to the water systems is their responsibility (Public Health Order, fertilizer dilution regulations, 1986). Also monitoring of effluent reuse regulations in the city for public gardening (1992) is their responsibility (0 Faecal Coli requirement). Other projects that they monitor are: Desalination system of the TA municipality, the quality in the flood water collection system of the municipality, monitoring of the WWTP effluent quality, SAT water quality, sludge incineration study (first time in Israel in the Dan Region)..</p>	
Water Workers Association		
Mekorot		
Hebrew University		
Add rows as required		

2. Background notes

Include here supporting notes on any key issues that may need further explanation.(see example from Alexandria).

Include reference to key documents in section 5, but here summarise any key issues to do with for example:

- Historical changes
- Poverty issues
- The cities water resources
- The cities ‘downstream waters’, surface or groundwater
- The cities masterplan on water, urban planning etc.
- The cities water treatment and piped distribution system; other means of water supply.
- The cities sewer system, use of on-site sanitation
- An overview of wastewater and sludge treatment capacity
- Institutional issues etc

3. Actions identified

Here please identify follow-up actions for SWITCH project colleagues focusing on where linkages might be improved between city needs and work packages. See Alexandria example for ideas.

<i>Work package</i>	<i>Action</i>	<i>Who</i>
Ministry of Interior, Central District Regional Committee for Urban Planning		
The city of Tel-Aviv (T.A.) Water, wastewater and drainage department		
Dan Region Association of Towns		
Moshavei Ha Negev (Negev Region farmers association), end users of the reclaimed water, private company		
Ministry of Infrastructures, Water Commission		
Israel Water Association Dissemination	Dissemination of the output and conclusions of the work packages through courses and seminars given by selected professional team to engineers, decision makers and middle management in the water and wastewater sector	IWA - Avital Dror-Ehre
<i>Add rows as required</i>		

4. Contacts:

Include contacts of key persons.

<i>Organisation</i>	<i>Names</i>	<i>Details</i>
Ministry of Interior, Central District Regional Council for Urban Planning	David Pick Responsible for programming main projects and issuing permits for construction in the field of water –waste water infrastructure, natural gas, city and inter-city trains..	Ministry of Interior, Kiryat Hamemshala (Government offices compound), Herzl St. 91 RAMLA 72430 ISRAEL davidp@moin.gov.il Tel; 97289788447; Cell phone: 972544641227
The city of Tel-Aviv (T.A.) Water, wastewater and drainage department	Eng. David Jackman Director of the department.	Water, wastewater and drainage department Tel Aviv municipality Philon 5 Tel Aviv Zip 64518 ISRAEL Tel:97235217336; Fax: 97235216812 Cell phone: 972522203539 jackman@tel-aviv.gov.il
City Engineer's office, Strategic & Long-Term Planning	Tami Gavrieli, Director	68 Ben –Gurion Ave Tel-Aviv, 64514, Israel Tel: 97235217057, Fax:97235217408 gavriely@tel-aviv.gov.il .
Dan Region Association of Towns	Etai Pinkas - Chairman Eng. Alex Margolin , general manager Eng. Yuval Sela, chief engineer	Dan Region Association of Towns POB 5183 Zip 61051 Tel Aviv ISRAEL Etai Pinkas 972524516444

		pinkas@egodan.org.il Alex Margolin Tel:97237914500- line 428 Yuval Sela Tel: 9723791500 – line 422
Moshavei Ha Negev (Negev Region farmers association), end users of the reclaimed water, private company	Ilan Peretz, general manager	Moshavei Ha Negev, POB 110 Jabotinski St. 6, Ofakim. – 87510 ISRAEL Tel: 97289961313; Fax:97289961318 Cell phone: 0505282815 ilan-ngv@barak.net.il
Ministry of Infrastructures, Water Commission	Mo Provizor, Director of Water Planning Division Michael Zaide, Strategic Planning Engineer	14 Hamasger St. POB 20365 Tel.Aviv 61203 ISRAEL Tel:97236369700, Fax:97236369761 Mop10@water.gov.il Tel: 97236369696, Fax:97236369761 Michaelz10@water.gov.il
IWA – Israeli Water Association	Avital Dror-Ehre IWA board member, in charge of training and capacitation	avitald@raanana.muni.il ehresea@gmail.com Cell phone:972-528-586034
Ministry of Health, Environmental Health Department, Tel-Aviv Region and Central District	Eng. Eti Burla Ministry of Health Central District Environmental Health engineer Eng. Valerie Pohoryles Tel-Aviv Region Head of Environmental Health Dept.	Tel: 97289788708,710 eti.burla@lbm.health.gov.il Tel: 97235634707 Fax: 97235684629 14 Haarbaah St. P.O.B. 20301 TelAviv 61203, ISRAEL valerie.pohoryles@telaviv.health.gov.il
<i>Israel Water Works Association (IWWA)</i>	Shabtai Glass CEO Eng. Moti Feldlite Water treatment	Cell phone: 97253750690 Cell phone: 972523750674 motif@gan.org.il

5. Documents: (see attached)

Include details of key documents collected/ brought to attention.

No	Details (include web links if relevant)	Status
1	Main flow sheet for the integrated water management in the city	
2		
3	<i>Add rows as required</i>	

Annex 4 Summary of discussions during scoping visit – non-edited notes

Meeting with project team – for powerpoint presentations see SWITCH Tel Aviv intranet.

Meeting with Valerie Pohoryles, Eti Burla - Ministry of Health, Dept of Environmental Health

- Drinking water quality monitoring is only partly carried out by MoH. Mostly municipalities and Mekorot are doing this. MoH is regulating this.
- About 100,000 samples for microbiological analysis are taken per year for the entire country. About 0.5% of these samples are analysed by MoH.
- Chemical pollution of groundwater occurs in the Tel Aviv area: NO₃, organic pollution (perchlorate, methylbromide) originating from old industrial zones.
- 40 out of 50 wells are no longer in use.
- 3 monthly reports on water quality are made available to the public (website www.health.gov.il)
- The trend during the last years is that the microbiological quality of the drinking water is constantly improving
- Does cross contamination from the sewer system pose a threat? Not many problems with the distribution system. Some wells have been closed due to the presence of a sewerline nearby.
- Standards are increasingly stringent. Water quality problems arise due to: corrosion, trace metals, mixing different types of water in the distribution network.
- By now 10 municipalities have a municipal water company. This ensures that revenues are reinvested in the water system.
- There is two major Combined Sewer Overflows in the Tel Aviv area.
- Tel Aviv has 33 beaches.
- 400 Faecal coliform is the limit for bathing
- a committee is formed to revise regulation. The FC limit may be changed. Also other indicators or pathogen guidelines may be added to the regulation. The Tel Aviv beaches are on average closed for 1 day per year, due to microbiological pollution.
- Apart from the two large CSO's , there is a number of smaller outfalls, that are used for example in case of pumping station failures (Bat Yam)
- Procedure for drinking water quality monitoring:
 - Current drinking water standards: 3 Total Coliforms per 100 ml.
 - If a sample has 1,2 or 3 TC, then a FC is mandatory.
 - If FC test is positive, check whether system failure has occurred. Try to locate source. Contact Mekorot to check water quality in water supplied by Mekorot to the municipality.
 - Communicate to the public: boil water.
 - After 24 hours: new FC test
 - >80% of the second tests are in practice negative.
 - If positive: sanitary survey to locate source.
- MoH wants to do 10% of the microbiological samples

- Role of LA: groundwater contamination (Ramat haSharon) with perchlorate. Water Commission wants to abstract the water and purify it before use. Otherwise the pollution may spread into the wider aquifer. MoH wants the well to remain closed, out of fear for public health impacts when this water is used for drinking purposes.
- MoH thinks that urban reuse will increase in the future, is concerned about possible health effects.
- MoH stresses the need for a preventive maintenance programme for the municipal water distribution system.
- MoH wants that the groundwater that is currently abstracted for drinking water purposes and is not treated, will be treated in the future.
- MoH is interested in grey water reuse for urban irrigation; concerned about health aspects.

Meeting with Avital Dror-Ehre - Israeli Water Association

- The Israeli WA is Israel's representative at the International Water Association and the WEF
- IWA has 2000 members
- The current chair is prof. Noach Galil (Technion)
- IWA is not a labour union, but a professional organization.
- IWA has good relations with the Water Commission
- IWA publishes monthly a magazine: Water Engineering and Irrigation
- Website: <http://www.israelwater.org.il/>
- It was mentioned that Tel Aviv University has a department for Future Studies. Could be an interesting partner for the project.

Meeting with Mordehay Feldlite – Israel Water Works Association

- Established in 1954, mainly to improve expertise in irrigation
- IWWA is a cooperation, its members mostly 'small' water supply companies, mostly for agricultural water supply
- Today, IWWA is also involved in reducing water losses in urban areas
- IWWA also involved in optimization of operational reservoirs in urban water distribution networks.
- Mekorot mentions that every year there is a meeting between Mekorot and agricultural effluent users of the Negev, to address any complaints etc.
- Water quality problems include: algae, sand and Mn, all causing clogging of emitters in drip irrigation. The presence of Mn in the effluent is related to overloading of the SAT infiltration basins (resulting in a negative redox value and Mn dissolution. Under aerobic conditions in the distribution system, Mn oxide particles are formed.
- The chloride concentrations are problematic only for some crops.
- Algae growth in reservoirs is prevented by floating covers and by fish.

Meeting with David Pick and Ehud Leshem – Ministry of Interior Central District Regional Committee for Urban Planning

- Municipalities start from 20,000 inhabitants. Below that: agricultural settlements.
- The Shafdan WWTP has enough capacity to cater for 2020 loads.
- Cross connections between the sanitary sewer and the stormwater system result in problems at the Shafdan WWTP during rainy days.
- There is a Country Masterplan for Water. In this masterplan it says that currently there are 90-100 WWTP in operation in Israel. The policy is to reduce this number; centralization. Although some now say that decentralization has also advantages, such as local reuse for agriculture or urban purposes.
- Example: Lod / Modin: not all the treated effluent is used for irrigation, since local demand for irrigation water is low; part of effluent discharged into the sea.
- The trend is towards decentralization of WWTPs, and local reuse in open spaces.
- Open spaces in the urban agglomeration will be maintained.
- Open space regulations; 5m²/cap in neighbourhood + 2 m²/cap elsewhere in the municipality + 2.5 m²/cap sport facilities.
- Question by Kala Vairavamoorthy: would Tel Aviv be autonomous to select a certain technology or approach for urban water management?. Yes, even if it is against the masterplan.
- A number of BOT desalination projects are currently implemented, to reduce overpumping of the aquifers.
- Lack of stormwater storage capacity. Infiltration of stormwater is tried to be increased.
- Drainage basin authorities have been established (Soreq, Yarkon etc)

Meeting with Ilan Peretz – Negev Region Farmers Association, C.E.O.

- The desalination projects are important for the farmers, since it will reduce the salt concentration in the wastewater and effluent.
- The Association expects the supply of effluent to increase over the coming years.
- ‘Agriculture in Israel will not disappear’ Although the water may no longer be subsidized in the future, the association expects that other forms of government subsidy for agriculture will be put in place.
- Mr. Peretz mentions a dual water supply system in Beer Sheva. Treated wastewater is going to be reused for urban landscaping.
- The agriculture in the South will require more Dan Region SAT treated water in the future.
- Mr. Peretz is a member of a committee that is consulted for major decisions taken by the Water Commission.

Meeting with: Avi Megemi – Mekorot Director of Water Resources Management Unit.

- Water loss in the Mekorot system is 4%
- In the cities distribution system the water loss is 10%. This is not the responsibility of Mekorot
- Causes of leakage: a.o. old pipes
- Municipality has a pipe replacement programme
- The municipality and the Ministry of the Interior jointly decide about the investment strategy. Min of Interior works on standardization in all municipalities.
- There is a trend towards privatization in the municipalities for water supply and wastewater collection. Revenues from water were until recently often not reinvested in the water sector, but used for other municipal expenditures. The private companies will be asked to reinvest their revenues in infrastructure renewal
- Municipalities pay about 2.5 shekel (1euro = 5.5 shekel) per m3, this is slightly more than the real costs.
- Mr. Megemi's vision for 30 years from now: the National Water Masterplan should be updated every 5 years. Stormwater recharge within the urban area's should be enhanced. This is important since Israel is rapidly urbanizing and therefore infiltration and recharge of the coastal aquifer may be endangered.

Meeting with Etai Pinkas, Alex Margolin, Yuval Sela – Dan Region Association of Towns for Environmental Issues and Sewage.

No notes

Meeting with Tami Gavrieli (Director strategic and long term planning, City Engineers office) and David Jackman (Tel Aviv Yafo Water Corporation)

- Responsible for overall town planning
- New strategic plan for 2020 (environment, sustainability, transport, not on infrastructure) see: <http://www.tel-aviv.gov.il/English/engineering/strategy/index.htm>
- 'water is not a main problem' was the outcome of the SWOT analysis carried out as part of the formulation of the 'city profile'. Therefore not a priority in the strategic plan.
- In the Ayalon park flooding was a problem.
- Sometime in the future; Tel Aviv would like to be independent from the national water system. Own desalination plants?
- Not very enthusiastic about dual water supply systems; it will only result in increase use of fresh water by agriculture.
- New neighborhoods are to be developed in the north of the city, some 20,000 houses.
- A list of 60 indicators is used in the implementation phase of the strategic plan. Inclusion of those indicators in decision making is currently studied.
- The number of staff for the municipality is every year reduced.
- There is a pipe rehabilitation programme in Tel Aviv. Oldes pipes: 50-60 years.
- A calibrated EPA net model for the distribution network is under development (Technion)
- 97% of the customers in Tel Aviv are metered.
- Pressure management is applied to reduce losses.

- The system is not yet optimized for saving energy in pumping stations.

Meeting with: Mo Provizor – Water Commission, Director of Water Planning Division.

- In 2010 the newly established Water Authority will be in place. This authority is created by a merger of: 1) Local Authorities Water Administration 2) Sewerage Authority (manages loans for sewer infrastructure) 3) Public Water Authority (establishes water tariffs) .
- The Water Authority will be governed by a council. Members of the council are: 1) 2 representatives of the general public 2) the Treasury 3) Min of the Interior 4) Ministry of Agriculture 5) Ministry of Environment. The council will be chaired by the head of the Water Authority, which is part of the Ministry of Infrastructure. The Ministry of Health is not represented in the Water Authority.
- The Water Commission is currently developing sustainability indicators for water management. This is lead by Micky Zeide.
- The Water Commission is developing a more dynamic type of masterplan, consisting of some 30 sub-plans.
- The Water Commission is also the regulator for the ‘private’ water supply companies.
- Due to the work of the Water Commission and Mekorot, Tel Aviv does not experience water scarcity.

Annex 5 Draft Sketch of the City of the Future – Tel Aviv (prepared by Haim Cikurel – Mekorot)

Global Pressures:

In 20-30 years, around Tel-Aviv a high population growth and advanced urbanization is expected. As a result there will be more demand for housing construction, energy demand increase.. Also there will be a shift of agricultural land demand from the Tel-Aviv area (where due to population growth there will be changes in land use) to the South of Israel where land is available and if enough water is supplied there would be more and more sustainable agriculture. Probably more desertization in the southern parts will occur due to climate changes.

How the future Tel-Aviv city is seen in 20-30 years:

(Collected from ideas by the alliance members)

In 30 years time the main supply of drinking water will come from more local sources (like desalination, more local wells and may be indirect reuse of effluent) together with much improved (filtered and may be disinfected by other means than chlorine) Mekorot supplied Lake Kinneret water. The effluents that are mainly reused in agriculture will be also reused for municipal and public reuse (street cleaning, fire fighting, park irrigation, recreational) and also for none-food industries (cooling towers..). Due to mixing of the desalinated water this water will contain less salts and less hardness which will enable more industrial reuses. The agricultural water consumption which is around 70% of the total consumption will go down to 50% due to the decrease of the agricultural production and due to more advanced agriculture.

The effluents from the Dan Region that are supplied to the south of Israel will be still required since the agriculture in this part of the country will still be wide-spread although more sophisticated and less water intensive. Still basic agriculture (potatoes, wheat..) will be practiced.

More local effluent reuse for public irrigation and river replenishment can come from small local treatment plants and not only from central plants like the Dan Region WWTP. These plants could use diversified treatments like advanced technologies (MBR..) or natural systems (wet lands..).

Some dilemmas:

1. Today three types of effluents are reused - The restricted irrigation type (secondary, no filtration, some disinfection), the tertiary treated unrestricted irrigation type (deep bed filtered well disinfected) and the Shafdan water (SAT treated almost drinking water type). Will in the future, only one type or two types be used? The SAT treated type as AA quality water for unrestricted agricultural irrigation and human contact public park irrigation or household irrigation and the A type deep bed or membrane filtered and UV or non chlorine disinfected water for all other reuse purposes including unrestricted agricultural irrigation.

The SAT system today is in its full capacity and there is gradual clogging of the infiltration fields.

The surface area needed for infiltration is considerably big and the intensive urbanization does not leave much space for new infiltration areas. So alternatives like improved SAT

systems or effluent desalination or what is called "double membrane process (UF-RO)" will be used.

2. Will dual systems be used in the city?

Some experiments are being conducted in other parts of the country and if the risk assessment will show that due to the very good water qualities in these reclaimed pipes even in case of cross-contamination the health risk is low it could be a good alternative. Also in case of very good reclaimed water quality the health risk radiuses around drinking water wells will be smaller for the reclaimed water pipe-lines around the wells..

There are plans for artificial islands for the future city of Tel Aviv that will expend the built area and leave more open and green spaces (golf courses). The use of desalinated water that will be located on these islands for drinking, for irrigation and other uses in these cases can be an advantage (since it will be produced and used on spot) instead of bringing reclaim water from a central plant.

The infrastructures will have to be gradually renewed. The new wastewater collection pipe-lines (the Eastern and Ayalon collectors added to the old Reading –Shafdan collector) will enable to connect more surrounding towns to the main wastewater plant (Shafdan). In the city the infrastructure for drinking water also will have to be renewed gradually and new storage reservoirs be planned.

Flood water will have to be separated from the wastewater sewers (special collecting and infiltration techniques or collection, cleaning and infiltration).

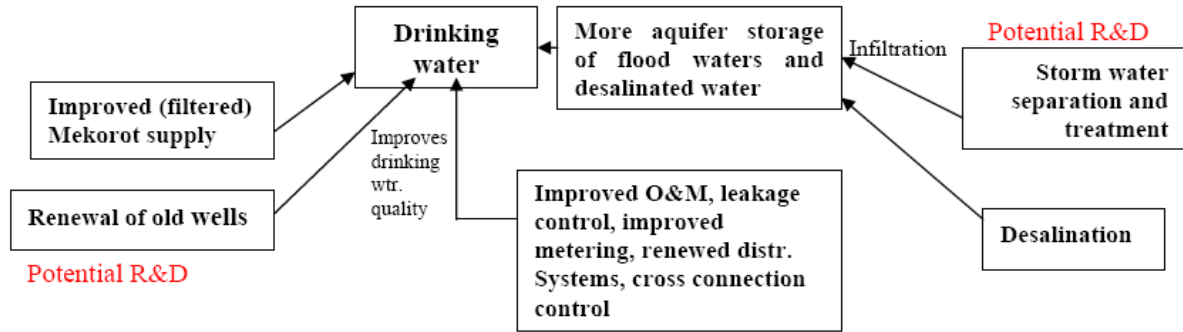
More efficient metering methods, leakage control methods to be applied for drinking water and reclaimed water pipe-lines.

Improved water security methods to be used.

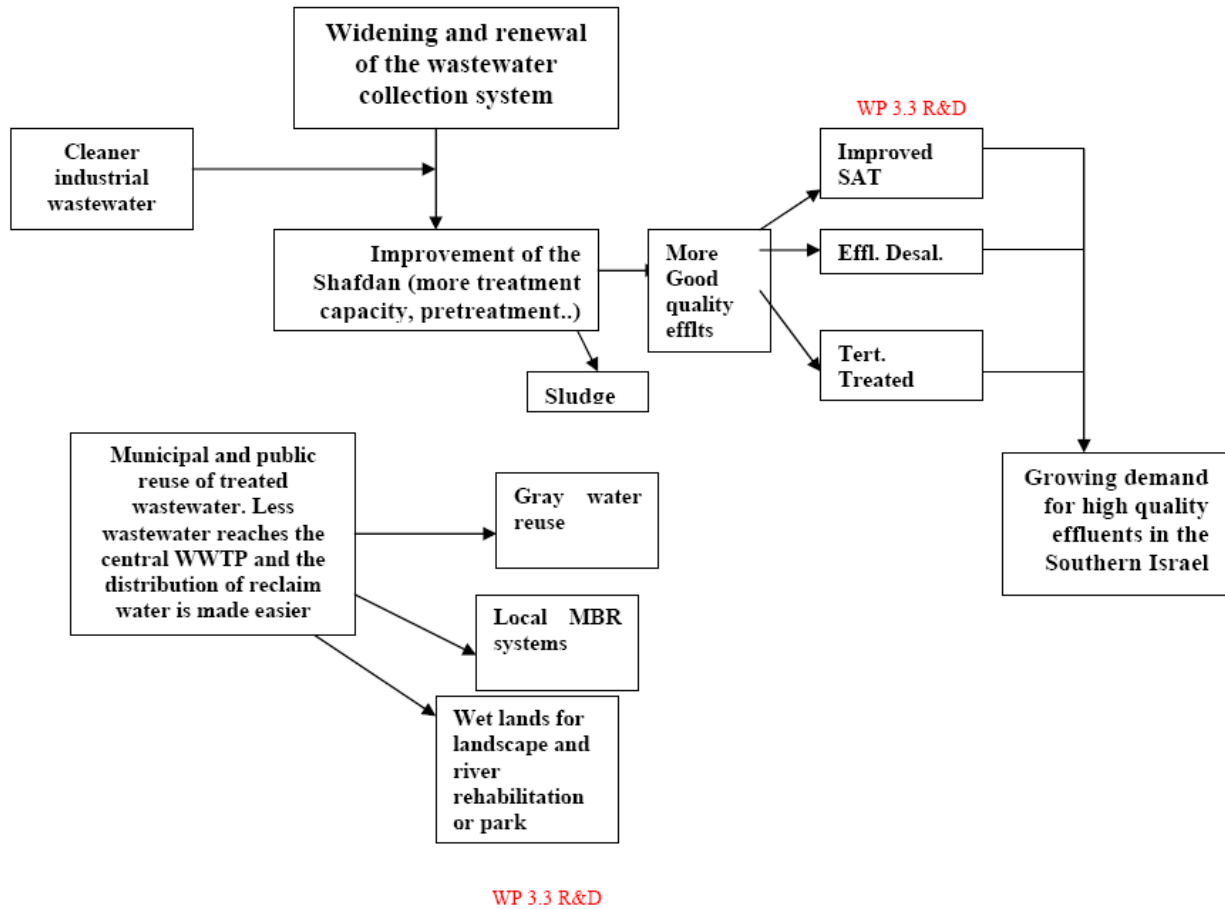
A scenario flow sheet for integrated water management for the future Tel – Aviv city is given below:

Also the potential research topics for SWITCH are mentioned.

Drinking water:



Waste water collection and effluent reuse



Annex 6

Checklist for preparation of report on scoping visit

- *Report to be prepared by learning alliance support team member in consultation with the city coordinator*
- *Answer each question reflecting on the level of progress (not just yes/no response) and with recommendations to address problems and take advantage of opportunities*

1. Have all the key stakeholders in urban water management been identified?

The key stakeholders have been identified and listed in Annex 3. Missing: a representative of environmental pressure groups - e.g. ADAM TEVA VE DIN.(Human, Nature and Judgment)

2. What is the level of engagement to date between the project and those stakeholders?

The key stakeholders (apart from the environmental pressure groups) have all been pre-interviewed by the Mekorot/HUJI team. During the scoping visit the Mekorot/HUJI/UIHE team interviewed each stakeholder again. All stakeholders expressed their interest to participate in the project. Some stakeholders made it clear: participation in the LA should benefit my organization.

3. Has a broad range of urban water management problems been identified?

Yes, see Annex 3 and Annex 5.

4. Have the possible linkages between these problems (city needs for solutions) and the work packages (research that can potential provide solutions) been explored adequately?

At this stage that cannot be done yet. First the LA should have their first meeting and the LA will identify which work package are most relevant to address certain problems in Tel Aviv. A preliminary selection has been made by Mekorot/HUJI: Theme 1,2, and 3, maybe 4.1, 5.1, 5.3 and 6.2. The first meeting of the LA will address this in more detail.

5. Are modifications needed to improve efficiencies and synergies between work packages?

Not identified at this stage.

6. Have cross-cutting issues (gender, poverty, governance, financing etc) been adequately considered?

Gender and poverty were considered to be irrelevant for urban water management in Tel Aviv. Governance and finance may be selected by the LA as key issues.

7. Is information being gathered (hard copy and electronic documents etc) and collated in an accessible way?

Yes, electronic documents will be posted on the SWITCH website, section Tel Aviv. Hardcopy of documents will be kept at the facilitators office and the CMU secretariat.

Not all information (like the national water plan) is available in English.

8. Is there sufficient local interest in SWITCH and the learning alliance approach (a critical mass of interested people to be involved, and a few who are really willing to drive process) to justify further efforts to develop a learning alliance?

The excellent preparation of the scoping visit by Mekorot/HUJI, as well as the (almost) full time availability and active participation of 4 staff during the visit itself has indicated that TA has great interest in developing the LA (the 'club') and great hospitality. A facilitator has been appointed during August.

9. Has the host organization for running the learning alliance been identified, and do they have prior experience of similar activities?

The host organization is the Hebrew University in close collaboration with Mekorot, coordinator is Avner Adin, deputy-coordinator Avi Aharoni and the facilitator Avital Dror-Ehre. Mrs. Dror-Ehre has no experience in running a LA as such, but as coordinator for the IWA has experience with organizing multi-disciplinary activities for this association, both content and logistics.

10. Has an appropriately skilled facilitator/ coordinator been identified to lead the learning alliance?

The facilitator is Avital Dror-Ehre (MSc Environmental Biotechnology, 14,000 m³/d WWTP manager and Charing the IWA Training/Education Forum). She is about to start her PhD work at HUJI in the framework of SWITCH. See also under 9.

11. Have other support and resource needs been identified?

Resource needs:

- Time input by Avital – 24 days per year – to be covered by supplementary budget from SWITCH

- Office facilities costs – covered by HUJI
- Organisation costs for LA meetings

1. Is funding in place for the learning alliance (including availability of matching funds where needed)?

Time input - 12,000 euro (for year 1 and 2; costs for year 3 and onwards it is planned to be covered by the stakeholders)

Organisation costs LA meetings – 4000 EU for the preparations, correspondence, calls, distribution materials, etc. For the Club meetings expenses themselves – food, beverages, etc 5000 EU.

2. Is the learning alliance action plan consistent with the work package description for the learning alliances (wp6.2) in the description of works?

Basically yes, there is no conflict with the 6 month action plan for Tel Aviv. However, tasks 2-6 need to be fine tuned to the demand from the city. A discussion on this between the city coordinator and the coordinator for WP 6.2 is suggested.

3. Have the immediate next steps (follow up action) to progress establishment of the learning alliance been identified and roles and responsibilities agreed?

Yes, see 6 month work plan.

Any other issues?

Who will cover the Facilitator travel and training course expenses in Europe in October 2006?

Scoping Visit Zaragoza, Spain

13 – 15 June 2006
Final Report



Zaragoza's Expo 2008 logo

Prepared by

Peter J. Bury (IRC)
Victor Bueno (Ay. Zaragoza)
Chris Jefferies (Abertay Dundee Univ.)

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Purpose

The overall purpose of the scoping visit was to get the SWITCH programme in the city of Zaragoza, Spain, started. Not so much in terms of research content, but rather in terms of starting to bring together and promote interaction among key stakeholders in urban water management.

In order to achieve this, the visiting team worked at three levels:

4. work with the current core SWITCH team of Zaragoza to organize the visit; check the review the initial identification of key stakeholders; review the existing preliminary scoping report; discuss scoping visit reporting and preparation of the Zaragoza Learning Alliance Platform (ZLAP) action plan;
5. interview a selection of key stakeholders to get a feeling of current views and work on urban water management and prepare people visited for the Zaragoza SWITCH workshop;
6. bring together key stakeholders in a half day workshop to (1) present SWITCH global, SWITCH Zaragoza plans and the Learning Alliance concept and (2) stimulate interaction among them to start visioning SWITCH in Zaragoza and discussing LA as a modality for an integrated collaborative approach;

Additional to the above, the opportunity was taken to explore ideas for interlinkages with the Zaragoza H2O Expo 2008.

See annex for detailed visit programme.

Methods

Informal and formal discussions and meetings on content and process with the Zaragoza SWITCH core team, including joint drinks and meals, which contributed to ‘break the ice’ and start building confidence and trust.

Interviews of (a selection of) key stakeholders making use of the scoping visit checklist (see notes in annex).

Organizing and (co)facilitating a Zaragoza SWITCH workshop (see programme and reporting in annex), making use of the following facilitation methods:

5. Presentations by Zaragoza stakeholders;
6. Presentation with questions and answers of SWITCH global, SWITCH Zaragoza and the LA concept;
7. Doing a ‘ZH2O SWITCH café’ (see www.theworldcafe.com for method) on visioning SWITCH and LA by participants. The method consists in 3 informal rounds in which all participants in every time different arbitrary constellations discuss and document 3 questions relevant to doing SWITCH in Zaragoza (see annex for details);
8. A plenary metaplan (visualisation and sharing of thoughts on cards) session around 2 questions: (1) and (2) what participants are prepared to contribute to SWITCH.

Activities

See annex for detailed scoping visit programme and people met.

Note: the Agenda 21 bureau had organized and financed a translator throughout the scoping visit, indicating the willingness to invest local resources for SWITCH.

Discussions with Zaragoza SWITCH coordination team

While Javier Celma is the official contact of SWITCH Zaragoza, the day to day management and coordination will be done by Victor Bueno. Both work in the Agenda 21 unit of the municipality. Javier will play the main role in terms of advocacy and securing resources for SWITCH in Zaragoza. Awareness was created for the need to distinguish various roles for implementing SWITCH in Zaragoza, these roles may come together in one or more persons:

- SWITCH technical coordination and day-to-day management;
- SWITCH learning alliance facilitation;
- SWITCH advocacy and lobbying;

SWITCH Zaragoza financial resources may be more limited than initially assumed. Current estimates amount to €350.000 with a possible 35% financing by the SWITCH programme (this needs to be checked and clarified to all parties).

Current (potentially) active involvement in SWITCH seems to be limited to Zaragoza Municipal departments (Agenda 21, Dept. of Infrastructure, Bureau for Environmental Education, Finance Department, Health Department).

The Zaragoza team intends to exploit the opportunity offered by the Zaragoza World Expo 2008 which – for the first time for a world expo – will be organized around a main theme: water.

Zaragoza is discussing with the UN headquarters the possibility of hosting the UN office for the World Water Decade 2005 – 2015 (further information is needed, contact at UN headquarters Mr. Carlos Chauradi (?)).

Main lessons / impressions

See also annex 6 ‘checklist’ and annex 2 ‘visit notes’

Zaragoza’s commitment to SWITCH objectives

The Municipality of Zaragoza (Ayuntamiento de Zaragoza) is clearly very committed to delivering environmental improvements. This is being done through the Agenda 21 office which coordinates all types of environmentally related activities including:

- a water library in a renovated building with Roman origins;
- assisting 50 schools with vegetable gardens;
- publishing environmental indicators;
- Addressing leakage detection in the water network.

Zaragoza SWITCH core team

The lead in SWITCH is taken by the Zaragoza Municipality Agenda 21 office and includes currently the following people:

- Javier Celma, Director Agenda 21 department and key decision maker;
- Victor Bueno, day-to-day SWITCH coordinator;
- Joaquin Garcia Lucea, Head of revenue collection, very interested in SWITCH
- Ms. Mercedes Navarro Elipe, Director of the Public Health Laboratory
- Marcus Murillo & Asuncion Canizares - Industrial discharges

SWITCH involvement may be hampered by the priority given to Zaragoza Expo 2008. Quote: ‘individual people may be interested in SWITCH, but organizations may not!’.

3.4 Zaragoza Expo 2008 management team

Expo will be held from June - September 2008. The principal focus of this expo is the sustainability of water in nature and as used by humans. A number of pavilions are under construction to house water-based exhibitions, each with a different focus. Two presentations in English (in Powerpoint and on DVD) are available for display on the SWITCH web-portal.

There is great potential to further the aims of SWITCH by linking activities in Zaragoza with EXPO 2008. The Expo will have a very large number of visitors and is all about communicating water issues to the general public. The tie up is most likely to be through the 6 weeks Water Tribune which starts on 22nd March 2006. The Water Tribune comprises six themed weeks, each with a different focus. The key player in Zaragoza will be Domingo Jimenez Beltran (djimenez@expo2008.es, tel. +34 976 702008), a former director of the EU Environment Agency.

Throughout the themed weeks of the Water Tribune, four seminars will be held in which the theme for the week will be developed from the specific standpoint of the Expo’s sub-themes: water for life, water: a scarce resource, waterscapes and water and water: an element linking peoples. The themes are:

- Climate and situations
- Water and supply
- Consumption and production
- Management & efficiency
- Sanitation & regeneration
- Natural Systems

Recommendations

This paragraph proposes a number of recommendations based on the outcomes of the Zaragoza scoping visit, structured into a number of categories.

In Zaragoza

1. To keep the starting up momentum it is important to translate the scoping visit report and share it among key stakeholders (including all who participated in the scoping visit workshop) soonest;
2. Increase the frequency and quality of communication with key persons within the SWITCH management, LA coordination group and relevant work package coordinators (consider starting to use Skype for chat / cheap phone conversations);
3. Consider involving more actively currently not included key stakeholders, including the Ebro River Basin Agency (Confederacion); relevant Zaragoza university departments; selected committed civil society groups;
4. Clarify the issue of available resources for SWITCH (money and people’s time).

Within overall Learning Alliance steering group

5. Come up with a clear policy and strategy how we will react to demand for support in the learning alliance process from cities;
6. Develop LA backstopping approach (remote by email, Skype, website and other wise);
7. Develop LA capacity building package and training programme (do we have possibility to organize joint training for interested and committed cities?).

At SWITCH programme management level

8. Address the language issue within the SWITCH community. Develop a consistent learning and sharing policy that takes into account language barriers: how will we facilitate face-to-face / synchronous and a-synchronous exchange among different language groups?
9. Explain clearly the SWITCH language policy to all members (and make this also available on the SWITCH web-portal).
10. Zaragoza has very valuable experience to be shared within the SWITCH community, particularly on cost recovery modelling and scenarios.
11. Zaragoza is a potentially very interesting demo city for water conservation and reuse.
12. SWITCH management should seriously consider – and in case of a positive decision start to plan – using the opportunity to organize the SWITCH mid-term review cum symposium during the Zaragoza Expo 2008 (June – September).

Next steps

#	Activity	Who	When / deadlines
1	Comment and improve Zaragoza scoping visit report	Peter, Victor, Chris, others	Till mid July 2006
2	Clarification about funds for Zaragoza involvement in SWITCH: extra demo funds, additional partner	Peter, Victor, Javier, Carol, Erik, John	Till early September 2006
3	Regular communication between Zaragoza coordinator and SWITCH Learning Alliance Platform (ZLAP) contact person	Victor, Peter	Ongoing
4	Initiate coordination between Zaragoza coordinator, L.A. contact and work package coordinators	Peter, Victor	Mid July – Early September 2006
5	Translate into Spanish and share Zaragoza scoping visit report	Victor	Mid July 2006
6	Develop and finalize Zaragoza action plan to set up ZLAP	Victor with Peter	Till early September 2006
7	Develop Zaragoza webpages on the SWITCH programme web-portal, including identifying Zaragoza webmaster	Victor	Till early September 2006

Annex 1

Scoping Visit Programme

Day	Activity	Persons involved
Monday 12-6 evening	Arrival in Zaragoza	Peter J. Bury (PJB) & Chris Jefferies (CJ)
Tuesday 13-6 morning	Discussion with Zaragoza SWITCH team (Zaragoza municipality Agenda 21 team)	PJB, CJ, Victor Bueno (VB), Javier Celma (JC)
	Discussion on environmental education and role of civil society	PJB & CJ & VB Marisa Campillos & José Pinzotas (Zaragoza Mun. Envir. Education Cabinet / Agenda 21)
Tuesday 13-6 afternoon	Discussion on pollution control	Marcos Murillo & Asuncion Canizares (Zaragoza Mun. Environmental Unit / Industrial Pollution Control)
	Discussion on water quality control / public health	Mercedes Navarro & Elena Sevilla (Zaragoza Mun. Health Dept.)
Wednesday 14-6 morning	Discussion on financial matters and cost recovery	Joaquin Garcia & Enrique Asensio (Zaragoza Mun. financial dept.)
	Discussion on water / sewerage infrastructure and quality assurance	José Entralgo & Alfonso Narvaiza (Zaragoza Mun. Infrastructure Dept.)
Wednesday 14-6 afternoon	Discussion and visit of sewerage treatment plant	Emilio Diaz & Antonio Silva (Zaragoza Mun. Waste Water Treatment Plant)
	Preparation SWITCH workshop	PJB & CJ & VB
Thursday 15-6 morning	Meeting with Zaragoza H2O Expo 2008 team	Maite Galvez & Francisco Pellicer (Zaragoza Expo 2008 management unit)
	Zaragoza SWITCH workshop	PJB, CJ, VB & 15 participants
Thursday 15-6 afternoon	Debriefing	PJB, CJ, VB
	Departure	PJB
Friday 16-6	Departure	CJ

Annex 2 Notes of interviews and visits

Discussion with the Environmental Education Unit of Agenda 21

They have had contact with over 300 schools and run concrete school gardening / environmental projects with 50 schools for over 20 years. Irrigation and water conservation is a main topic. They have extensive experience with awareness raising and developing educational materials. Participated in the EU funded LIFE project.

Zaragoza Water and Environment Library

Located in a historic building, rehabilitated with substantive EU funding. Offers a nice environment for library consultation, meetings and internet access. However other than onsite services, its outreach seems fairly limited. Its website doesn't contain much information.

Zaragoza water management

There is no specific water / sanitation agency. Responsibilities are shared over a wide range of departments. However the municipal council established a water commission under the leadership of Councillor Jesus Aria (responsible for infrastructure and agenda 21). The commission has a good 100 members (no list was given), including university, civil society groups, neighbourhood representatives. The secretariat is held by the Agenda 21 office.

an advisory body / consejo for water and environment has been established to support the water commission.

The current Mayor of Zaragoza is interested in water issues.

There is exchange of experiences with water management with other Spanish cities, but little in a more international context. A main limitation seems to be language.

SWITCH demo topic

The idea is to improve monitoring and management of water consumption as a pilot in one part of the city. Particularly the 7.000 (or 7500 ?) privately owned apartment buildings water tanks are of major concern. The issue is that tanks are privately owned but not maintained and that municipal water meters are put after - not before - these leaking and polluted water tanks. The demo would address a wide range of water management related issues: awareness; cost recovery; technical solutions; demand management; water quality; water network management; etc... A multi-disciplinary and multi-sector approach would be needed.

Water pollution issues

Agenda 21 has overall control?? There are no major industrial pollution problems. Only two major paper production industries of which water consumption is high but reducing due to higher tariffs in recent years leading to more efficient production methods.

Zaragoza is interested to share experience and learn from others on sensor based monitoring of waste discharge by industry. No sophisticated model yet, but under development. Maybe SWITCH can propose model (IHE) - they might work with univ. Zara on a storm runoff model: different model

Zaragoza health unit

Legionella has been a nightmare since 76, particularly due to increase of water particles in air-conditioning systems. The fear is that it may become a major threat during expo 2008.

Some interesting internal research is not public on this topic.

legionella clones in the system. Problem in water storage in houses. Reuse/recycling could make this worse.

In aerosoles: typical hot country problems. Requires research.

So : reuse is problematic. This may be an interesting issue in the SWITCH work-package on this.

Zaragoza water tariffs and cost recovery

Water tariffs quite sophisticated. medium prices: 205 types of tariffs!

Based on average use, all metered. Lots of problems, 25% is not metered : public water

Poverty is addressed but problems small. Unpaid water: -4%

City is not allowed to make profit of water. Envir. costs not yet included .

Zaragoza clearly much better organized than Lodz. deficit 30%. comprehensive studies & models

Tariff structure : domestic fixed 50% consumption 50% seems high!

Equity addressed : small / big hholds

Principle: same benefit - same costs: analyzed in details

Study on willingness to pay with university.

Objective: tariff same for all / cap.: not possible. 3.20m3/month/hh + 2.35m3/p/m

[discussion on pol. fear vs. perception consumer and % cost water /income]

Consumption down to 110l / p / d seems not bad

Interesting domestic water savers get 10% discount from one year to the next.

Zaragoza water infrastructure

Plan for water reduction

Storage for 1 day, reuse: 7%, awareness, supply less water, loss in installations more than in pipes.

Next: renew reservoir and pumps 6m€, sectorize networks around reservoirs: not easy in old narrow system. Plan to start in one easy area.

But little money to invest.

Problem storage/ break pressure tanks in basements of buildings : overflow, meter after tank, loss nor paid. Owned by house owners (7000 7500 tanks): apartment blocks are condominia. Now at point to point meters before tank.

Many possible ways to address the issue: discuss in consejo de agua.

[discussion SWITCH potential]

Stormwater pilot planned after summer. Unitary water system, in new areas plan to divide.

3.5 Description of the Zaragoza water network

Zaragoza has low rainfall (~350mm per year) and almost zero rainfall in summer. The city straddles the Rio Ebro which is the largest river in Spain. Zaragoza is at the confluence of two tributaries, the RioGallego 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. This will change soon following commissioning of new works to bring water under gravity from the Embalse de Yesa (Yesa dam) close to the Pyrenees. Formerly there was an issue of flooding in Zaragoza from the Rio Ebro, principally on the south bank, but largely this has been addressed by the construction of dams on the tributaries.

A very high proportion of residents (~90%) live in apartment buildings and the city of 650,000 is very compact. The historic centre is slightly higher and is on the south bank while the expansion (including the is predominantly on the lower north bank.

100% of the water delivered in the network is potable. There are problems with the delivery of water to many of the housing blocks because of the installation of break pressure/ storage tanks (rupturas de ??) in the basements of buildings. Formerly it was council policy to require these rupturas to be installed and there are around 7,500 in the city.

The rupturas de ?? are now seen to have the following problems

- use of additional energy because the break of pressure means that all water must be pumped to the residents;
- Lack of maintenance is leading to high leakage to the sewers. It is suspected that this is because the inlet is badly controlled and the flow is continuous.
- There is a significant risk of pollutant ingress – particularly Legionella bacteria – because the storage is at the bottom of the building.

Total water consumption is reducing slightly (85x Hm³ in 1991 down to 70 Hm³ per year). Per capita water consumption is reducing even though there is considerable industrial expansion at the moment (144 to 125 m³/year/person from 1991 to 2004). There are two principal reasons for the reduction;

- Investment in leakage control
- Public awareness and management of demand.

Wastewater is treated at a main treatment plant to the east of the city. There is also a much smaller plant. Current treatment at the main plant is for a population equivalent of 1.0 million. Capacity is 1.2 million p.e.. The main plant is operated on a 25 year concession by Veolia.

Measurement of industrial discharges in the sewers was widespread. Measurement was at a scale of each industrial area (polygono).

Physical/chemical/biological analysis is carried out by the public health laboratories. The director indicated they may be willing to cooperate with health-related studies. She was particularly concerned about legionella, and the rupturas de ??.

The water supply distribution network has large diameter pipes with low velocities. There are many control valves to facilitate alternative network configurations. Zonal control is almost absent.

The water used in swimming pools is groundwater.

3.6 Environmental Indicators

Indicators are published in 'Agenda 21 publication No. 12 Updating of Common and Specific Indicators' dated 2003-2004. Mandatory EU indicators appear to be measured but none measure the water environment.

Local indicators measured for water are;

- Potability of water
- Total water consumption
- Wastewater connections to the system going to treatment plant.
- Industrial discharge licenses
- Ecological state of rivers.

3.7 Value of Zaragoza to Work Package 1

3.7.1 Indicators

It is clear that Zaragoza is fully engaged with gathering indicators, operational, socio-economic and quality indicators were all discussed. Discussions focussed on the city and we did not meet anyone from agriculture or from the Ebro River Basin Management Authority.

We were told that more technical indicators are used internally.

I (CJ) believe that Zaragoza will be very interested in working with SWITCH on the development of indicators. The Agenda 21 office has a lot of experience in linking technical and socio-economic indicators related to water.

Modelling

We were not given information on network plans but the appearance was given that information would readily be available.

Understanding of amounts of water used is very good because all of water is metered

3.7.2 GIS

We were presented with industrial waste information on the ArcMap GIS platform. This is being used to assist in the identification (and possibly modelling) of industrial waters. There are 20-30 industrial 'polygons' and one alone (Malpica) has up to 300 businesses. There may be scope for addressing the paradigm shift applied to industrial water usage.

3.7.3 Price of Water

The price of water is a significant issue in Zaragoza which has recently moved to a new methodology for pricing based on median prices.

Joaquin Garcia Lucea described a detailed study by the University of Zaragoza into the effects of different pricing structures.

A reduction of pollution load and flow has been observed and this occurred after the price of water was raised – and also after the introduction of industrial discharge licensing.

Annex 3 Zaragoza SWITCH workshop

Note: workshop was held in Spanish. A translator ensured translation where needed.

The workshop was attended by 19 persons, including the scoping visit team. The gender balance was 5 women / 14 men.

The workshop was opened by Javier Celma, who was not able to participate in the workshop.

Programme

Indicative timing	Activity	Who / remarks
11:00 - 11:25	Opening presentation	Javier Celma (JC)
11:25 - 11:30	Purpose and programme: (1) introduce SWITCH; (2) let people start talking to each other; (3) identify who wants to take part.	VB, PJB
11:30 – 12:00	Introductions and short statements by participants	Moderation VB
12:00 - 13:00	Presentations: SWITCH programme SWITCH Zaragoza SWITCH Learning Alliance approach Questions and answers	CJ VB PJB Moderation VB
13:00 – 13:45	Zaragoza SWITCH café: 3 rounds of group work on key questions related to SWITCH and LA in Zaragoza, plenary presentations of group work	Moderation PJB
	Metaplan session on next steps: 1 are you willing to be part of this and 2 what suggestions for next steps taken up by small taskforce	Moderation PJB
13:45 – 14:00	Indication on next steps SWITCH global	PJB
14:00 – 14:15	Proposed next steps SWITCH Zaragoza	VB
14:15	End of workshop	

“ZH20 **SWITCH café**” questions introduced by PJB and discussed (see annex on method):

4. Your vision for your children: what should Zaragoza achieve in water management in the next 20 years;
5. Who in (or outside) Zaragoza should be involved in SWITCH Zaragoza?
6. What kind of extra benefits could the city gain if we create a Zaragoza learning alliance platform?

Next steps questions (see annex on Metaplan method)

3. What could you contribute to the Zaragoza SWITCH learning alliance?
4. What suggestions do you have for next steps?

Annex 4 Presentations

6. Local presentations (Expo 2008)
7. SWITCH global presentation
8. SWITCH Zaragoza presentation
9. LA concept presentation
10. Questions and answers (on presentations 2 – 4)

Annex 5 Workshop outputs

Outcomes Zaragoza SWITCH Café discussions

Question 1: Your vision for your children: what does Zaragoza need to achieve in water management in the next 20 years

Drinking water

- Supply quality; Yesa dam quality water ...right now!
- Supply guarantee: quantity and quality.
- Consumption individualized control.
- Responsible use promotion: sensitization, information to the user on their consumptions and measures to take
- To use the available technologies: to minimize nuisances in the maintenance, etc.

Waste water

- To assure 100% sewage treatment: consumption water, street washing, stormwater.
- Sewage controls: domestic and industrial
- Responsible use promotion: sensitization, information to the user on their consumptions and measures to take

Environment

- Water safe reuse (alternative nets) for washed and rain water.
- To diffuse as working the water cycle.
- To use the groundwater for certain applications (to adapt water quality to the use)
- Protection in front of natural risks (flood)
- River integration in the city
- Responsible use promotion: sensitization, information to the user on their consumptions and measures to take

Other points mentioned

- To adapt the water quality to the uses. To improve the supply water quality.
- To get as objective that the surface and ground water has alone “natural” pollutants
- To adjust the water consumptions and rates in agriculture, gardens, sanitary applications using biodegradable products.
- To reduce consumptions and reuse the water as much as possible.
- To control the water consumptions in their entirety.
- Not to foresee to consume all the water that we have.
- Not to see the rivers so dirty as now
- To convince to the citizen of the water importance and saving.
- The Administration is the first one in to make aware and to make good practical.
- Is it worthwhile to improve the water quality with the Yesa water?
- To bring of Yesa (environmental cost)
- Pipe obturation for salts
- People is made aware with the problem
- Use of water thrifty technologies (sustainable developing)
- Educated and educators in the environment topic
- With good urban planning (non housing in semi-detached house)
- Good administration of the information.

Question 2: Who in (or outside) Zaragoza should be involved in SWITCH Zaragoza? Matter

1. Ebro Hydrographic Confederation (official body river basin) - Environment Ministry (Central Government)
2. Environment Department (Regional Government)
3. Office Agenda 21 Local - Department of Infrastructures - Public Health Municipal Institute - Tributary Administration (City Council)
4. Agenda 21 Local Commissions, Sectoral Council, University, Watering Union, social entities (Social)

Formation

1. Education Ministry (Central Government)
2. Education and Environment Departments (Regional Government)
3. Environmental Education Office / Gallego River Formation Center (Local)
4. University, the media (Social)

Administrations should keep in mind environmental approaches. Transversality.

Others mentioned

1. Water Aragonese Institute: why it's not here? Understanding problems. Why should it be? Decision capacity in the water administration.
2. Ebro Hydrographic Confederation: It is the official body that it gives all the catchments and sewage authorizations. It develops Hydrological Plans, according to the Water Framework Directive.
3. City council (different departments)
4. Organizations: Social: Water New Culture Foundation, environmentalist groups, neighbors' associations, consumers' associations, NGOs, Business: managerial associations Watering: Irrigation Unions; Educational sector

Question 3: What kind of extra benefits could the city gain if we create a learning alliance platform in Zaragoza?

1. Knowledge of the situation in other cities (their administration, their problems, their technology).
2. Stimulus to improve the administration and to implant new uses.
3. Opportunity for a bigger understanding of the citizens.
4. To improve the technology.
5. To improve the water quality.
6. To reduce consumptions and reuse as much as possible.
7. To control water consumptions in their entirety.
8. Understanding to the citizen of the water appropriate use.
9. Understanding to the Administration of the water appropriate use.
10. To improve the relationship among different entities.
11. To share information and procedures
12. To reinforce the management strong points for people have to decide.
13. To increase the information "treated" for who generates it.
14. To export to other the efficient aspects of our management.
15. To play down the problems and to put them in connection with others.
16. To compare and to pick up other good experiences.

Metaplan discussion

Question 1: What could you contribute to the Zaragoza SWITCH learning alliance?

1. Supporting initiatives to diffuse saving measures.
2. Collaborating with the working team in the residual water contamination control.
3. Contributing experience, documents and contacts.
4. Contributing my information on interested social collective and my experience in participation processes.
5. Acting so that something changes in the water use.
6. Putting to disposition of Switch the tools of the Institution that can serve to the project.
7. At professional level contributing the knowledge for project information and diffusion. At personal level, learning.
8. We have a lot of information that we can share, it is already made to everybody who requests it. It is necessary to exchange the current and future knowledges.
9. In the understanding of the water importance.
10. Collaborating in the installation of the Learning Alliance and participating: receiving and giving information.
11. Helping to the Project diffusion (common knowledge). Contributing knowledge. Helping to contact among experts.
12. Comparing our form of working with that of other cities.

Question 2: What suggestions do you have for next steps?

1. To define our objectives for Zaragoza in the Project Switch;
2. To put in concret form the projects where it is possible to center our participation,
3. To put in concret form the internal organization to participate in Switch, the task distribution and the working mechanisms.
4. To diffuse the water culture to the social communities
5. To consolidate the collaborations
6. To collaborate in the several phases that it's necessary to develop the Project.
7. To divide the main objective in more concrete ideas
8. To fix. To choose. To put in concret form water saving performances. To begin to obtain results.
9. To reduce the private user losses non measures.
10. To find an appropriate moderator to channel and to organize the project.
11. Many Administrations and Organisms are absents in this meeting. To establish unique connections among the different collectives. To name a person that represents to Zaragoza like contact with the rest.
12. To have a common place where to share information and where there are some coffee.
 - A) We doesn't leave of zero in this city. To invite to share ideas.
 - B) To lead jointly among all the implied actors, the initial diagnosis, the problems, the priorities.
 - C) To establish objectives to get in consensus way.
 - D) To establish working methodology and pursuit.
13. To maintain the interest and the holding in the project along the 5 years.
14. Right now: none. I need to think, to meditate to give an answer

15. To convince our leaders. To carry out first contacts with people that negotiate the water.
To carry out some campaigns in school centres.

Main focus of Zaragoza SWITCH

ABOUT WATER USE

1. To improve the supply water quality.
2. To adapt the water quality to the uses.
3. To increase consumption individualized control.
4. To promote responsible use and sensitization, information to the user on their consumptions and measures to take.
5. To use the available technologies: to minimize nuisances in the maintenance, etc.

ABOUT LEARNING ALLIANCES

1. To involve in Switch Zaragoza to Ebro River Basin Agency (Confederation); the Water Aragonese Institute (Autonomous region), University, NGOs, and consumer associations.
2. To share information and procedures with other cities.
3. To improve the relationship among different entities.

Annex 6 Scoping Visit Checklist

Reflecting on the level of progress (not just yes/no response) with recommendations to address problems and take advantage of opportunities

4. Have all the key stakeholders in urban water management been identified?

The Scoping Visit workshop contributed to a more comprehensive inventory of key stakeholders and started a discussion about whether or not to actively involve them in the SWITCH programme and learning alliance. An issue raised that needs to be addressed is the remark by Javier Celma that some of these stakeholders (e.g. the Ebro River Basin Agency (Confederacion) and relevant university of Zaragoza departments) would only participate if hired and paid as consultants. While the Agenda 21 environmental education bureau is interested to participate and contact schools were represented at the workshop, this is not (yet) true of relevant civil society groups that were mentioned during the workshop.

5. What is the level of engagement to date between the project and those stakeholders?

The scoping visit workshop seems to have been the first time that (some of) the key stakeholders have been brought together to discuss SWITCH. However Zaragoza does already have for years a council water commission and an advisory water management body in which many of the stakeholders figure. If a local decision is made to set up the Zaragoza Learning Alliance Platform (ZLAP) then it would make sense to build upon these existing consultation bodies.

6. Has a broad range of urban water management problems been identified?

Yes certainly. Water and Water Management are priority issues for the city, being very dependant on the Ebro river and the Imperial Canal ferrying drinking water from the Pyrenees down to the city. The current SWITCH group has very clear ideas about priority research and demo activities that could be undertaken under SWITCH, including water conservation, reuse, demand management and exploiting the Zaragoza Expo 2008 opportunity.

7. Have the possible linkages between these problems (city needs for solutions) and the work packages (research that can potential provide solutions) been explored adequately?

Financial resources available for SWITCH Zaragoza within the SWITCH programme, the Expo 2008 and the municipality's own resources need to be clarified. More work is need to match the city's priorities with the SWITCH work packages priority themes.

8. Are modifications needed to improve efficiencies and synergies between work packages?

Yes, but the answer to question 4 indicates that the process has only just begun and that clarity and local ownership on possible necessary modifications will only emerge at a later stage (see question 4).

9. Have cross-cutting issues (gender, poverty, governance, financing etc) been adequately considered?

During the scoping visit the following has been addressed regarding cross-cutting issues:

Gender: not specifically addressed, but clearly the gender mix of professionals in water management is fairly well balanced.

Poverty: the various models and scenarios presented on cost recovery clearly include addressing poverty issues.

Governance: had not been specifically addressed. What is clear is that the municipality plays an overwhelming role in urban water management. Some remarks indicated that there are however different views on addressing water management issues between the municipality, some university researchers, some civil society groups and the river basis agency.

Financing: Zaragoza's experience with financial modeling and cost recovery scenario's – developed together with the university of Zaragoza – could be of high interest to the wider SWITCH community.

10. Is information being gathered (hard copy and electronic documents etc) and collated in an accessible way?

Yes information and presentations of work (powerpoint) are widely available and accessible on demand in hardcopy and digital format. A limitation is that all material is only available in Spanish. Much information about Zaragoza urban water management related topics is available on websites.

11. Is there sufficient local interest in SWITCH and the learning alliance approach (a critical mass of interested people to be involved, and a few who are really willing to drive process) to justify further efforts to develop a learning alliance?

Bilateral discussions and the scoping visit workshop indicated that there is definitely interest in SWITCH and the proposed learning alliance approach. However a potential threat to active involvement in Zaragoza lies in the very full agenda's, work loads of key stakeholders and the fact that a lot of energy and resources will have to be put into the preparations of the Expo 2008.

The communication in the coming weeks and months and the quality of the draft LA plan to be prepared by the Zaragoza team will be an indicator for the potential and justification to further support the ZLAP.

12. Has the host organization for running the learning alliance been identified, and do they have prior experience of similar activities?

Zaragoza Agenda 21 will remain the main coordinating unit for SWITCH. Agenda 21 has extensive experience with (fairly large scale) international collaboration programmes (with UNESCO, ICLEI, EU, UN) and is well equipped to lead SWITCH in Zaragoza, provided sufficient priority (and thus (human) resources) will be allocated.

13. Has an appropriately skilled facilitator/ coordinator been identified to lead the learning alliance?

No not yet. Victor Bueno, Agenda 21, is the current day-to-day SWITCH coordinator. Javier Celma has the cloud to advocate and lobby for Zaragoza's participation in SWITCH. However Zaragoza's active participation in SWITCH and the setting up of the ZLAP will require finding an experienced local facilitator (moderator).

14. Have other support and resource needs been identified?

This is clearly still a matter of further prioritizing and negotiations within and outside the Zaragoza municipality. The scoping visit team did not have the opportunity to discuss these matters with political decision makers (e.g. respective responsible city councilors, including Lora Campos). There will be local elections on 3d July 2006, which may influence local support to SWITCH.

15. Is funding in place for the learning alliance (including availability of matching funds where needed)?

The impression of the scoping visit team is that Zaragoza should be able to allocated required local resources (in time, kind and funds) to set up and run a meaningful ZLAP. However this has not been secured yet. The coming weeks / months (till mid September?) should show whether this will happen or not.

16. Is the learning alliance action plan consistent with the work package description for the learning alliances (wp6.2) in the description of works?

Under construction, a plan should be developed till mid September.

17. Have the immediate next steps (follow up action) to progress establishment of the learning alliance been identified and roles and responsibilities agreed?

Yes, see recommendations in this report.

18. Any other issues?

See remainder of this report.

Annex 7 Methods

World Café

Group work during Zaragoza SWITCH workshop: “ZH2O SWITCH café”

Method: world café (see www.theworldcafe.com includes downloadable guidelines)

Summary of method:

- Three tables with fixed hosts, with large table sheet and markers
- People join one of the tables
- Discuss and document question 1, move
- Discuss and document question 2, move
- Discuss and document question 3, move
- Hosts prepare presentation with assistants
- Plenary presentations (documented)

Metaplan

Visualization method using 1/3 A4 cards and markers to allow all participants to contribute and share in a ‘safe / confidential’ way their true thoughts about key questions.

In plenary participants are given a question and ask to write down their answer on one (or more) cards following these rules:

5. write clearly
6. only one thought per card
7. use key words
8. not more than 3 lines of text on each card

Cards are collected and anonymously presented on a board by the facilitator. Contributions are checked on clarity, but anyone can help clarify the card, not necessarily the author.

Annex 8 People met

#	Full Name	Organization / position	Possible role in SWITCH	Email / phone / www.
1	Victor Bueno	Ay. Zaragoza, Agenda 21	Day-to-day SWITCH coordinator	vbueno@zaragoza.es
2	Javier Celma	Ay. Zaragoza, Agenda 21/director	Zaragoza Learning Alliance Coordinator.	unidadambiente@zaragoza.es
3	Joaquín García	Ay. Zaragoza, Tributary Management, technical	LA member, related with subtheme 6.4	unidadtasas@zaragoza.es
4	Mercedes Navarro	Ay. Zaragoza, Public Health Municipal Institute, director	LA member, related with subtheme 3.2	saludpublica@zaragoza.es
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6	Asunción Cañizares	Ay. Zaragoza, Agenda 21, industrial pollution control technical	related with subtheme 4.2	acanizares@zaragoza.es
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8	María Luisa Campillos	Ay. Zaragoza, Agenda 21/ Environmental Education Office	LA member, related with subtheme 6.3	informacionambiental@zaragoza.es www.zaragoza.es/agenda21
9	José Antonio Pinzolas	Ay. Zaragoza, Agenda 21/ Environmental Education Office	related with subtheme 6.3	jpinzolas@zaragoza.es
10	Javier Mozota	Ay. Zaragoza, Infrastructure Maintenance Service, Head	LA member, related with subtheme 3.1	jmozota@zaragoza.es
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12	Alfonso Narvaiza	Ay. Zaragoza, Water Integral Cycle Service, Head	LA member, related with theme 2 y subtheme 3.1	cicloagua@zaragoza.es
13	José María Galdo	Adults Education Centre Juan José Lorente, director	LA member, related with subtheme 6.3	josemariagaldos@eresmas.com
14	Enrique Viscor	Education Centre Ana Mayayo, director	LA member, related with subtheme 6.3	eviscor@eresmas.com
15	Encarnación Latorre	Expo Zaragoza 2008, technical	LA member, related with subtheme 5.1	elatorre@expo2008.es
16	Anabel Diez	Ay. Zaragoza, IMEFÉZ, technical	related with subtheme 4.2	aidiez@imefez.org

Microsoft Outlook contact details (embedded file)



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Joaquín garcia lucea.vcf



Mercedes navarro elipe.vcf

Annex 9 References

Contact Carol Howe / Erik Siepman, Chris Jefferies, Peter J. Bury or Victor Bueno for copies of documents mentioned below.

SWITCH website	http://www.switchurbanwater.eu
Zaragoza Expo 2008	www.expozaragoza2008.es
Zaragoza municipality website	http://www.ayto-zaragoza.es/default_en.html
Zaragoza Agenda 21 website	http://www.zaragoza.es:82/agenda21/
Zaragoza Water and Environment Library	http://www.zaragoza.es:82/agenda21/cda/
Publications	Various including on environmental indicators and public awareness documents
Zaragoza Expo 2008	ZH2O package, video, powerpoint presentation, website, book, publications
Pictures of scoping visit	http://www.flickr.com/photos/bury_irc/sets/72057594131813969/
Monitoring Peter J. Bury's inputs in SWITCH, including access to relevant bookmarks (on del.icio.us) and photos (on Flickr)	http://profbury.googlepages.com/switch
Ebro Confederacion (River Basin Agency)	http://www.chebro.es/



018530 - SWITCH

Sustainable Water Management in the City of the Future

Integrated Project
Global Change and Ecosystems

D 6.2.2. f Scoping report for demonstration city Birmingham

Due date of deliverable: January 31 2007
Actual submission date: January 26 2007

Start date of project: 1 February 2006

Duration: 60 months

University of Birmingham

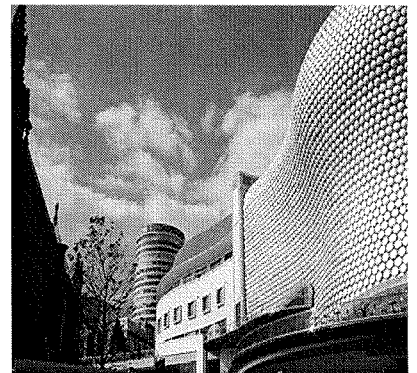
Revision [draft, 1, 2, ...]

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	



**Birmingham Scoping
Report - UK**

City Scoping Report



SWITCH

**Birmingham Scoping
Report - UK**

City Scoping Report

January 2007

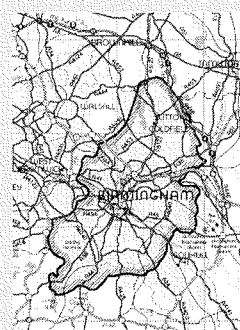
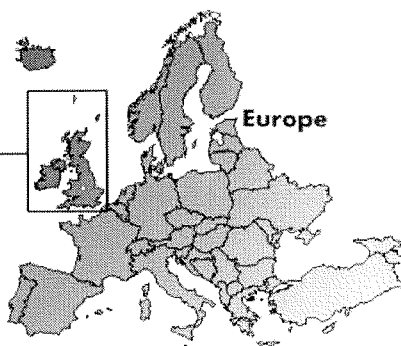
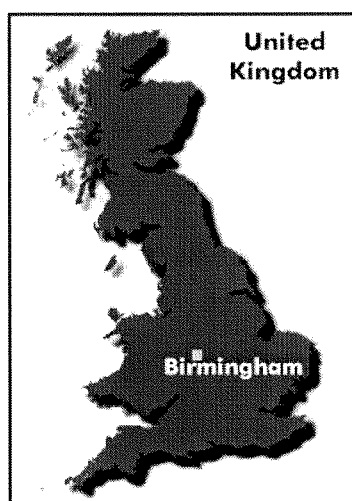


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1 Introduction

Birmingham considers itself to be the “second” city in the United Kingdom. It has a population of 1 million and lies at the heart of an urban conurbation known as the West Midlands which has nearly 6 million inhabitants. Birmingham's growth from a small Market town in the 9th and 10th centuries to become the UK's second city was built on engineering and technology developments throughout the 18th and 19th century. This was further fuelled by the region's extensive mineral resources, the vision of the cities leaders and their foresight to rapidly develop an efficient transport network involving road, rail and canal networks linking Birmingham to all other major cities in the UK. Birmingham's industrial fortunes have substantially declined over the last fifty years but the resulting legacy of industrial dereliction and brown-field sites is rapidly being swept away through major regeneration projects in the heart of the city and in the surrounding areas. Regeneration is being managed in accordance with Local Agenda 21 principals with sustainability a key word for any development approvals.



Birmingham is located in the West Midlands Region of the United Kingdom.

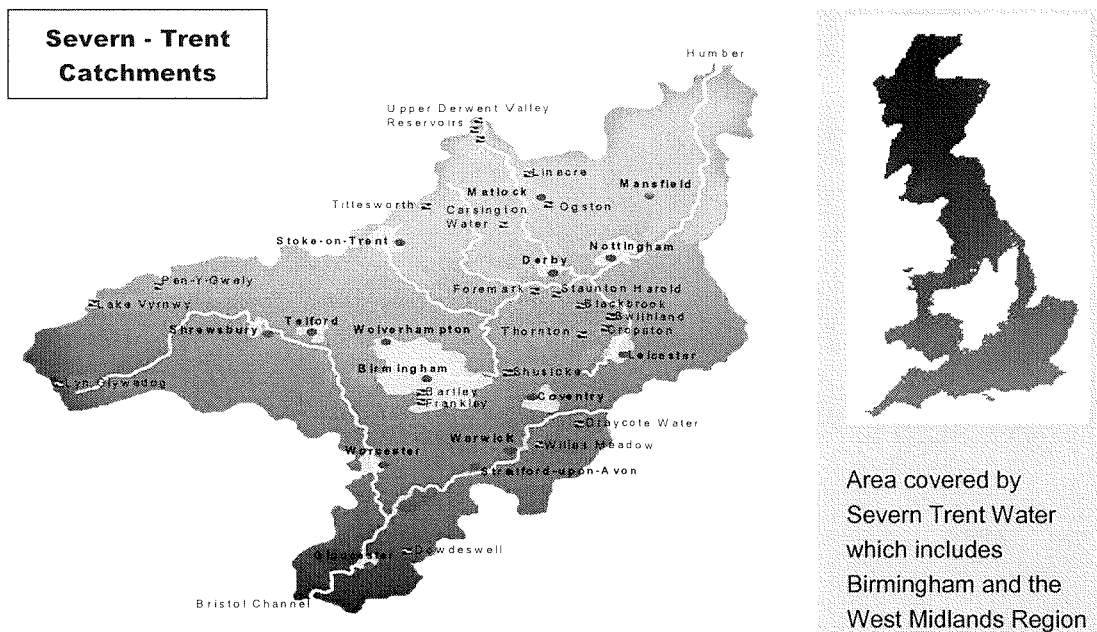
During the 19th century, at the time of the Industrial Revolution, Birmingham's population grew rapidly. Clean water was in short supply and there were major epidemics of water-borne diseases including typhoid, cholera and diarrhoea.

Birmingham City Council set about finding a clean water supply for the City and they identified the Elan and Claerwen Valleys' in Wales as potential water gathering and storage areas. Birmingham Corporation instigated this scheme and an Act of Parliament was passed for the compulsory purchase of the total water catchment area of the Elan and Claerwen Valleys (some 180 square kilometres).

In 1893 the building work began and it was completed by July 1904 when water first started flowing along 118 km of pipeline to Birmingham.

This very much catered for the provision of water to the city for the next 100 years. However through various Acts and Directive coming from London, and more importantly from Europe, Birmingham saw the water and sewerage provision of the Municipal Authorities passing into newly formed Regional Water Authorities, based upon river catchment areas. By the Water Act of 1991 these Water Authorities were turned into Privatised, Regulated Companies

along with the complete transfer of all water and sewerage assets. In the Birmingham area this was to the Severn Trent Water Company and this led on to an integration of water supply systems across the rivers Severn and Trent catchment region currently having some 9 million inhabitants.



Currently the new Regional Spatial Strategy is looking at development options to meet the government's national housing targets. In Birmingham there are currently some 400,000 dwellings (2001 Census) and the three options for Birmingham are for the addition of either a further: 70,000, 90,000 or 105,000 new houses to be built by the year 2026. This would have the effect of increasing the population to a total of approximately 1,300,000 inhabitants by 2026.

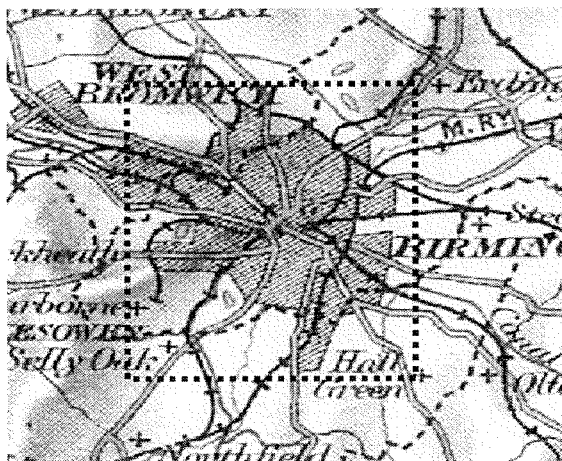


Inner City Regeneration Area in Birmingham on former derelict canal frontages.

2 Urban Development

Birmingham has radically changed over the last 200 years from a market town, through an industrial manufacturing hub into a modern mixed economy city. Population density in 1904

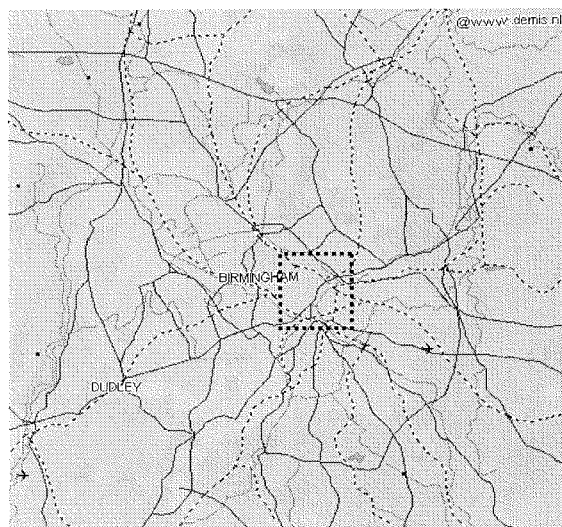
was given as 26 people per hectare. By 2004, however this had reduced from the 1955 peak of 43 down to some 36 people per hectare.



The City of Birmingham in 1904 showing the rural villages of Northfield, Hall Green, Selly Oak and Erdington as lying well outside of the urban limits of the city.

The population of the city in 1904 was approximately 530,000.

City Area in 1904



The City of Birmingham in 2004 showing how in the intervening 100 years the city had expanded its municipal boundaries by incorporating many of the outlying villages and in effect joining it with common municipal boundaries to the neighbouring Solihull, Dudley, Sandwell, Walsall and Wolverhampton Municipalities to form the West Midlands Conurbation. The population of the city by 2004 had expanded to some 1,250,000.

1904 City Area

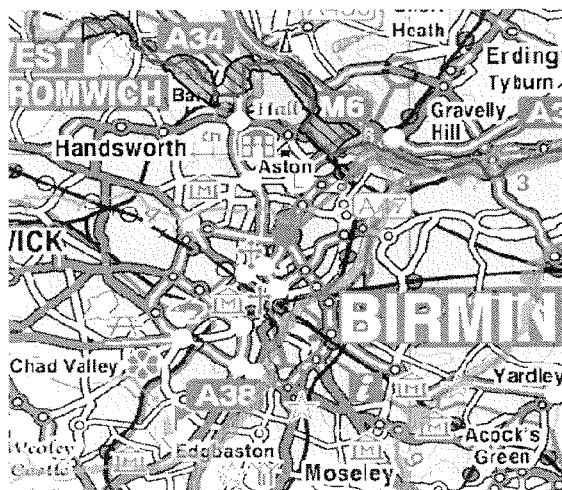


Current growth scenarios for the city show populations of somewhere between 1.35 to 1.45 million people by 2026 planning horizon.

This will impact on the ability of Severn Trent water Company to provide water from its current resources for the region if the Regional Spatial Strategy's housing growth forecasts are to be realised.

Although the city sits on relatively high ground at the head of the catchment to a major river (river Trent) and immediately to the east of the longest river in Britain (river Severn) it is nevertheless exposed to local flooding from the rivers Rea and Tame (Cole) as show below. As the city landscape progressively becomes more "hardened" and land use at the urban/rural interfaces change then there has been an increase in localised flooding of properties.

The numbers of "flash-flooding" within the city has increased quite significantly over the past 20 years and it is generally accepted that the peri-urban parts of the city has become more prone to such flooding particularly at the urban/rural interface.



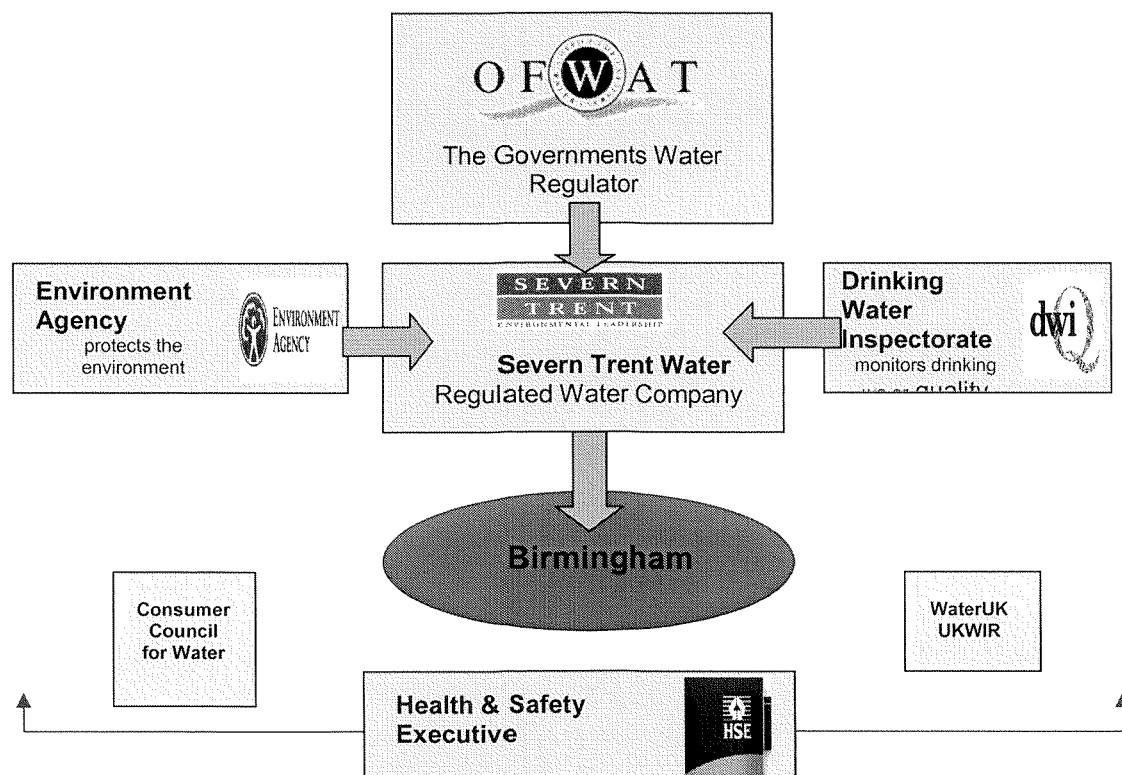
Indicative flood mapping shows areas of the city which are at risk of fluvial flooding.

(Note: This does not show areas that are liable to sewer flooding, flooding from rising ground water or over land flow).

3 Basic Water Organisational Framework for the City

Birmingham has a City Corporation (Municipal Authority headed by a Mayor) who are responsible for housing (public sector), local planning, public transport, highways, land drainage (but not the foul sewerage or surface water drainage systems), education and a number of other local government matters.

The key organisations that have a remit or statutory duty to manage the Urban Water System for the City of Birmingham are:



Water Management Organogram for the City of Birmingham

Other bodies or stakeholders are:

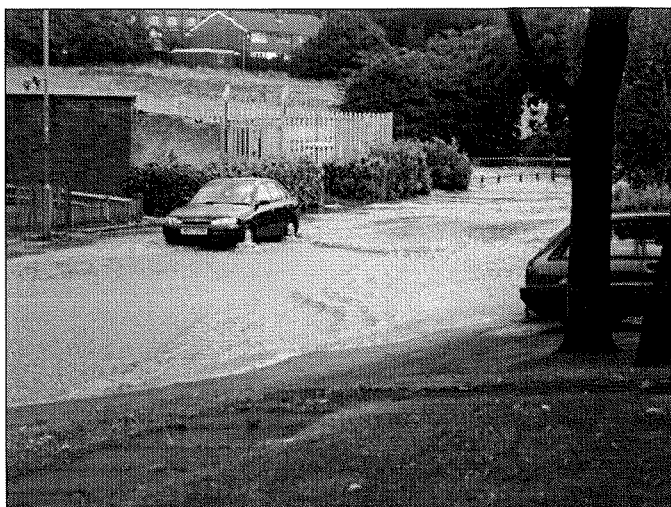
- British Waterways
- Defra (Department for Food and Rural Affairs)
- DCLG (Department for Communities and Local Government)
- West Midlands Regional Assembly
- Residents Groups
- Natural England
- Developers
- Industries Representative Bodies
- Adjoining Municipal Authorities
- Leisure, Parks and Amenity Groups.

4 Key UWM Issues in Birmingham

4.1 Urban Water Management Context

The privatised water company Severn Trent supplies most of the water services to the city and are responsible both for drinking water supply, drainage and sewage treatment. The Environment Agency are nationally (England & Wales) responsible for water resources and natural water quality. Water for the city is supplied primarily from external surface water sources and is imported into the city (much of it from mid Wales). Since the decline of the industry, groundwater has been rapidly replenished and rising groundwater tables are now a threat to the subsurface infrastructure of the city. Groundwater quality near surface is poor and groundwater effluents to the river Tame and its tributaries that pass through the city contain significant organic and metals contents. Leakage of the water supply pipe network has been significantly reduced in recent years and the reduction in industrial demand has helped the city to cope with increasing household demand. Measures to save water at the household level including metering and education in the adoption of good practices for water conservation are having some impact on water demand but presently these actions do not have high priority. Changing land use both within the city and in the region surrounding the city has resulted in more "flash" flooding of the urban areas and this appears to be exacerbated by climate change.

The manner in which responsibility for UWM has been split with the Water Company, Environment Agency, City Corporation and a number of other organisations including private owners has led to difficulties in adopting strong policies, Best Practice and an Integrated approach to UWM.



Birmingham (Moseley District) after the 2005 "tornado" hit the city.

4.2 Research Activities

The Learning Alliance approach to innovation for water sustainability has substantial potential in the city and is receiving strong interest as a new approach from the city's participants. It has been agreed that Arup, a partner in the integrated project, will provide the support for the development and coordination of the city's Learning Alliance. Development of the learning alliance approach will receive extensive development and testing through the participation of the city. With the Learning Alliance approach, the opportunities to explore governance and regulatory issues in the UK and the Birmingham context in particular will be developed. Issues of responsibility and ownership are also examined, particularly in the field of sustainable urban drainage. Moreover, the city has strong environmental technology research credentials as it has been the focus of important research on issues of sustainable urban river management, urban groundwater quality, urban aquatic ecology and biodiversity carried under recent UK based initiatives. These are expanded by the city planner's interests in applying innovative developments in green roofs for rainwater control and urban greening, and a range of investigations under the EPSRC feasibility study. Environmental case studies, within the current proposal, that are planned to be undertaken within Birmingham on the following:

- Impacts of green and brown roofs on urban ecology and hydrology (WP2.3-T1,2,3)
- Groundwater impacts on urban subsurface infrastructure and impacts on groundwater exploitation potential in response to climate change and sustainable urban drainage (WP2.3 – T4,5,6)
- Viral transport pathways in the subsurface affecting risk from infiltration and reuse of urban grey water, considering options for aquifer storage recovery for exploitation of rainwater. (WP3.3- T3 and WP2.3 – T4,5,6)
- Assessment of pollutant reductions from natural attenuation in the hyporheic zone beneath rivers. (WP5.3 – T4b)

Other work will include:

- Development of catchment scale approaches to assessing storm water management options (WP4.1)
- Examination and cataloguing of secondary reuse of stormwater and options for storm water control. (WP 4.2)
- Development and testing of integrated tools and systems for integrating water management aspects in the urban management process. (WP2.4)

5 Birmingham Learning Alliance

5.1 Objective

The Learning Alliance in Birmingham will present issues that they recognise as needing to be addressed in order to offer solutions to problems that are seen to be facing the city in the next 30 – 50 years. The LA will attempt to define, based on the research results, what demonstration project is considered most useful and which is most deserving for programme funding. It is presently envisaged that demonstration activities will take place in years 4 and 5 of the project. Possible options identified at this early stage are demonstration projects on: Eco-hydrologically sound options for brown roof implementation

in the city (WP 2.3); Aquifer Storage Recovery systems for rainwater harvesting, cleansing and reuse (WP3.3); a managed hyporheic system in an urban river channel for enhanced remediation of polluted groundwaters (WP5.4). Co-funding for these projects will be identified by the partners of the city Learning Alliance on the basis of the perceived value of each demonstration activity and its relevance to particular partners.

5.2 Members

LA Members

Birmingham City Council. Is responsible for the management and control of the Municipal Functions and Governance for the City of Birmingham including Health, Education, Housing, Employment Creation and Environment, public transport, planning, etc. They are also seen by many as leaders in the planning and implementation of Urban Renaissance and Regeneration - one of which is the current Eastside project.

Severn Trent Water Limited. STWL are the Regulated Water Company responsible, under the water Industries Act, for the provision of water and drainage services for the Severn and Trent catchments and in the current context for the City of Birmingham. They are a former public utility and are now a stock market listed Plc and subject to regulation by OFWAT (the Government's Official Regulator), the Environment Agency and Drinking Water Inspectorate. Severn Trent's Head Quarters are in the city.

Environment Agency. The Environment Agency was formed from the previous National Rivers Authorities who were responsible for the control of water resources and water quality. The EA now has the full remit to control air, land and water pollution. They issue and control IPPC licences and are responsible for flood management and coastal protection/management. They have recently become statutory consultees to the Planning Process.

British Waterways. British Waterways are a government statutory body responsible for the management of inland navigations. These are a collection of former private waterways and canals and they now form part of a national network. They are also holders of abstraction and discharge licences and answerable to the EA for water quality. They are funded through licences and predominantly government grants.

Solihull Metropolitan Borough Council. SMBC are the Municipal Authority for the adjoining Solihull area of the West Midlands conurbation. They have much the same areas of responsibility as Birmingham City Corporation for their area. SMBC has a very large regeneration proposal in planning stage at the present moment.

West Midlands Regional Observatory. The government body responsible for reviewing the state of the West Midlands, and providing access to information and intelligence on the key performance parameters of the city. This community of data and intelligence users represent both the key suppliers of data and the key users of information services. They work with partners to identify and map key information resources, and signpost these resources using an online catalogue.

Consumer Council for Water – West Midlands. The Consumer Council for Water is the industry "watchdog", set up to represent customers of water and sewerage companies in England and Wales and provide a strong national voice for customers.

West Midlands Regional Assembly. Currently the West Midlands Regional Assembly is responsible for developing and co-ordinating a strategic vision for improving the quality of life in the region. The Assembly is responsible for setting priorities and delivering regional strategies, including the West Midlands Spatial (Planning) Strategy.

The areas where the Assembly has specific responsibilities range from business and economic development through to social inclusion, and regional planning through to the environment. These responsibilities are outlined through their regional priorities, and it is the Assembly's job to communicate and deliver regional strategies for each of these areas, and to ensure they are tailored to meet the needs of the West Midlands.

Groundworks – West Midlands. Groundwork's is of a partnership that's vision is a society made up of sustainable communities which are vibrant, healthy and safe, which value the local and global environment and where individuals and enterprise prosper.

Groundwork's purpose is to build sustainable communities through joint environmental action.

They do this by developing and delivering partnership projects that enable an integrated and community-led approach to local regeneration. Use environmental improvements as a means of achieving social and economic change and help individuals and organisations contribute to sustainable development

They are heavily involved in the Eastside Regeneration project in Birmingham.

Advantage West Midlands – Regional Development Agency. Advantage West Midlands is the Regional Development Agency (RDA) for the West Midlands, the region at the heart of the UK which includes the seven metropolitan districts of Birmingham, Coventry, Dudley, Sandwell, Solihull, Walsall and Wolverhampton.

Advantage West Midlands was established by the Government in 1999 along with seven other RDAs, to transform England's regions through sustainable economic development. All RDAs are non-departmental public bodies that are accountable to the Department of Trade and Industry.

UKWIR – UK Water Industries Research. UKWIR was set up by the UK water industry in 1993 to provide a framework for the procurement of a common research programme for UK water operators on 'one voice' issues. UKWIR's members comprise 24 water and sewerage undertakers in England and Wales, Scotland and Northern Ireland.

British Water. An organisation dedicated to the promotion of the interests of British Water Industries including water companies, manufacturing operations, etc. They organise international trade missions and provide a platform for contacts through the various British Embassies Commercial Attaché's.

CIWEM – Chartered Institution of Water and Environmental Managers. CIWEM is a professional body governed under Charter looking after the interests of Water Engineers and Environmental Managers in the UK (and increasingly internationally)

OFWAT – The Office of the Water Regulator – England & Wales. OFWAT is the Water Industries Regulator for England and Wales established by government to set and regulate the pricing levels of the Water Companies (in England & Wales). OFWAT reports annually to Government on the performance of each water company and advise government on the need for further legislation of the operator licences.

Eastside (Regeneration) Team. Eastside is Birmingham's biggest physical regeneration project, and is part of Birmingham City Council Development Directorate's Planning and Regeneration Service. It is a key component in Birmingham's renaissance, preparing the city for the future by encouraging investment and job creation, as well as economic and cultural growth. The ten-year project presents the challenge of regenerating 170 hectares (420 acres) to the east of the city centre, expanding the size of the city centre through the development of high quality urban design.

Developers, NGO's, DEFRA, DC&LG, Nature England, Association of British Insurers, etc. - Will all become represented in the expanding Learning Alliance.

5.3 Expanding the stakeholders

The next stage in developing a fully functioning Learning Alliance is to expand this to attract representation for other stakeholders such as NGO's, National Bodies (Government Ministries), Developers and House Builders, Insurance Representative Organisations and others. It is planned to hold a separate initial contact meeting with a number of these stakeholders in order to introduce SWITCH to them and to undertake some further scoping study work so that a more "balanced" view is obtained to inform the research and demonstration processes. The full LA will thereafter meet as programmed.

5.4 The next dimension for Birmingham Learning Alliance

The Birmingham Learning Alliance stakeholders are to a certain extent involved in some parallel initiative such as:

- The DEFRA Integrated Urban Drainage Pilot Studies under governments the Making Space for Water programme. Where it has been agreed that a representative from the Birmingham Learning Alliance will sit in on their meetings and they will provide a repetitive to sit on the Learning Alliance meetings.
- Eastside City Park Team. Birmingham Learning Alliance will have a representative sitting in on the design team meetings to liaise and share information on this important project.
- Regional Climate Change Partnership. Again we are hopeful of exchanging information between SWITCH and the Climate Change Partnership which may extend to representation at meetings.

Refer to Section 7 – Linkages with other city – national initiatives.

A Birmingham Specific SWITCH web site will be developed along with a News Letter. The web site will be launched in May 2007 and the News Letter first edition will be sent out in April 2007.

Benefit will be gained from greater local/regional and national press coverage and an article on SWITCH will hopefully be published in WEM (the Water and Environmental Magazine of the Chartered Institution of Water and Environmental Managers) in spring 2007.

Opportunities for local press articles are expected to come from increasing contact through the Learning Alliance and higher level contacts with the City Mayor's Office are being planned for.

6 Activities

The Birmingham Learning Alliances has to date:

- Held three meetings
- Individual members have completed an LA Questionnaire and attended a Scoping Study Meeting
- Attended two SWITCH presentations on;
 - Green and Brown Roofs
 - Current Birmingham based Research
- Attended a workshop
- Completed a Key Stakeholder Questionnaire
- Hosted Key Stakeholder Scoping Meetings

7 Linkages with other city – national initiatives

As stated above the Birmingham Learning Alliance has started to develop lateral linkages to other either city, regional or national initiatives which have recently been completed or are currently on-going. These are:

- **Defra Pilot Study - Making Space for Water.** Fifteen new projects are now considering how to reduce the impacts of urban drainage flooding in towns and cities across England and how best to adapt to the inevitable consequences of climate change. More intense and frequent rainfall events are expected as a result of climate change. The studies, funded by Defra, will pinpoint areas at risk, identify the causes and consider the best ways of managing urban drainage to reduce future flooding. These 15 pilot studies will test new approaches to reduce the future impact of urban drainage flooding on people's lives and their businesses. This will help us understand the problem of surface water flooding better in urban areas and will help us consider how arrangements can be improved in future. Birmingham City Council and partners pilot study will work to gain an improved understanding of a whole range of flooding issues in the Upper Rea catchment, an area which includes the former Rover car plant in Longbridge and in which significant redevelopment is expected.
- **Climate Change Partnership** – West Midlands Regional Assembly. This is a regionally based strategic group looking at the effects on climate change scenarios on the urban areas of the region.
- **SMURF.** SMURF stands for Sustainable Management of Urban Rivers and Floodplains and is an EU developed project. Urban rivers in the UK suffer from a number of environmental problems, brought on by years of pollution from surrounding industry and development, in addition to heavy modification and re-routing. The SMURF Project tackles these problems by integrating the planning and management of land-use, water quality, ecology and flooding in a sustainable way. This initiative has been completed in 2005 and it is important that the findings and work of SMURF are understood and incorporated where relevant into the SWITCH Programme.



The river Rea as it passes through the city in a culverted channel.
Canon Hill Park - Birmingham

8 The Learning Alliance Method

8.1 General Approach

Initially informal and formal discussions were undertaken on a "one-on-one" basis with organisations considered to be Key Stakeholders in the City of Birmingham and the West

Midlands Region. In these discussions the objectives of SWITCH and the concept of developing a specific Learning Alliance for the City of Birmingham (West Midlands Conurbation) were presented. This was initially to disseminate information, to gain confidence in the approach being adopted and most importantly to get “stakeholder commitment” to the creation of a Birmingham Learning Alliance and a buy-in to SWITCH.

A First Contact Group meeting was arranged which followed up on the initial stakeholder discussions and presentations where made to the Key Stakeholder Representatives in attendance. Mike Morris of Greenwich University gave a presentation on the concept of Learning Alliances and the tools available to facilitate these.

The meeting also acted as a floor for discussion/comment on the roles of the individual stakeholders represented their concerns and linkages.

The Learning Alliance meeting was offered as a forum for inter-stakeholder discussion and a trading floor for ideas and opinions to moving more towards an IUWM approach in Birmingham.

8.2 Key Stakeholder Questionnaires

As part of the first contact group meeting of the Birmingham Learning Alliance a questionnaire was developed that sought to identify key aspects of Urban Water Management in Birmingham (and adjoining urban areas).

This questionnaire is reproduced in Appendix B

The questionnaire was then followed up by a series on face-to-face Scoping Meetings that attempted to elaborate upon the answers to the completed questionnaire (or in the cases where stakeholders had been unable to complete these assisted them in understanding/interpreting the question and presenting answers to these).

The objective of the Scoping Meetings was to assist in defining the direction that the stakeholders wanted to see research following that appeared to them to provide them with a practical demonstration of a “paradigm” shift in the cities current approach to UWM.

8.3 Initial analysis of results

From the 7 completed stakeholder questionnaires and the Scoping Visits, the following ranked outputs were obtained:

Table 1.

ID	Question	Rank	Answers
1	Importance of aspects of IUWM for Birmingham over next 30 – 50 years time.	1	Water demand and storm water management
		2	New water supply options and safe re-use.
		3	Reducing water use in sanitation
2	Other important IUWM issues	1	Surface water disposal and control of polluting substances
		2	Demand management through metering.
		3	Sustainable ground water management
3	What are the most important issues you have identified that need to be addressed.	1	Control of polluting substances at source.
		2	Affordability
		3	Water metering.

4	Innovations to be addressed	1	Storm water management and quality (WFD)
		2	Reuse of wastewater/storm water - groundwater
		3	Source control (quality and volume) SuDs.
5	Innovations that you would like to see Implemented/developed	1	Better understanding of the processes of diffused pollution and effects on water quality.
		2	Addressing financial incentivisation methods for IUWM.
		3	Urban flooding.
6	How does your organisation keep track on R&D in IUWM	1	Universities
		2	Publications
		3	Professional bodies/representative organisations (UKWIR, CIWEM, CIRIA, WRc., etc.
7	Do you have any collaborative platforms or links with R&D	1	UKWIR,
		2	WRc.
		3	Universities
8	Do you have "in-house" R&D capabilities.	1	2 said "yes" - (Environment Agency and STWL)
		2	5 said "no".
9	Most important legislation/regulation for you organisation in UWM	1	Water Framework Directive
		2	Water Industries Act
		3	Water Resources Acts 1995 & 2003.
10	How do you view this information in terms of : <ul style="list-style-type: none">• Very helpful,• helpful,• a guideline only,• difficult or a• blockage	1	The majority of stakeholder interviewees saw legislation as helpful but: <ul style="list-style-type: none">• Lacking realistic time frames, definition and clarity.• Some real concerns about interface issues on roles and responsibilities (SuDS)
11	Key innovations in UWM are currently of interest to your organisation.	1	Synergistic effects of pollutants and pathogens in ground water
		2	Lack of effluent/grey water re-use agreed standards.
		3	Better understanding of IUWM risks.
12	What are the two most important research activities to develop a sustainable IUWM system in the cities of tomorrow.	1	Influencing peoples behaviours and expectation in water use and cost of service provision.
		2	Control of diffused pollution
		3	Demand management and reuse.

Table 1 shows the ranked answers to the stakeholder questionnaire (1 = highest ranking) and represent the 3 highest scoring answers to each completed question.

From the above it can be seen that reoccurring themes are:

- Concern over **diffused pollution** and its effects on **water quality** (surface and groundwaters).
- **Source control** (water quantity and quality)
- Demand management – **metering**
- **Reuse** (final effluent/grey and storm water) and **associated risks**.

Other information:

- Most organisations rely on **third parties** for R&D.
- Legislation is seen as **helpful** but lacking in clarity particularly at **responsibility interfaces**.

In answer to "other observations and comments" 3 observations were made:

- Expand the understanding of the value of urban water management to place much greater importance on;
 - Amenity value and open spaces
 - As cooling water to off-set "heat island" type effects
 - Use of ground water as a sink for source control/SuD.
- Establish a city-wide Water Manager/Commissioner whose role it will be to address the stratified UWM responsibilities and to champion sustainable water practice at the city level. (*Could this be SWITCH?*)
- How do we get a better understanding of the risks and threats in IUWM.

9 Activities

9.1 Planned activities – next 12 months

The LA will continue to meet and has 2 meetings planned for this year. There will also be a series of other LA meetings (to be arranged) to on-board other identified stakeholders.

Birmingham LA Programme 2007

Activity	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
LA Meetings					◆					◆			
News Letter			◆						◆				
Website						◆							
LA Training		◆											
Workshops						●			●				
Liaison with other initiatives	—————												

In addition a Birmingham SWITCH web site will be developed (off the main www.switchurbanwater.eu web site) and launched in July 2007. We are also planning to issues two SWITCH BLA newsletters, one in April and the other in October 2007 respectively.

Workshops are planned for:

- Green & Extensive Roofs – July 2007
- Natural attenuation of pollutants in hyporheic zones – October 2007.

The attendees are to be the Learning Alliance Member organisation in general, Environment Agency, Planners, Eastside Team members/Groundworks, Solihull Metropolitan District Council, others from parallel initiatives.

9.2 Information trading

Every opportunity will be taken to trade information with other city based initiatives such as the Defra Pilot Study and the Climate Change Partnership.

In addition SWITCH will become the natural home for all matters relating to water issues in Birmingham and the surrounding region and be seen as the place where stakeholders seek and deposit information on matters relating to IUWM in the City of Birmingham. This means that we will develop close working ties with the Groups leading the major urban regeneration projects in and around the city of Birmingham. The major one currently under planning are Eastside, North Solihull and Longbridge (the site of the former Rover Car Production Plant). Through the Learning Alliance and direct contacts with these groups SWITCH will seek to influence these development and look to use these as potentials for our Birmingham IUWM Demonstration Project.

9.3 Learning/Training needs

Learning Alliance members are very aware of the need to address, through activity based research, the way we manage water in our cities of the future. The organisations that they represent are generally quite active across a range of sustainability initiatives and they are well able to associate this with the effects of climate change and demographic pressures. However what is not often quite so clear about is how this can be addressed most effectively through a Learning Alliance approach and how best advantage can be gained by this approach. We have therefore identified a training need in as much as the Learning Alliance Members would benefit from some structured training on structure/form and target setting.

It is considered that Terms of Reference for the City Facilitators will greatly assist in this process.

9.4 Participatory benefit mapping

At an appropriate point in the next 12 month programme an LA appraisal questionnaire will be issued to all LA Members in order to evaluate the benefits (and missed opportunities) of the Birmingham LA, get feed-back and reinforce linkages in order to generate better outcomes.

10 Conclusions

10.1 Learning and course-correction

As a learning opportunity the scoping study questionnaire and the subsequent Scoping Meetings provided useful information on the potential “up-take” of SWITCH into the individual stakeholder’s organisations. This information will also act as the baseline from which the future success of SWITCH in the City of Birmingham will be measured. Most importantly, however, it is the concept that a Learning Alliance can integrate the municipal, regional and national bodies so that they can face up to the UWM challenge in their city of the future whilst at the same time being able to define the appropriate research needs a practical and acclaimed demonstration project in their city.

A vital lesson learnt at this point in the project is that a Learning Alliance is an evolutionary and dynamic process rather than a point in time and the Birmingham LA has been no exception to this. Key to this process is understanding that:

- Stakeholder availability is a constraint
- Finding the “right” stakeholder representative is key.
- Being able to look over the top of toady's problems and having the confidence to vocalise issues and concepts sometimes well away from their organisational corporate policies
- Securing a few “champions” is vital
- Having a well thought through roll-out programme for expanding the stakeholders is necessary.
- Persistence pays-off

A1 Appendix

Stakeholder Pre-Scoping Visit Questionnaire.

Sustainable Water management Improves Tomorrow's Cities Health Scoping Visits – Survey

We are proposing to carry out scoping meetings with individual stakeholders concerned with water management in Birmingham. The aim is to gather more detailed information on the strategic water issues that are important for the Birmingham conurbation that will inform the future research agenda of the SWITCH consortium. We are seeking to identify the most important issues that will either contribute towards developing long-term sustainable water management in the Birmingham Conurbation or will block this ambition. To facilitate the meetings, we have identified several questions, the answers to which should guide discussions during the meeting and will provide a very useful platform upon which to build the Birmingham Learning Alliance. The aim is to ensure that Birmingham Learning Alliance interests feed into the knowledge agenda of the global SWITCH project and that SWITCH' research and training can provide useful results for the Birmingham Learning Alliance members.

Thus, we would be very pleased if you and, if appropriate, your colleagues could develop answers or thoughts on the attached questions in advance of a proposed scoping meeting.

Note:

Recognising the pressure on everyone's time, we hope that developing short, one or two line answers to each question will speed up this initial stage of knowledge gathering.

A **free text** area is included in Question 13 to allow you to add further information or make any comments that you feel would be relevant to the SWITCH programme or to the development of the Learning Alliance concept on Birmingham.

We would like to thank you in advance for your kind response. Please note that the information provided will not be distributed to other parties directly without permission. It is our intention to prepare a synthesis of all respondent's written replies, along with the results of the scoping meetings, to be made available for information and further comment once all meetings have been completed.

Respondents name:

Organisation:

-
1. How would you rank the following areas in terms of their importance for sustainable Integrated Urban Water Management (IUWM) in the Birmingham Conurbation over the next 20 to 30 years? (1 – highest, 9 – lowest)
 - a. Data Acquisition and Decision Support Systems for IUWM []
 - b. Storm Water Management []
 - c. Safe Waste Water Reuse []
 - d. Water Demand Management []
 - e. New Supply Options (National Grid, Decentralised Supplies) []
 - f. Governance and Institutional Reforms at National/Regional levels []
 - g. Financing and Cost Recovery []
 - h. Reducing Water Use in Sanitation and Waste Management []
 - i. Waterscape Planning for Improving Urban Living Spaces []
 2. Are there other general areas that you would also regard as important that are not covered by the headings under Question 1?
 - 1.
 - 2.
 - 3.
 3. Within the most important areas you have identified what specific issues/problems need to be addressed?
 - 1.
 - 2.
 - 3.
 - 4.
 4. What innovations to resolve the most important issues/problems you have identified are you aware of and how are these being implemented and by whom in the following domains:
 - a. Technological...
 - b. Organisational...
 - c. Legal or Regulatory.....
 - d. Financial.....
 5. What new innovations would you like to see implemented/ developed/ promoted to advance IUWM in Birmingham?..
 6. How do you/your organisation keep track of research developments in the field of IUWM?..
 7. Are you or your organisation involved in any collaborative platforms or other established links for knowledge sharing locally and nationally in relation to innovation in IUWM? If yes, please name the particular platforms or links.
 8. Do you or your organisation have access to in-house or external R&D capabilities for IUWM? If yes, please indicate what these capabilities are.

9. What legislation or regulations most impact on you/your organisation in the field of water management?

10. How do you view this legislation/regulation to the implementation of you or your organisation's role in providing or developing sustainable water management practices?

		Tick ✓
a	Very helpful	
b	Helpful	
c	Used only as guideline	
e	Difficult	
e	A blockage	

11. What key innovations in water management are currently of interest/being reviewed by you/your organisation that cannot be implemented/put into practice/used because of incomplete research or information?

12. What in your opinion are the two most important research activities that need to be completed to develop sustainable urban water management in the cities of tomorrow?

A

B

13. Other observations and comments:

Phil Sharp, ARUP
Birmingham Learning Alliance Coordinator

Rae Mackay, Birmingham University
SWITCH Research Theme Leader

SWITCH – SCOPING VISIT

Workshop 18.07. – 19.07.2006 Hamburg,
Germany

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A 1:	Hamburg report on scoping visit, July 18 / 19, 2006. Prepared by Peter van der Steen, Carol Howe (UNESCO – IHE) and Jaap Pels (IRC)	
A 2:	Wachsende Stadt – Aber wie? Strategien der Stadtentwicklung Hamburgs – Wilhelm Schulte	
A 3:	Metropole Hamburg – Wachsende Stadt – Gerti Theis	
A 4:	Theme 1 Urban water Paradigm Shift. Sustainability and Risk Indicators – Peter van der Steen	
A 5:	Sustainable Water Management Improves Tomorrow’s Cities Health – Carol Howe	
A 6:	Hamburg - SWITCH (Sustainable Water Management Improving Tomorrow’s Cities Health) – Heike Langenbach	
A 7:	Water Management and Flood Protection in Hamburg – Brigitte Groß	
A 8:	Strategies for Stormwater Management in Hamburg – Hans-Otto Weusthoff	
A 9:	Learning Alliances for Scaling up Innovation Approaches Hamburg – Jaap Pels	
A 10:	Fact Sheet Research Project ‘Trotting Course Farmsen’	
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1. COURSE SCOPING VISIT HAMBURG

The SWITCH scoping visit in Hamburg required two days and lasted from the 18th of July until the 19th of July 2006. It was organised by the city coordinator Heike Langenbach and the SWITCH team Jochen Eckart and Wiebke Holste of the HarbourCity University Hamburg. Information on the participants can be gathered from the list attached (q.v. A18).

Day 1 – Tuesday 18.07.2006

The first day the reception took place at the Stadtmodell (Wexstraße 7) in Hamburg. Heike Langenbach (HarbourCity University - HCU) introduced the participants and gave a short impression about the workshop. The following presentations were held:

- Wilhelm Schulte (Stadtbaudirektor) of the State Ministry of Urban Development and Environment Hamburg (BSU) presented challenges Hamburg is currently facing in terms of urban planning (q.v. A2).
- Gerti Theis (BSU) held a presentation about the International Building Exhibition 2013 and various projects with their future perspectives (q.v. A3).
- In context of the scoping visit Peter van der Steen (UNESCO-IHE Institute for Water Education) gave a short introduction about 'Theme 1 – Urban Water Paradigm Shift'. Furthermore he operated a discussion about sustainability indicators relevant for the city of Hamburg (q.v. A4).

The afternoon session comprised an excursion. Possible research projects and demonstrations areas were visited to get an impression about the challenges Hamburg is facing. The visited projects covered a broad range of existing problems in relation to the location.

- The former trotting course Farmsen and the military base Jenfeld are situated in the geestland.
- Neu-Allermöhe and the possible demonstration projects situated on the river island of Wilhelmsburg (IBA 2013 and IGS) are located in the marshland.
- The HafenCity and Reiherstieg are situated at the waterfront.

A short introduction to each of the visited sites is given in so-called fact sheets. They also comment on urban planning and the water management (q.v. A10 – A16). Further explanations were made at the sites.

Day 2 – Wednesday 19.07.2006

The second day the workshop mainly concentrated on the learning alliance. It took place at the Institute 1-07 Urban Design and Planning of the HarbourCity University (HCU). The following presentations were held:

- Carol Howe (UNESCO-IHE Institute for Water Education) presented general aims of SWITCH and the relevance of the international level (q.v. A5).
- The members of the learning alliance gave a short impression about their work.
 - Heike Langenbach - Harbour City University (q.v. A 6)
 - Brigitte Groß - BSU (q.v. A7)
 - Hans-Otto Weusthoff - Hamburg Watter Inc. (q.v. A8)

- Jaap Pels (UNESCO-IHE Institute for Water Education) held a presentation about the learning alliance and started a brainstorming to collect ideas about the demonstration project and for the members of the learning alliance to exchange their aims within SWITCH (q.v. A9).

The afternoon session solely was preserved to the consortium members. The discussion that was started in the morning concerning the possible demonstration project and the following work steps for the learning alliance were deepened.

2. RESULTS SCOPING VISIT HAMBURG

2.1 SWITCH process

The overall aim of SWITCH is to provide a holistic and integrated approach to the entire urban water management. It is based upon the Millenium Development Goals 2015 (MDGs) concerning sustainable development. Decisions are related to indicators of sustainability and risk. SWITCH consists of various components:

- research to develop innovations
- demonstration at semi full scale (e.g. single housing project)
- training.

The different components are joint by the constitution, the work and the feedback of the learning alliance on different levels (q.v. chapter 2.4 and A9). A major aim of SWITCH is the dissemination of gained information and the implementation of the results into planning practice. The implementation is a main theme in each of the classified groups: research activities, demonstration activities and the learning alliance. SWITCH should not remain a theoretical construct and another research project but rather make a difference in practice.

General aspects SWITCH

Following (discussed) general aspects should be taken into consideration in the SWITCH process Hamburg (research project, demonstration project, learning alliance):

- Urban planning and water management follow different planning paradigms. On the one hand the present urban planning is characterized by urban growth, densification, redevelopment of brownfield sites and inner city development. The paradigm of urban planning is characterised by centralization. On the other hand the re-thinking of water management led to the strategy of decentralized storm water management. To imitate the natural water cycle the surface water should be left at its catchment area. Aspects like the infiltration of surface water and water reuse became more important. It should be investigated if both paradigms (urban centralization and storm water decentralization) are compatible.
- A meaning of sustainability is necessary which includes ecological, social, cultural and economical benefits. Within this holistic meaning of sustainability not just sustainable water management has to be taken into account but further sustainability of life. The general SWITCH sustainable and risk indicators must be refined and adapted to the conditions of Hamburg. The indicators could support the decision making process by means of scenarios and multi-criteria analyses. The sustainable and risk indicators could also be used to select and analyse case studies for water sensitive urban design (WSUD). Following sustainable and risk indicators were discussed:
 - Social aspects of water use (e.g. different behaviour of the various ethnics groups, different awareness of water)
 - Cultural aspects of water use (e.g. cultural issues of building and maintenance)
 - Financial aspects (e.g. people often do not realise the value of water because of the sufficient fresh water which is quite cheap in Hamburg)
 - Ecological sustainability (e.g. consumption of energy).

- SWITCH should use existing data. The project does not serve to raise large extent data. If it is possible, the research and demonstration project should use models and scenarios to inquire and update data.

Co-operation

All work packages are a part of a global learning alliance. To improve the efficiencies and synergies of SWITCH, co-operations between the several work packages are necessary (e.g. interchange of research questions or search of innovation for the demonstration project). For WP 5.1 following possibilities were discussed:

- Theme 1 'urban water paradigm shift' and theme 2 'governance and institutional change' will be surveyed in all demonstration cities. The analyses of the paradigm shift, the sustainability indicators and the decision making process overlap with WP 5.1. Co-operations with this work packages are convenient.
- The WP 1.4 (Marc Soutter, Switzerland) has comparable objectives and topics. A co-operation could be interesting.
- There are already contacts to the demonstration cities Zaragoza and Birmingham.

To Do:

Task	Date	Responsibility
Contact WP 1.4		HCU
Contact other SWITCH WP		HCU

2.2 Research project

Content research project

The content of the research project WP 5.1 Water Sensitive Urban Design (WSUD) was discussed. The project should determine planning instruments which are able to improve water qualities as well as qualities of urban design. The parameters of sustainable water management should be integrated in urban and landscape planning. A broad range of water management problems in Hamburg were discussed. The members of the learning alliance put the main emphasis on following problems:

- Hamburg Water Inc. and the Department of Construction and Operation as part of the State Ministry of Urban Development and Environment Hamburg (BSU) discussed following themes, which correspond to their every day problems:
 - Fluvial flooding in the inland
 - Surface water treatment
 - High/ rising ground water tables.

The themes gain importance. Because some present sewers cannot guarantee additional effluent (lack of capacity), the canalisation must relieve from (existing or additional) surface water to facilitate the urban development of Hamburg. The different demands are combined in the strategy of decentralized storm water management. This strategy contains a wide range of infiltration, retention and delay of effluent measures. The implementation of measures has already started. However there are good experiences, both members of the learning alliance are interested in further research

and demonstration projects for storm water management. The themes tidal flood management and the protection of groundwater are of less importance.

- The Department of Spatial Planning as part of the State Ministry of Urban Development and Environment Hamburg is interested in the themes:
 - Water as an element to develop attractive locations
 - Water management in districts in conversion.
- The urban development of Hamburg is characterized by urban growth, densification, redevelopment of brownfield sites and conversion. The development should be based upon the existing technical infrastructure and manage the problems (lack of sewer capacity, high groundwater tables etc.). Also the element water should be used to develop attractive locations. Water could facilitate a high quality of housing, increase the quality of live and attract new groups of inhabitants.

Next steps research project

According to the description of WP 5.1 the next step of the research project is a review of planning strategies of WSUD (small scale case studies). In Hamburg a broad range of urban water management problems exist. Categories with comparable problems and objectives of water management have to be arranged. The categories should facilitate the selection of the small scale case studies. Possible categories are:

- Geestland: In the geestland a wide range of water management measures (infiltration, retention, delay of effluent etc.) could be realized. Different possibilities of infiltration (because of various conditions of the soil) have to be taken into consideration.
- Marshland: The marshland is characterized by high ground water tables. On one hand, the high ground water tables require a drainage system and a delay of effluent. On the other hand the infiltration of surface water is not possible. These problems have to be solved by water management.
- Waterfront: At the waterfront often a high ecological quality has to be taken into consideration. When the area is located on the waterside of the main dike line a special flood protection (object protection, flood gates, dwelling mounds, elevated streets etc.) is necessary.
- Fluvial flood areas: In some districts problems with fluvial floods (e.g. sewer overflows) exist. The water management measures (infiltration, retention, delay of effluent etc.) should prevent streets and houses from flooding.

Co-operation research project

There are several connections between the research project and the other parts of the SWITCH process. It was discussed to establish an expert level (of the learning alliance) to support the research project. The expert level could take on the following functions:

- The concretization of the research questions should be consulted by the learning alliance. Thus an orientation at the problem of the every day work could be ensured.
- The learning alliance could evaluate the results of the research project. The members of the learning alliance assess whether the results correspond to their every day experiences. Also the information sharing between the research project and the learning alliance could be encouraged.

To do:

Task	Date	Responsibility
Interim report research project		HCU

2.3 Demonstration project

Selection of the demonstration project

The demonstration project of WP 5.1 (WSUD) is meant to implement the results of the research and the suggestions of the learning alliance into planning practice. Beforehand the workshop the present learning alliance (HCU, BSU, Hamburg Wasser) already discussed several possibilities of demonstration activities within the city of Hamburg. The various participants of the existing LA have varying interests and therefore different ideas about a suitable demonstration project (q.v. chapter 2.4). As already set out in an earlier stage of the project the emphasis was put upon the area of the International Building Exhibition in Hamburg (IBA 2013). Nevertheless further sites were examined to check their potential for SWITCH (e.g. former military base in Jenfeld q.v. A11). Sites that were taken into consideration were:

- Housing and Working Reiherstieg
- Industrial development Reiherstieg
- New Centre Wilhelmsburg (central lake)
- Housing Wilhelmsburg East
- Reiherstieg/ Approaches to Water
- Living and Working Spreehafen
- Waterfront Süderelbe / Landscape at the river
- New Living at Jenfeld

Decision demonstration project

Challenges and possibilities of different sites for the demonstration project were discussed in the workshop between the members of the present learning alliance. It was finally decided that:

- An **overall management for the water system of the river island of Wilhelmsburg** should be prepared.
 - This water management closely has to take into account the future urban development with all its variations.
 - The goal is to manage the various interests in terms of water and to gain a balanced water system.
- It has to be checked whether the overall management provides **innovation potential** (e.g. synergy effects).
 - The aim is to achieve a self-sufficient and maintainable water system through sensible management.
 - In terms of urban development an overall water management seems to be important and necessary for Wilhelmsburg. It can deliver important ideas for the international level.

- The overall water management should be related to the **interests of the IBA 2013**.
 - Wilhelmsburg as a river island presents a more or less self-contained water system.
 - The IBA 2013 delivers several suggestions for urban development related to the key concept 'Metropolis Hamburg – Expanding City'. Within the next years the International Horticultural Exhibition (IGS 2013) and the IBA 2013 will bring forward development of Wilhelmsburg.
 - Ideas for the water management should be introduced on the level of the IBA 2013. Ideally the concept of the IBA should be adjusted to the overall water management. Guidelines for the IBA can help to introduce the results of the research studies on the level of an exemplary demonstration project.
 - The cross linkages to the IBA serve to ensure international dissemination of the results of SWITCH.

Small-scale demonstration project

Next to the overall management of the water system a small-scale project can serve to introduce the results of the research and the ideas of the water management on the local level (e.g. single housing project). Constraints and vagueness of future planning have to be taken in consideration before the final choice is made. The learning alliance will play a major role for the future decision making process.

Three projects in context of the IBA 2013 were shortlisted to be suitable for the aims of SWITCH:

- Park Reiherstieg
- Industrial development Reiherstieg
- Residential development south of the IGS 2013.

The central lake in Wilhelmsburg was discussed controversially as a possible demonstration project. Concerning the latest results the objections prevail (e.g. the schedule of the lake and the one of SWITCH do not match). Also the housing Wilhelmsburg East was discussed controversially. This project is judged to be less suitable for SWITCH because of several restrictions e.g. in terms of nature conservation.

Further selection demonstration project

The schedule for the realisation of the demonstration project is closely linked to the schedule and the action plan of WP 5.1 and the duration of SWITCH. The realisation has to take place within the next four to five years which is of relevance for the choice of a site:

- The project has to be thriven so far that it can be accomplished within the schedule of SWITCH.
- Further it has to be still as flexible that the results of the research and the suggestions of the learning alliance can be introduced to the project.

The decisions made about the demonstration project concretised the former discussions. With SWITCH moving on, the discussions have to be taken forward. A major role plays the further development of the learning alliance.

- The demonstration project should be based on the demands of the members of the learning alliance (local actors). The precise definition of the demonstration project

should be developed in a bottom-up process. Demands and modifications as introduced by the learning alliance should be carefully taken into account.

- The innovation potential of the overall water management of Wilhelmsburg has to be proved. Therefore not only the learning alliance on local level should be taken into account but also the SWITCH partners on international level. Regarding to Carol Howe it might be of interest to send a request to SWITCH-members dealing with other workpackages to get their opinion.

To do

- The selection of the demonstration project has to be promoted. This has to happen in close collaboration with the building-up and the work of the learning alliance on local level (Wilhelmsburg).
- Within SWITCH quite clear regulations about the usage of the money for the demonstration project exist. Financial facts have to be taken into account in the action plan.
- The schedule/action plan has to be clarified when the decision for the demonstration project has to be made.

Task	Date	Responsibility
Specification of the ideas of overall water management for Wilhelmsburg		HCU, BSU, Hamburg Water Inc.
Check innovation potential of the demonstration project in terms of overall water management	In close collaboration with the establishment of the learning alliance	learning alliance
Check possible demonstration sites on local level		learning alliance
Interim report demonstration project		HCU

2.4 Learning alliance

Adjust learning alliance

The learning alliance Hamburg has to put the general objectives (of SWITCH learning alliances) in concrete terms. The results must be summarized in the learning alliance action plan. Following topics were discussed:

- Levels: The learning alliance Hamburg discussed to establish levels with several functions. For the demonstration project following levels were planned:
 - Expert level for consulting and information sharing. Possible participants are BSU, HCU and Hamburg Wasser.
 - Population level for the engagement of civil society players. Maybe several levels for a small scale and a large scale demonstration are planned. Participants could be citizens of Wilhelmsburg, farmer co-operations, nature groups etc.
 - Senate level for decision making.

For the research project an expert level is planned for consulting, evaluation and information sharing. Possible participants are BSU, HCU and Hamburg Wasser.

- **Platforms:** The SWITCH learning alliances contain different platforms (e.g. international, city, district). In Hamburg two platforms were discussed, one platform for the whole city and another one for the district of the demonstration project (expected Wilhelmsburg).
- **Stakeholders:** The learning alliance should consist of a number of different participants and organisations (e.g. public sector, private sector, civil society players) which bring together complementary skills and experiences. In Hamburg the main stakeholders have been identified.
 - State Ministry of Urban Development and Environment Hamburg (BSU) (several departments)
 - International Building Exhibition Inc.
 - Hamburg Water Inc.
 - Harbour City University Hamburg (HCU)

A large group of other stakeholders has been listed (in particular civil society players). A selection has to take place which additional stakeholders should be informed and which should be involved in the learning alliance. For each member reasons have to be found to attend the learning alliance (ensure a lasting participation). To reduce the communication barriers in the learning alliance, the participants should act at the same level of information. To facilitate the knowledge sharing, a library with information about water management in Hamburg (reports, water management plans etc.) could be built up. Also a presentation on the SWITCH website is possible.
- **Innovation:** The expected innovations have to be identified by the learning alliance.
- **Scaling up:** The learning alliances should scale up innovations to an upper level. So a strategy of water management could be fundamental in Hamburg but it can be transferred as an innovation to other demonstration cities worldwide. Following possible themes for innovations were identified:
 - Water management in transitions cities,
 - Decentralized storm water management,
 - Water to improve the quality of life and
 - Combine harbour and housing areas.

To do:

Task	Date	Responsibility
Evolve the learning alliance action plan	15. August 2006	Coordinator learning alliance
Establish several levels learning alliance		Coordinator learning alliance
Select additional members learning alliance		Coordinator learning alliance
Presentation "Hamburg" on SWITCH website		Coordinator learning alliance

A. ANNEX

Hamburg Report on Scoping Visit (UNESCO-IHE, IRC)

- A1: Hamburg report on scoping visit, July 18 / 19, 2006. Prepared by Peter van der Steen, Carol Howe (UNESCO – IHE) and Jaap Pels (IRC)

Presentations

- A 2: Wachsende Stadt – Aber wie? Strategien der Stadtentwicklung Hamburgs
– Wilhelm Schulte
- A 3: Metropole Hamburg – Wachsende Stadt
– Gerti Theis
- A 4: Theme 1 Urban water Paradigm Shift. Sustainability and Risk Indicators
– Peter van der Steen
- A 5: Sustainable Water Management Improves Tomorrow's Cities Health
– Carol Howe
- A 6: Hamburg - SWITCH (Sustainable Water Management Improving Tomorrow's Cities Health)
– Heike Langenbach
- A 7: Water Management and Flood Protection in Hamburg
– Brigitte Groß
- A 8: Strategies for Stormwater Management in Hamburg
– Hans-Otto Weusthoff
- A 9: Learning Alliances for Scaling up Innovation Approaches Hamburg
– Jaap Pels

Water Problems in Hamburg – research and demonstration areas and case studies – SWITCH WP 5.1 (excursion):

- A 10: Fact Sheet Research Project 'Trotting Course Farmsen'
- A 11: Fact Sheet Demonstration Area 'Lettow-Vorbeck-Kaserne Hamburg-Jenfeld'
- A 12: Fact Sheet Research Project 'Neuallermöhe-West'
- A 13: Fact Sheet Research Project 'Housing Wilhelmsburg Ost'
- A 14: Fact Sheet Demonstration Area 'Wilhelmsburger Mitte'
- A 15: Fact Sheet Demonstration Area 'Reiherstieg – Approaches to water'
- A 16: Fact Sheet Research Project 'Harbour City'

Program

- A 17: Program SWITCH Workshop 18.07. – 19.07.2006

Participants

- A 18: Participants SWITCH Workshop 18.07. – 19.07.2006

Photos

- A 19: Photo-documentation

A1 HAMBURG REPORT ON SCOPING VISIT, JULY 18 / 19, 2006
PETER VAN DER STEEN AND CAROL HOWE – UNESCO –IHE
JAAP PELS - IRC

- Report to be prepared by learning alliance support team member in consultation with the city coordinator
- Answer each question reflecting on the level of progress (not just yes/no response) and with recommendations to address problems and take advantage of opportunities

1. Have all the key stakeholders in urban water management been identified?

The main stakeholders have been identified. A larger group of other stakeholders has been listed. To do is selection of stakeholder (representatives) has to be made. Especially the citizens (- future / current - residents demo sites), commercial (harbor entrepreneurs), farmer group and environmental stakeholders still have to join the Learning Alliance and for other information packages might be developed.

2. What is the level of engagement to date between the project and those stakeholders?

Involved are the university, the municipality, the water company (water supply and waste water treatment) and the company responsible for the building exhibition 2013. See also list in the initial scoping study.

3. Has a broad range of urban water management problems been identified?

Yes, see also initial scoping study. As demo system the island between the north and south Elbe has been selected. Three possible sites on the island have been identified for demo projects.

4. Have the possible linkages between these problems (city needs for solutions) and the work packages (research that can potential provide solutions) been explored adequately?

Yes, the university has a leading role in wp 5 and supports one in wp 4.1. See also annex 1, description of work of the 6th framework program priority.

5. Are modifications needed to improve efficiencies and synergies between work packages?

General modifications are not estimated to be necessary. The university is going to contact the relevant people of other workpackages to support research. Furthermore in terms of the demonstration area (overall water management for Wilhelmsburg) possible synergies have to be reviewed to assure the realisation of the project.

6. Have cross-cutting issues (gender, poverty, governance, financing etc) been adequately considered?

Gender: not now, but the issue is still open for discussion.

Poverty: not now, but in the demo sites the poorer – and also ethic - portion of the Hamburg community lives.

Governance: not directly, but Hamburg has examples of sites where smaller – neighborhood - 'communities' govern water issues themselves. Further it is to be expected that the municipality has developed and use means to give stakeholders a voice in the solutions concerning IUWM.

Financing: not now, but it will be an issue given the differences in costs for users when storm water is flowing through the sewer system.

All cross cutting angles can be tackled at the demo site.

7. Is information being gathered (hard copy and electronic documents etc) and collated in an accessible way?

The collection of information has started and the first discussion on an accessible digital repository (through the SWITCH website) has been held during the inception visit.

8. Is there sufficient local interest in SWITCH and the learning alliance approach (a critical mass of interested people to be involved, and a few who are really willing to drive process) to justify further efforts to develop a learning alliance?

Yes, see the list in the initial scoping study made in Delft. Hamburg has a LA champion, a coordinator and so called 'do-ers'. In the university people-power is available to drive the process.

9. Has the host organization for running the learning alliance been identified, and do they have prior experience of similar activities?

The university has been identified.

Prior experience exists in several cases by the handling of similar projects.

10. Has an appropriately skilled facilitator/ coordinator been identified to lead the learning alliance?

Coordinator: Prof Heike Langenbach (HCU) and Andreas Kellner (BSU) (so far represented by Wilhelm Schulte (BSU))

Facilitator: Prof Heike Langenbach

11. Have other support and resource needs been identified?

An initial discussion has been held on resources (time and money). Time is available. Money for meeting would be low-budget when stakeholders meet in Hamburg, for example at the university, at the municipality or at the water company. Money for LA activities like workshops / meeting with other cities still must be found.

12. Is funding in place for the learning alliance (including availability of matching funds where needed)?

No further funding has yet been identified. See above (question no. 11).

13. Is the learning alliance action plan consistent with the work package description for the learning alliances (wp 6.2) in the description of works?

The Hamburg LA is working hard on the LA action plan.

The LA action plan will be refined related to the results of the scoping visit. Mid-August the action plan will be handed out to Carol Howe. The LA action plan so far is consistent with the core objectives of wp 6.2.

14. Have the immediate next steps (follow up action) to progress establishment of the learning alliance been identified and roles and responsibilities agreed?

The Hamburg LA is working hard on the LA action plan.

Three levels to work at have been identified during the scoping visit: the expert level (operators and university), the decision level (senate) and the population level (users of water on the island of Wilhelmsburg).

The draft for the LA actionplan (see above) will refine the follow up action. The next steps necessary will be the selection and the approach to the local stakeholders (population level) in relation to the demonstration area Wilhelmsburg (as already mentioned in no. 1). The core members of the LA (see above no. 2) have to arrange duties and responsibilities within the demonstration activity 'Water Management for Wilhelmsburg'. Further meetings and discussion with all stakeholders have to take place. In cooperation with all LA participants a small scale project suitable as demonstration project should be identified.

15. Any other issues?

The Hamburg team seems solid and prepared a good inception visit with an interesting program. Also initial materials have been collected. The Hamburg city is looking to densify building because space is sparse and various legislation is in place. During the visit the selection for a demo site has been discussed and the choice is narrowed down to three locations. The major driver in Hamburg is to develop residential housing on the island between Hamburg and Harburg. The island itself can be seen as a system for IUWM. All issues under wp 4.1 and 5 can be addressed at the demo sites.

A2 ABSTRACT: 'EXPANDING CITY – BUT HOW? STRATEGIES OF URBAN DEVELOPMENT' (WACHSENDE STADT – ABER WIE? STRATEGIEN DER STADTENTWICKLUNG)

Wilhelm Schulte (State Ministry of Urban Development and Environment Hamburg - BSU)

The presentation 'Expanding City – but how? Strategies of urban development' held by Wilhelm Schulte gave an overall view about urban planning in Hamburg. It focused on the main situations Hamburg has to face within the future in terms of immigration and migration. The expected population growths of 60.000 people until 2020 and the changing demands on living conditions evoke a predictable need for development of housing. At the same time the Harbour site with its container turnover needs area to expand.

Challenges urban planning

Hamburg will grow within its defined boundaries. Area for development is very limited. Furthermore Hamburg strives for the goal of sustainable urban growth. The objectives of the report 'Expanding City' demanding for qualitative growth have to be fulfilled. The mobilisation of potential areas for development causes further challenges. First of all potential areas have to be identified. Possibilities of utilisation concerning existing planning law, densification, redevelopment of brownfield sites and the development of city districts have to be taken into consideration. Concerning the water management a lack of capacity within the piping can exist. Therefore in some districts disposable areas cannot be developed as the present sewers cannot guarantee the effluent of rainwater.

Identification of sites

Furthermore the municipality identifies possible areas for redensification specially in relation to the public transport. Allotments very often occupy the surroundings of stations. It has to be carefully discussed if nowadays another use for example such as housing would be more suitable. A reconciliation of interests has to be taken into account to satisfy everybody. Solutions have to be found in cooperation with the allotment association as a very powerful organisation. Other challenges are the revaluation and the intensification of the use at arterial roads, the redevelopment of brownfield land such as the harbour, hospital sites or military bases.

Involvement of the population

For sustainable growth the determination of solely planning regulations is insufficient. Residents have to be involved to reassure that development will turn out to be a long-term success. Hamburg is in the progress of realising 'offensives for quality'. The municipality delivers the legal framework that private partners work together and finance for example the maintenance of green spaces within their local area for an overall benefit.

Future objectives

Within the theme 'Leap across the Elbe' the International Building Exhibition (IBA) and the International Garden Exhibition (IGS) in 2013 deliver possibilities for Hamburg to develop Wilhelmsburg as part of the key concept 'Metropolis Hamburg - Expanding City'. The aim of making the city of Hamburg a more sustainable and livable city can be closely connected to the usage of water to enhance the quality of life within the city of Hamburg.

Attached: Abridged version PowerPoint presentation

„Wachsende Stadt – aber wie?“

Strategien der Stadtentwicklung Hamburgs

Wilhelm Schulte,
Leiter des Amtes für Landesplanung

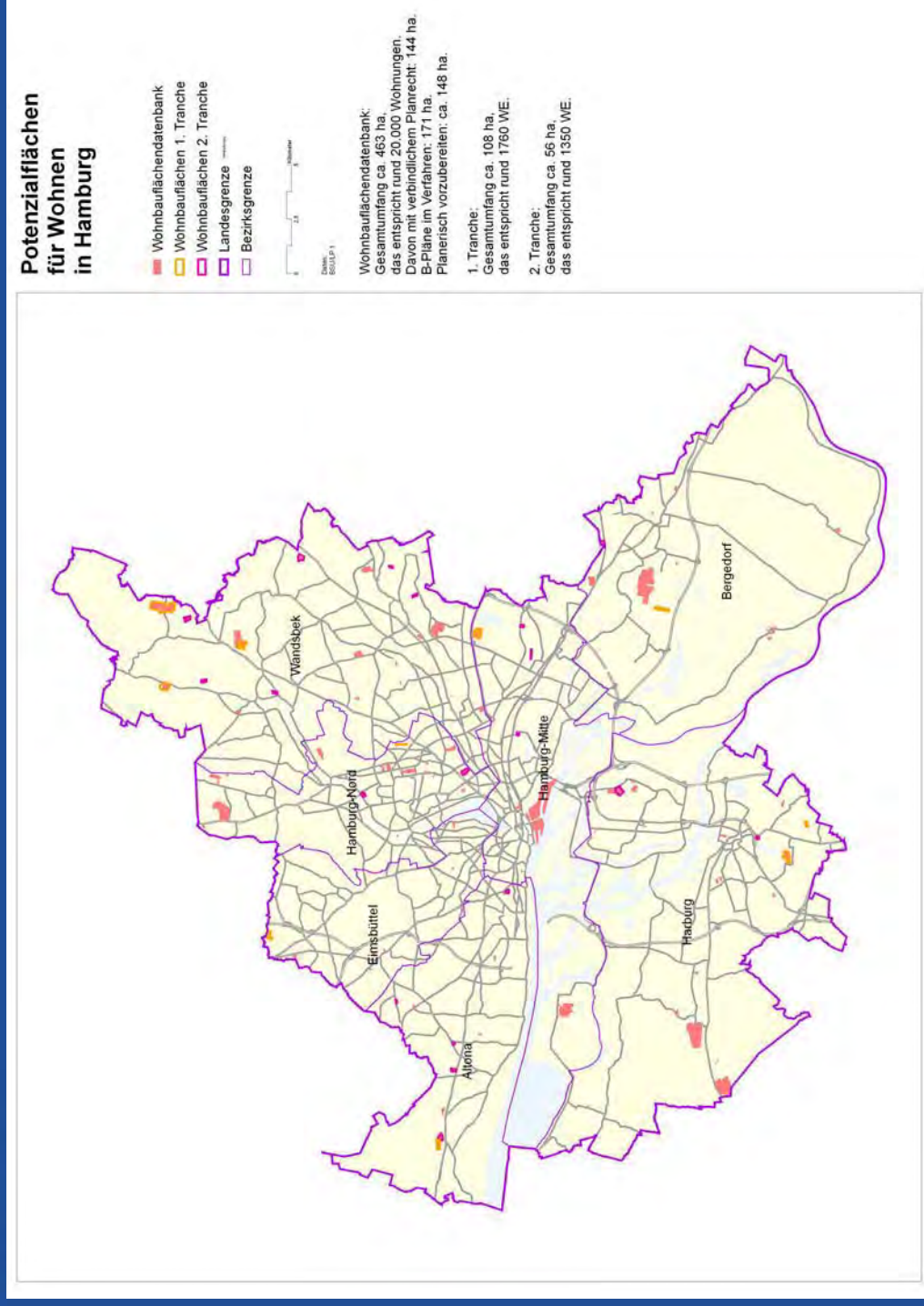


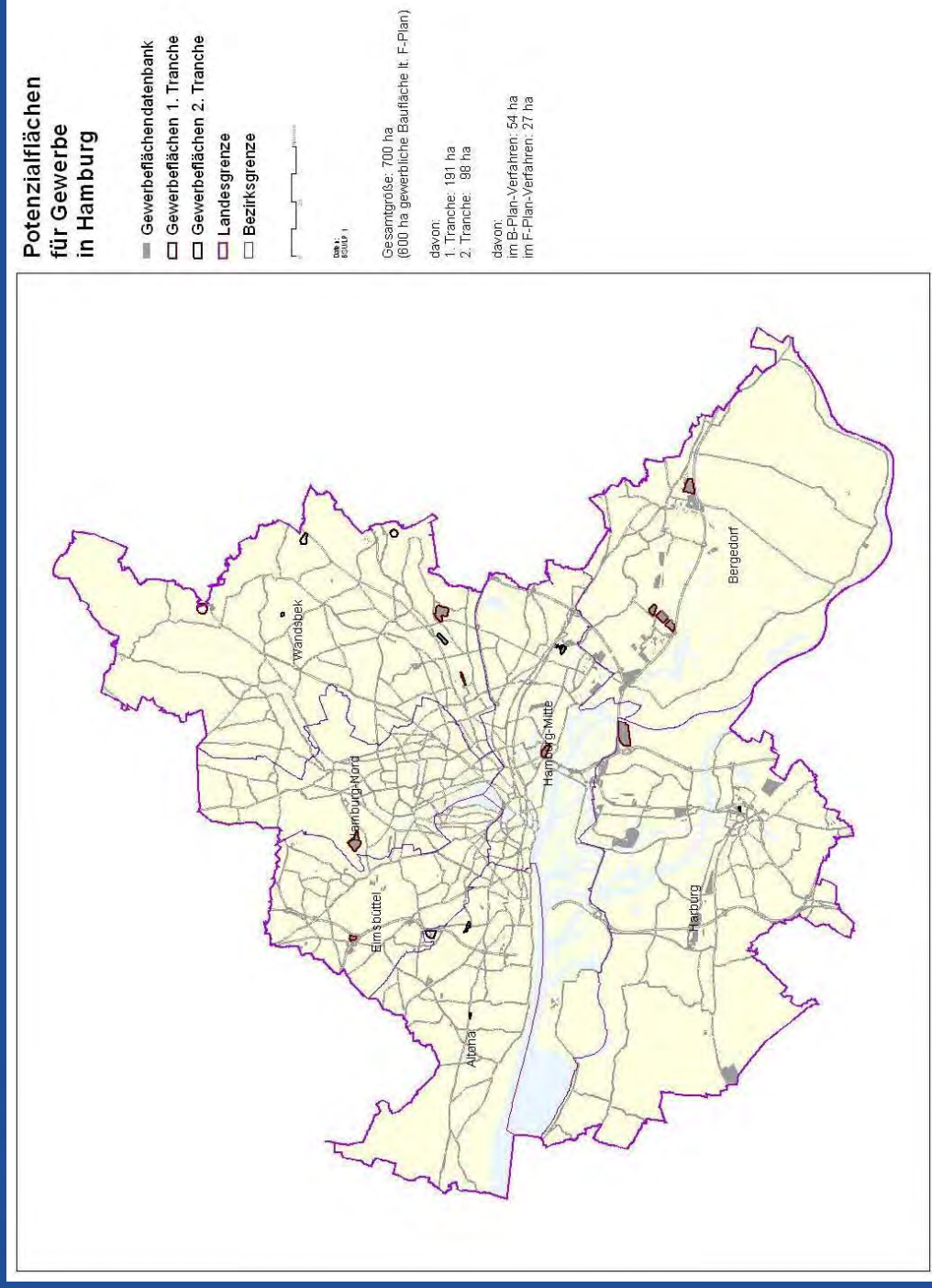
Die Entwicklung von Flächenpotentialen muß

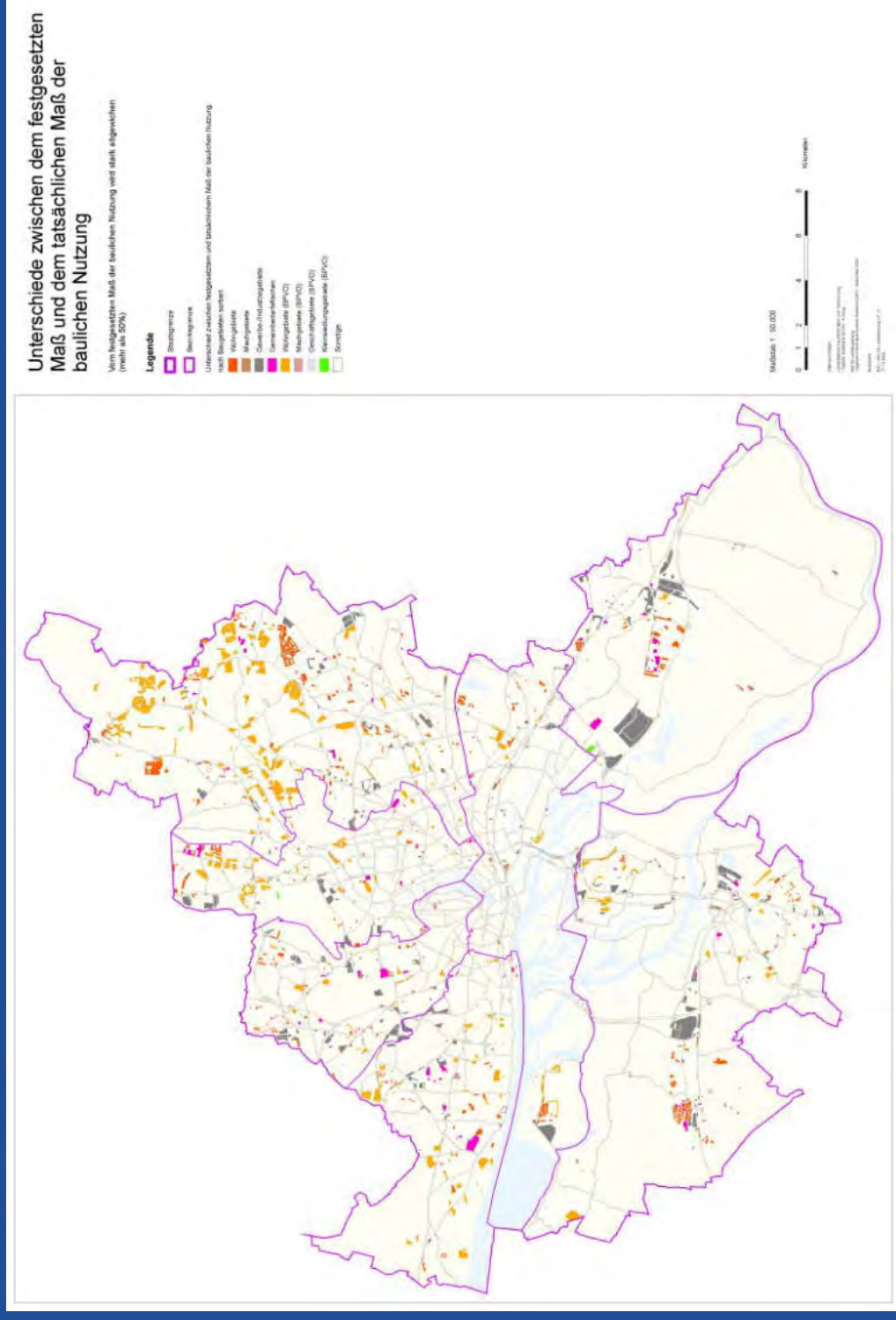
- den Ansprüchen einer nachhaltigen Stadtentwicklung
genügen
und
- die Ziele des Leitbildes der Wachsenden Stadt erfüllen
d.h. zu einem qualitativen Wachstum Hamburgs
beitragen

Die Mobilisierung der Flächenpotentiale in mehreren Schritten

- Ausschöpfung des vorhandenen Planrechts auf der Grundlage des Flächennutzungsplanes (FNP)
- Durchführung der bereits eingeleiteten Änderungsverfahren für die 1. und 2. Tranche „Wohnen und Gewerbe“
- Nachverdichtung im Siedlungsbestand
- Konversion
- Stadterweiterung









Verdichtungspotenziale auf Wohnbauflächen

- Verdichtungsflächen Wohnen
- Milleugebiete
- LAPRO: Schutzgebiete
- Landesgrenze
- Bezirksgrenzen

Hinweis:

Alle "Verdichtungsflächen Wohnen" werden Flächen dargestellt, die nach dem geltenden Planrecht als Wohnbauflächen ausgewiesen sind und die sich nach dem geltenden Planrecht als Wohnbauflächen ausweisen werden.

Es sind nur Flächen gekennzeichnet, die einen oder mehrere Grundstücke umfassen, die nach dem geltenden Planrecht als Wohnbauflächen ausgewiesen sind und die sich nach dem geltenden Planrecht als Wohnbauflächen ausweisen werden.

Die Flächen sind als Wohnbauflächen ausgewiesen und werden als Wohnbauflächen ausgewiesen werden.

Stand: 2011

Druckdatum: 20.11.2004

Skala: 1:50.000

Verdichtungspotenziale auf Wohnbauflächen

Verdichtungsflächen Wohnen

Milleugebiete

LAPRO: Schutzgebiete

Landesgrenze

Bezirksgrenzen

Verdichtungspotenziale auf Wohnbauflächen

Verdichtungsflächen Wohnen

Milleugebiete

LAPRO: Schutzgebiete

Landesgrenze

Bezirksgrenzen

Verdichtungspotenziale auf Wohnbauflächen

Verdichtungsflächen Wohnen

Milleugebiete

LAPRO: Schutzgebiete

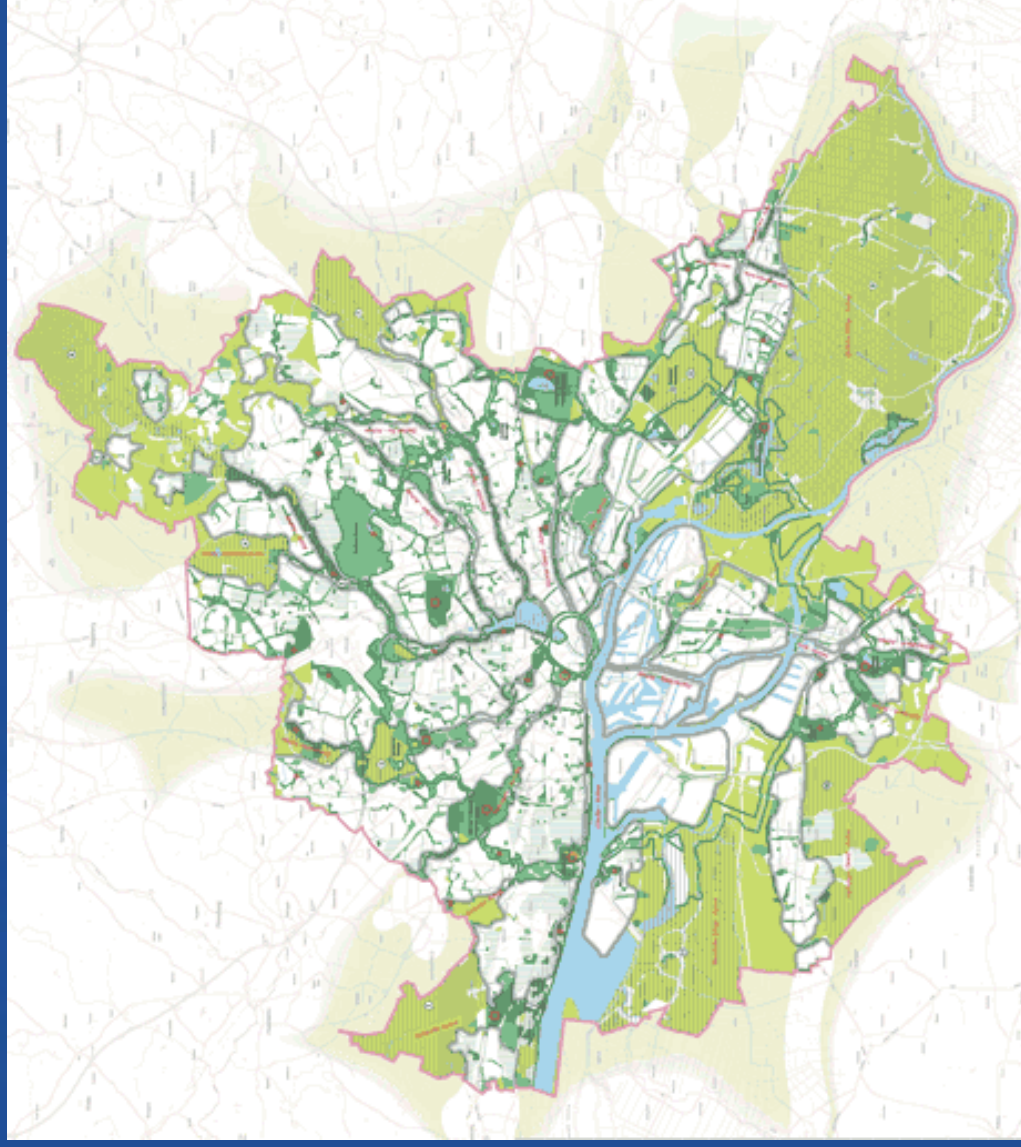




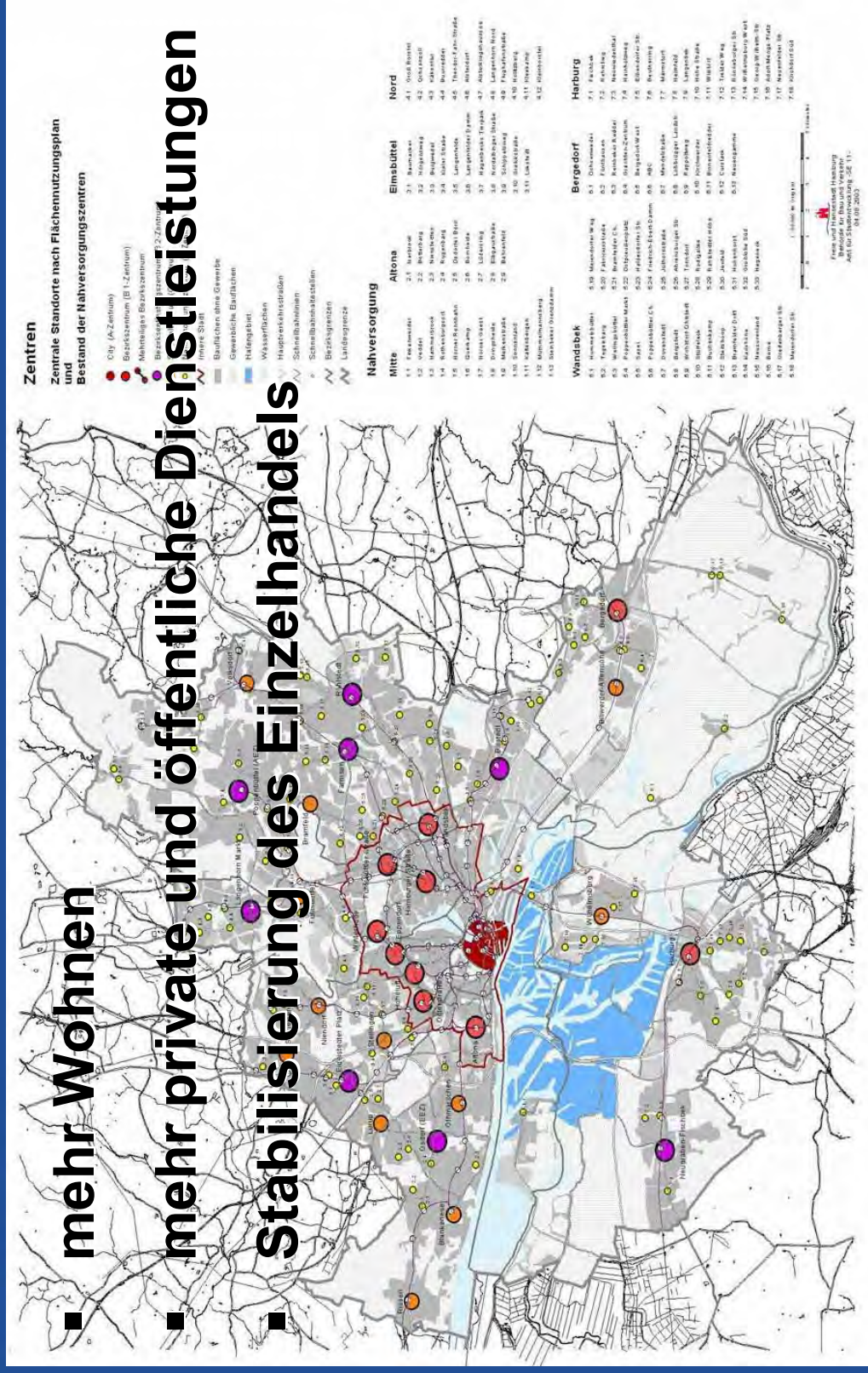
- „Stärken stärken“
- Adressenbildung
- Stadtmarketing „Leben und Arbeiten in Hamburg“

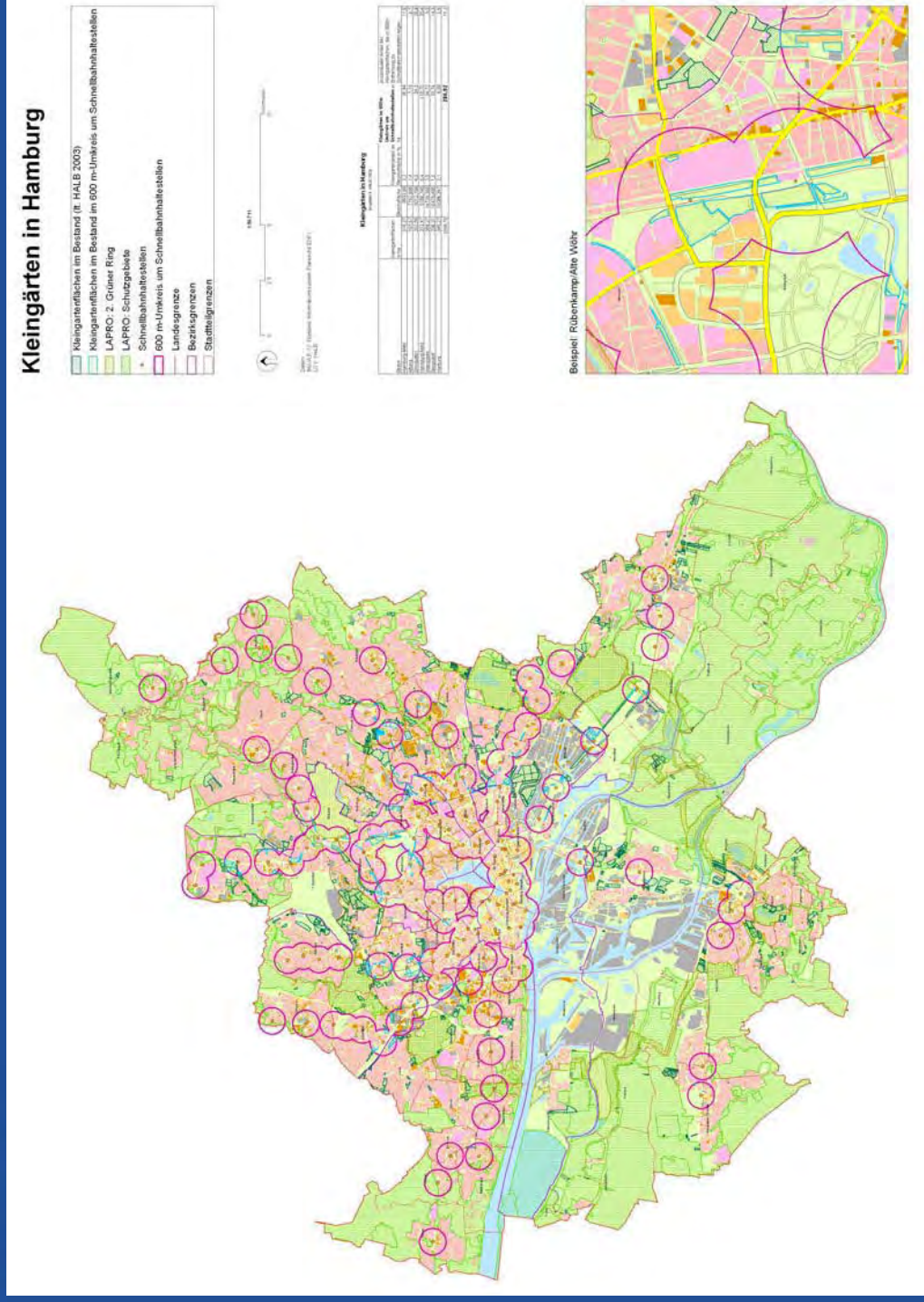


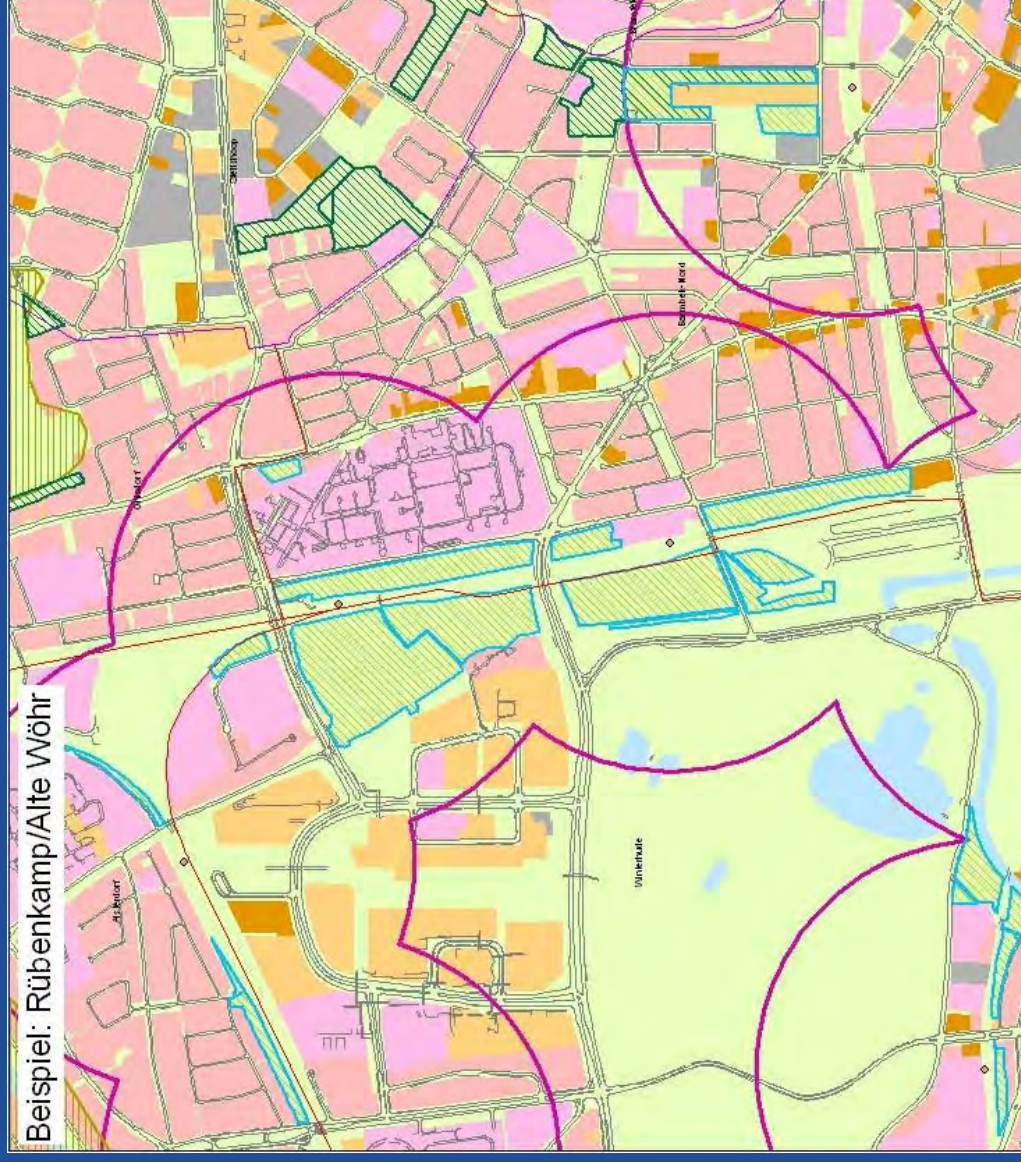


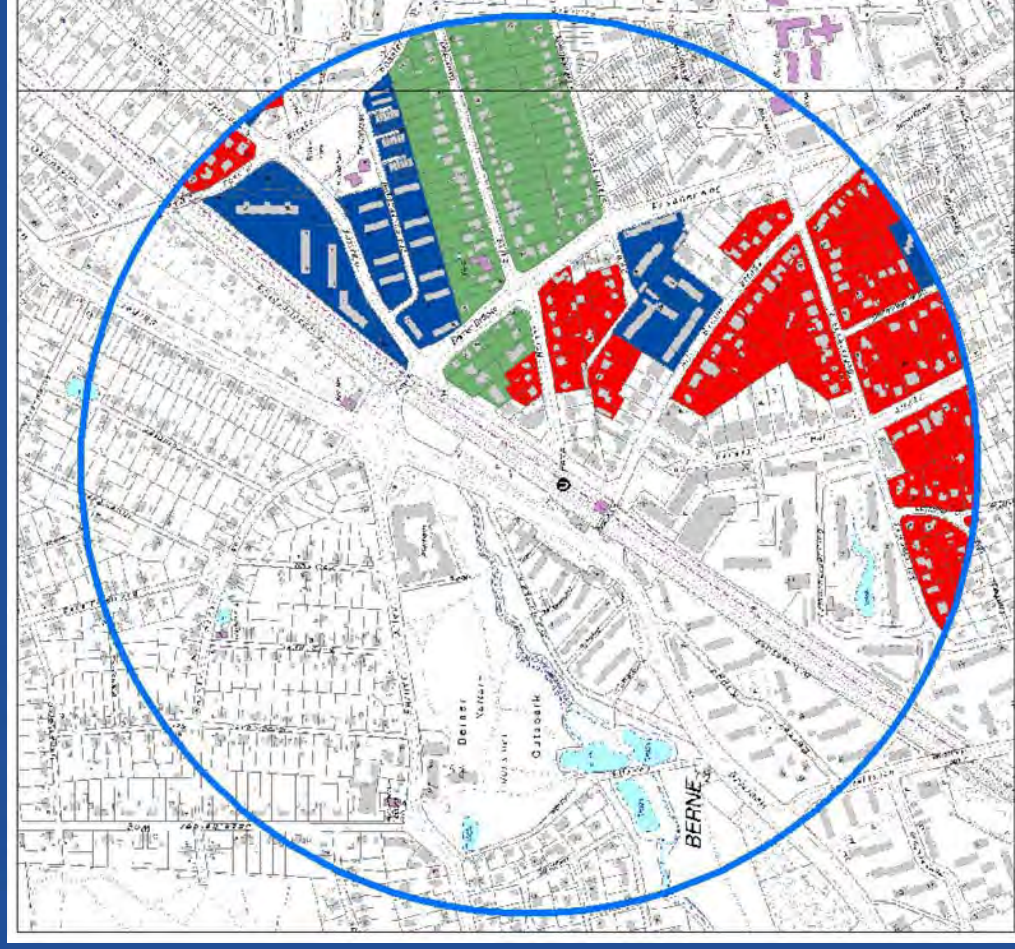


- mehr Wohnen
- mehr private und öffentliche Dienstleistungen
- Stabilisierung des Einzelhandels









Festgesetzte Reine Wohngebiete im
Geltungsbereich des Dichtemodells von 1980
- Beispiel U-Bahn-Haltestelle Bern -

Die verbindlichen Bauleitpläne wurden seit 1980 festgesetzt

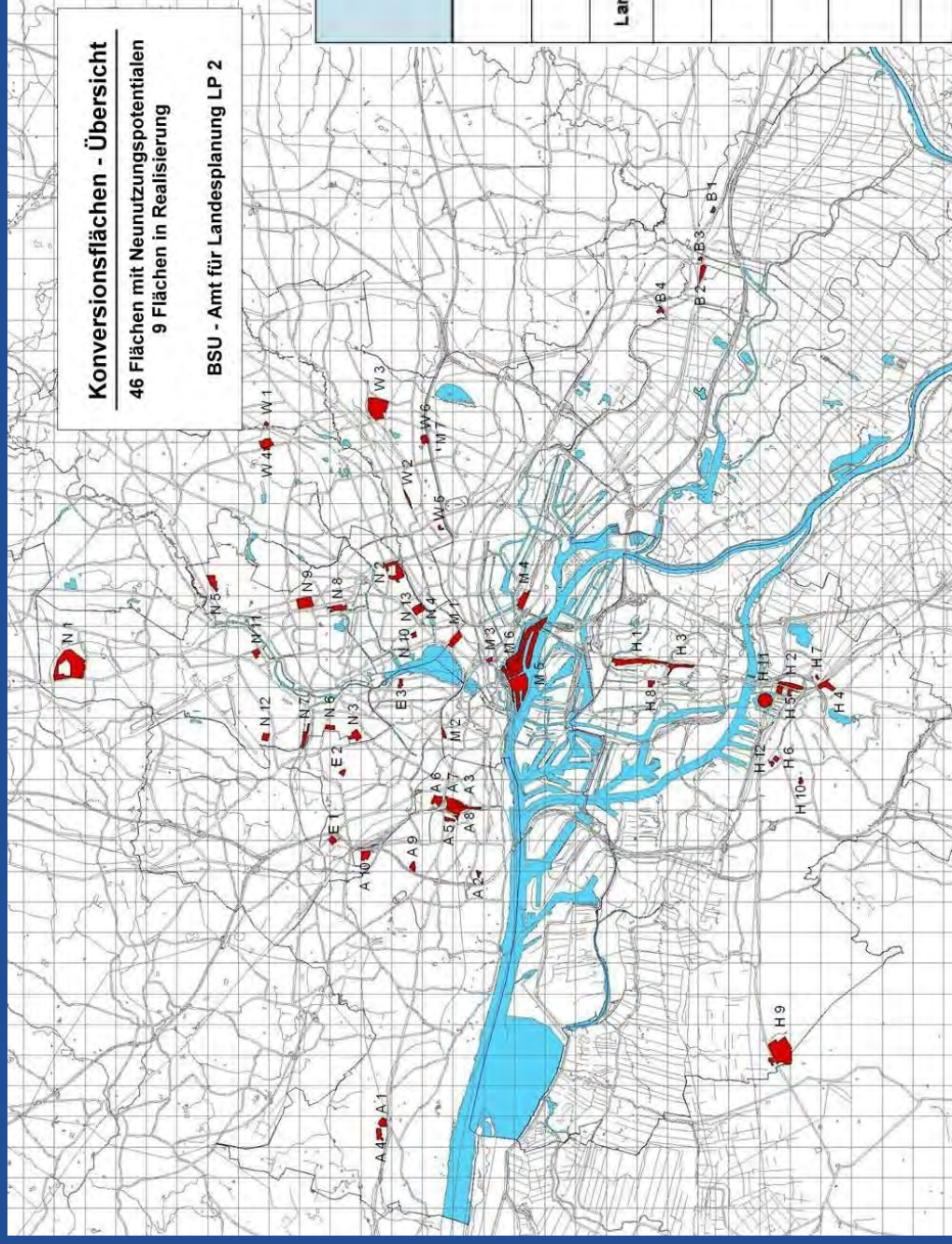
Legende

Reine Wohngebiete

- ohne GFZ
- Bandbreite eingehalten
- Bandbreite unterschritten
- Bandbreite überschritten

Maßstab 1 : 5.000

0 50 100 200 300
Meter



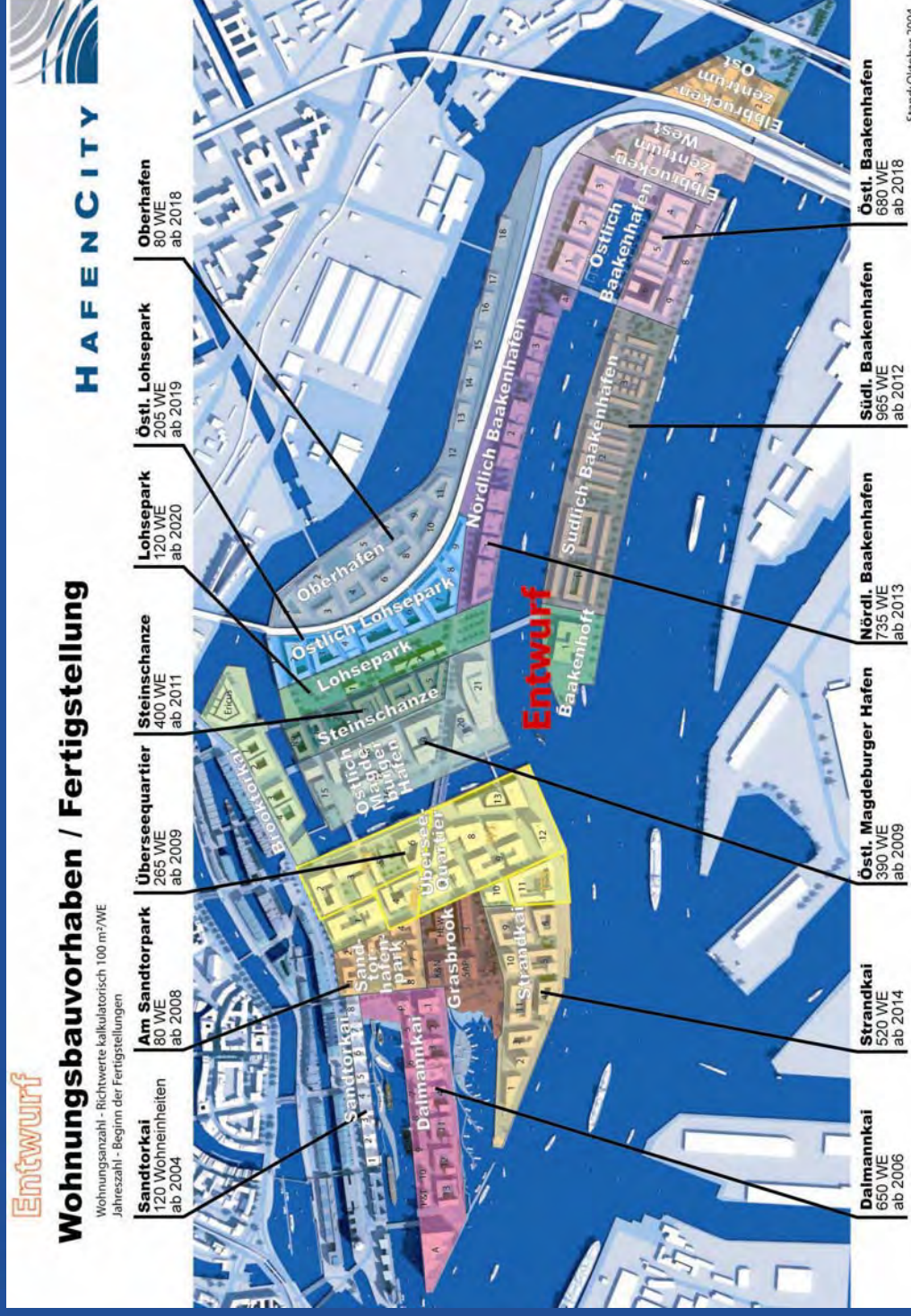
Probleme der Mobilisierung von Bundesvermögen

- **Entwidmung der Flächen**
- **zu hohe Buchwerte und Erlöserwartungen**
- **Altlasten**
- **individuelle Projektentwicklung**

Stadterweiterung durch besondere Entwicklungsprojekte

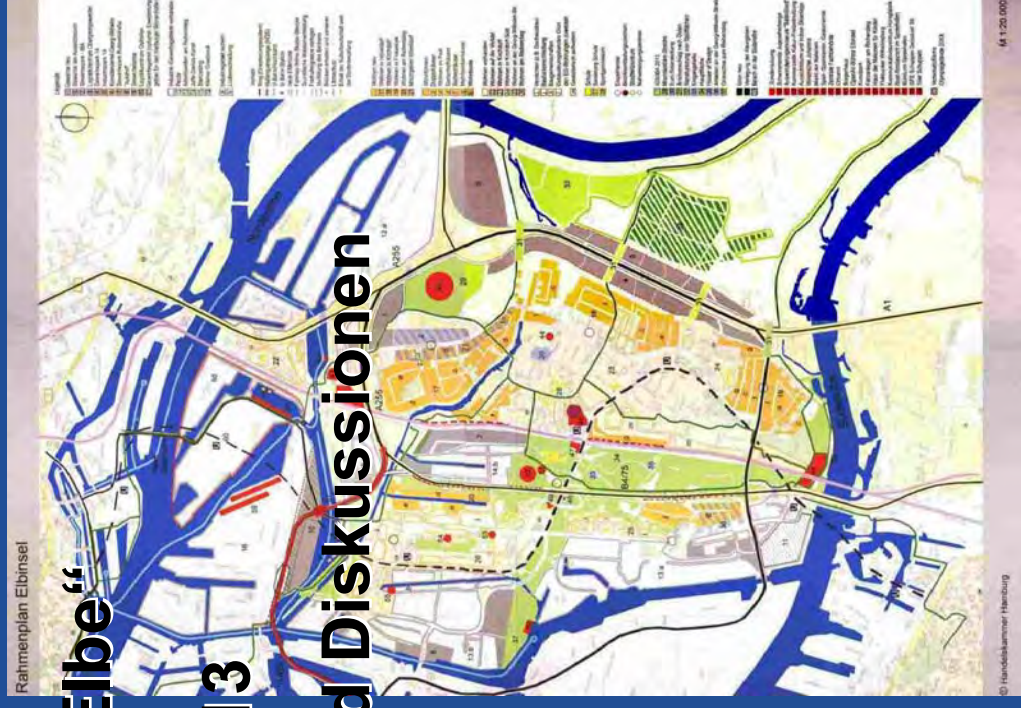
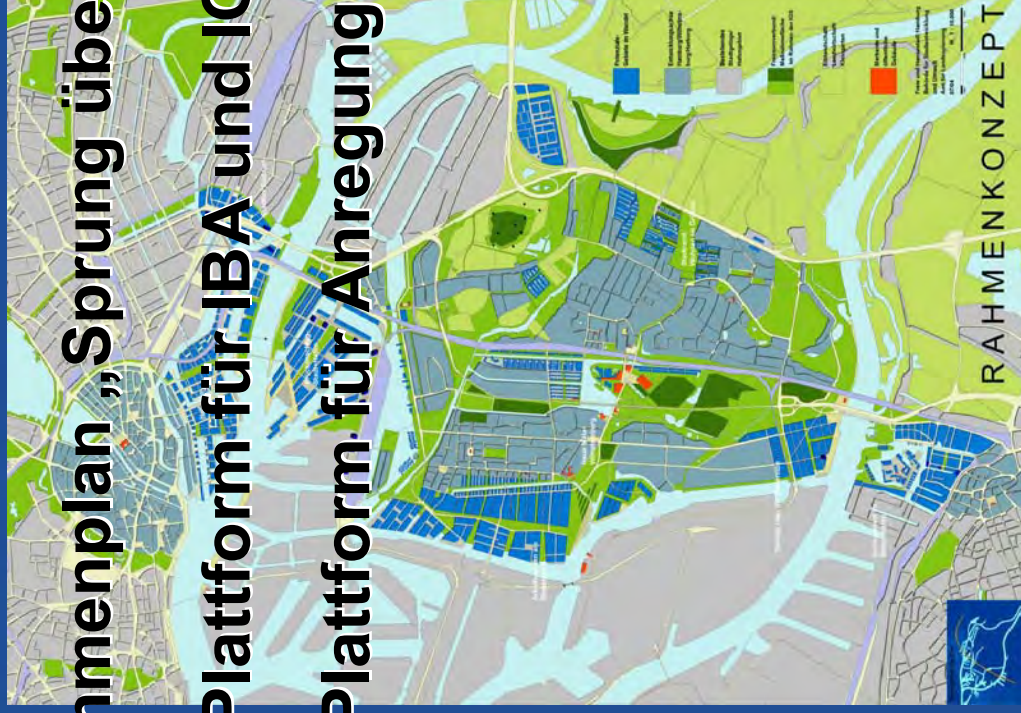
- **HafenCity**
- **Sprung über die Elbe**





Rahmenplan „Sprung über die Elbe“

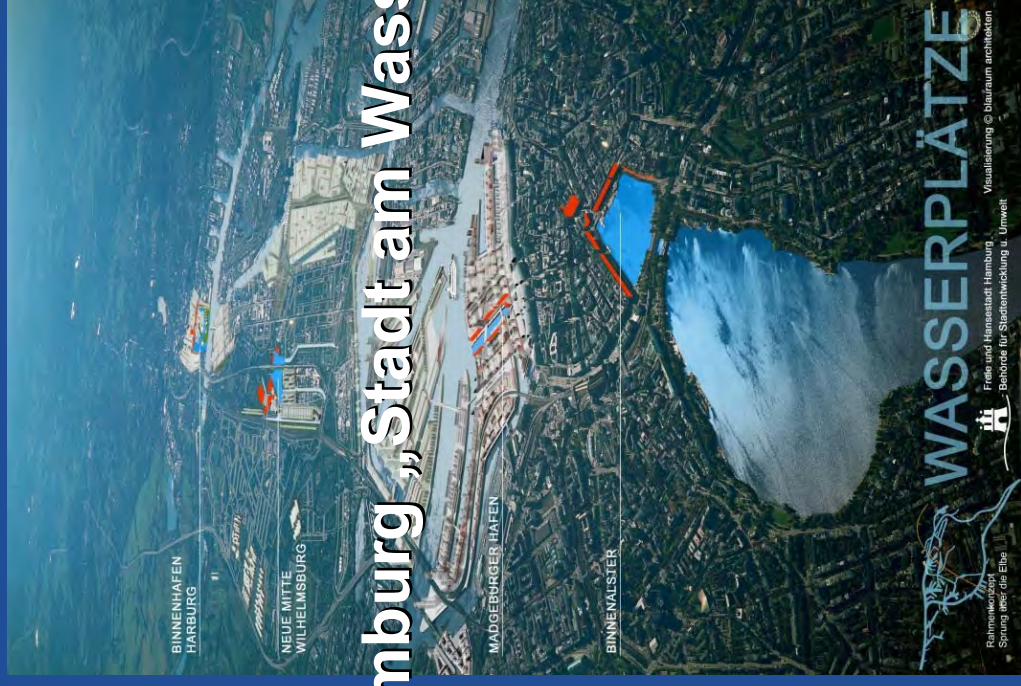
- Plattform für IBA und IGS 2013
- Plattform für Anregungen und Diskussionen



- Hamburg „Grüne Metropole“



- Hamburg „Stadt am Wasser“



A 3 ABSTRACT: METROPOLIS HAMBURG – EXPANDING CITY - INTERNATIONAL BUILDING EXHIBITION 2013 – ‘LEAP ACROSS THE ELBE’ HAMBURG WILHELMSBURG

Gerti Theis (BSU task force ‘Leap across the Elbe’)

The presentation held by Mrs. Gerti Theis gave a review and an overall view of the development and progress of the International Building Exhibition (IBA 2013) as part of ‘Leap across the Elbe’. This is one of the main themes of Hamburg’s key concept ‘Metropolis Hamburg - Expanding City’.

Vision for Wilhelmsburg

‘The leap across the Elbe’ offers a chance for inner city development, redevelopment of the waterfront and builds up a connection from the booming HarbourCity via the island Wilhelmsburg to Harburg. This contains a paradigm change from a peripheral urban development to a sustainable inner city development. Further projects are planned not only considering development but for example also an offensive for education.

The urban challenges require objectives for content and schedule. The decision to carry out an International Building Exhibition (IBA) in the year 2013 (beside the International Horticultural Exhibition IGS 2013) obliges the municipality Hamburg to produce a presentable quality. The IBA contains following important topics for the metropolis of the 21 century: productive use of the globalization, value productive use of knowledge, organise the international urban society, compatibility of harbour and city and landscape planning related to the leisure time needs of the people.

Review

One milestone and the basic kick-off for further plans for the development of the island of Wilhelmsburg was the application for the Olympic games and the International Horticultural Exhibition (IGS).

Projects and challenges IBA 2013

Mrs. Theis presented the main projects on the river island of Wilhelmsburg within the context of the Building Exhibition (IBA 2013) regarding their actual state and their future perspective. Concerning the different projects various problems occur when it comes up to planning and specially to realisation. In the context of Wilhelmsburg water will play an important role in most of the projects because of the special location as an island. Generally the marshland obtains high groundwater tables and effluent management might occur to be a problem. Flood risks also have to be taken into account. A choice related to possible demonstration areas of SWITCH is presented in the following paragraph:

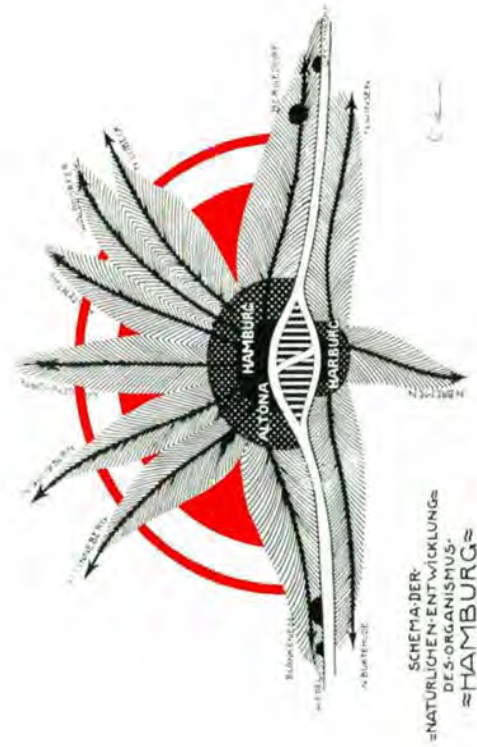
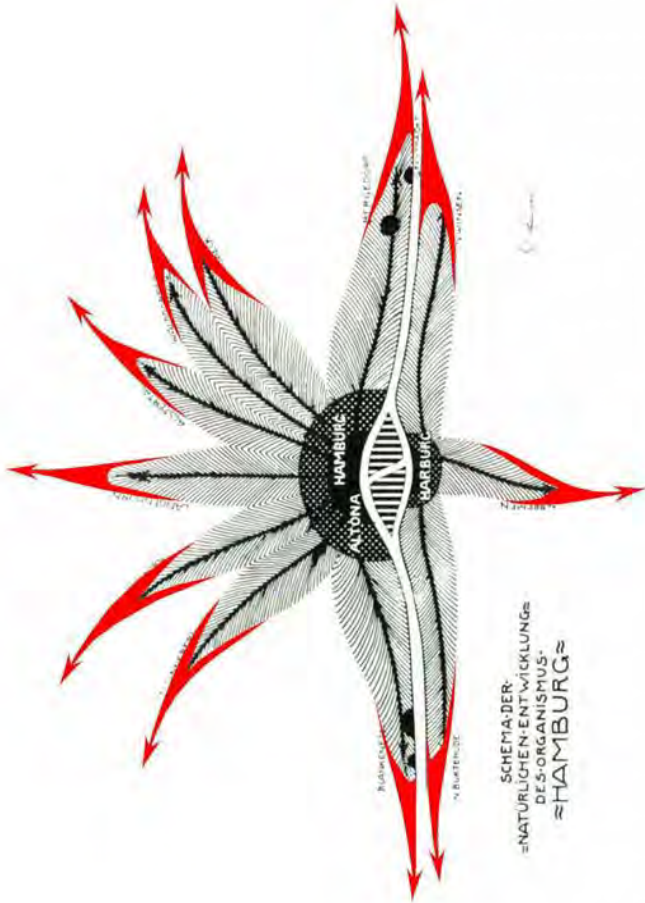
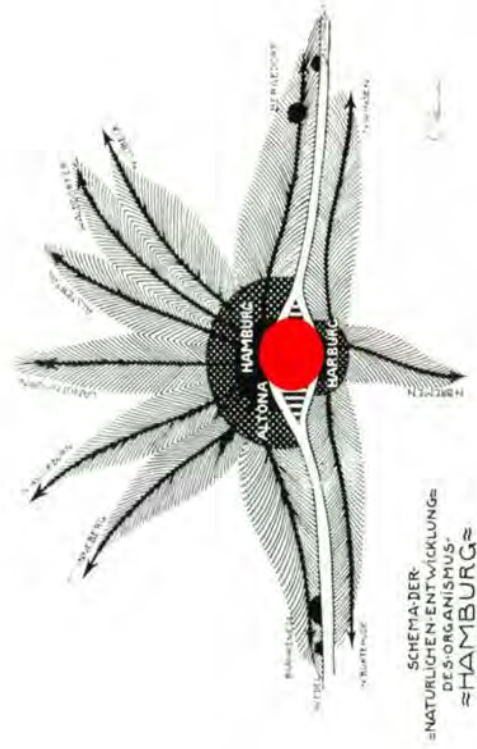
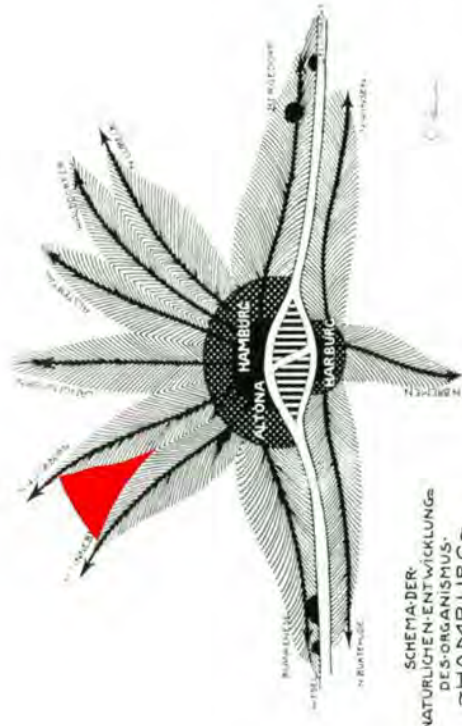
- Harburg inland port: In Harburg a mixed use with business, residential, university, gastronomy, and culture facilities is planned. Also the maritime flair should be preserved. The development of the side has already started.
- New centre Wilhelmsburg: The centre of Wilhelmsburg is part of the IGS and the IBA 2013. A public park and a central lake are planned. The central lake is one of the major urban development projects meant to safeguard the quality of the new centre of Wilhelmsburg.
- Wilhelmsburg east – living in the landscape: Following the idea of a new kind of garden cities the housing area should be connected with the surrounding landscape. The housing should attract a new kind of inhabitants to settle in Wilhelmsburg. As restrictions nature conservation aspects and the noise impact have to be taken into consideration.
- Georgswerder: The landfill Georgswerder is meant to be developed to a visible, public viewpoint serving as a fascinating destination. It is planned to represent the landfill site as a showcase for remediation and energy generation. At Obergeorgswerder the development of a business park is in the planning process in particular because of the excellent transport infrastructure. A green belt guarantees a gentle changeover to the nearby nature conservation area Rhee.

- Reiherstieg and Veringkanal: By the revaluation of the middle part of the Reiherstieg an area for high-value logistic centres will be developed. The development of buildings will safeguard the western part of Wilhelmsburg against emissions of the harbour. The area forms a passage between harbour and city crossed by green spaces. In combination with the International Horticultural Exhibition a new park with sports and leisure facilities will be developed at the Reiherstiegknie.
- Spreehafen: With the Spreehafen being open to the public, the waterside should be newly designed. The area offers the opportunity to develop new forms of work, leisure and gastronomy. At the scenic south bank an excellent access to water can be achieved. Around the Spreehafen and the Muggenburger Zollhafen cultural and touristic sightings will be developed.
- Kleiner Grasbrook and Veddel: The 'Kleine Grasbrook' is vis-à-vis of the HafenCity. With the leap across the Elbe the present harbour area will be developed as its counterpart. Flats with a view on the Elbe and a green bank which will be expanded as a park in Veddel. Inbetween the HafenCity University and the student accommodation at Veddel this area is predestined for university and scientific institutions.

Attached: Abridged version PowerPoint presentation

Metropole Hamburg - Wachsende Stadt





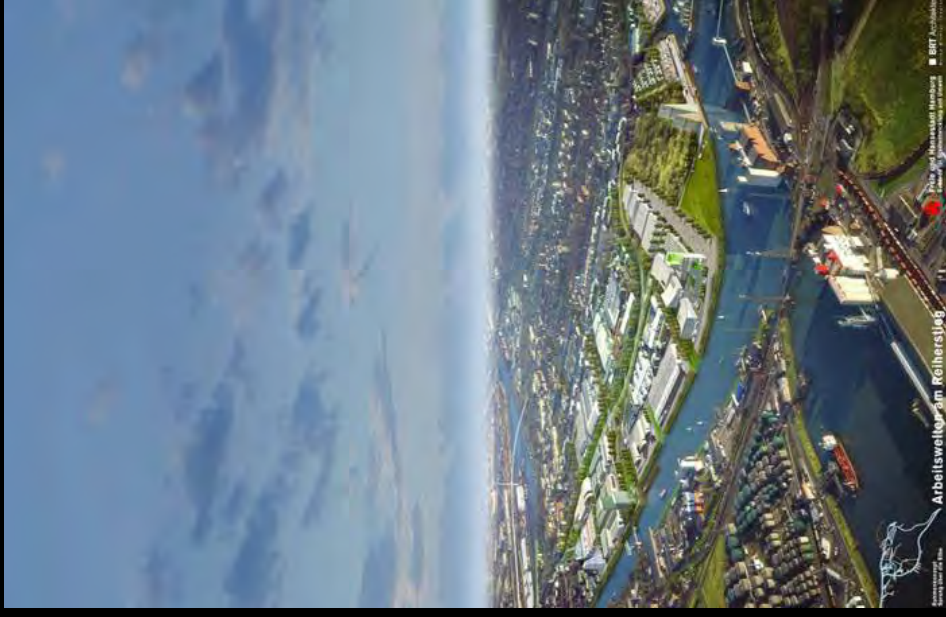
Internationale Entwurfswerkstatt Hamburg 2003
International Design Workshop Hamburg 2003

Sprung über die Elbe Leap across the Elbe



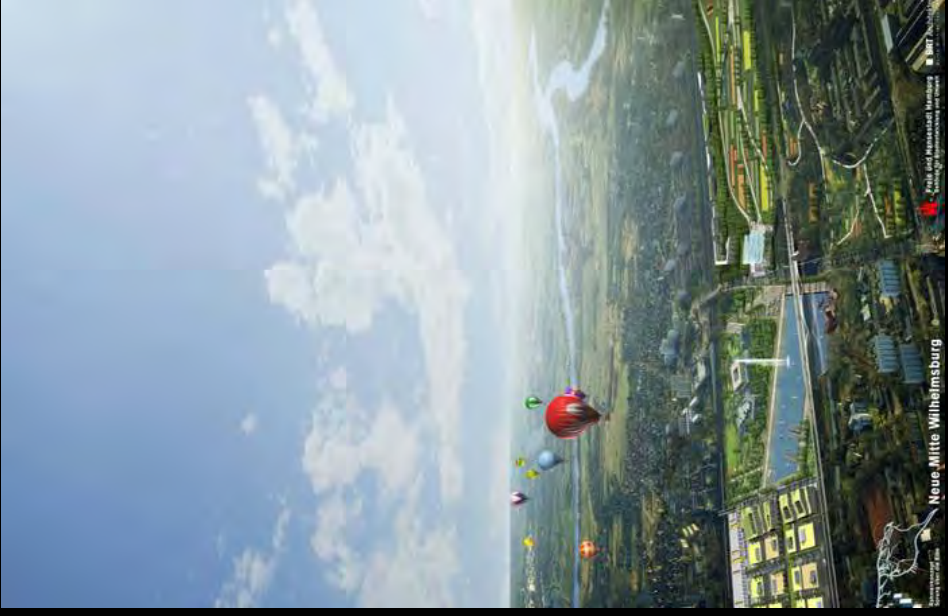


Olympiabewerbung 2003



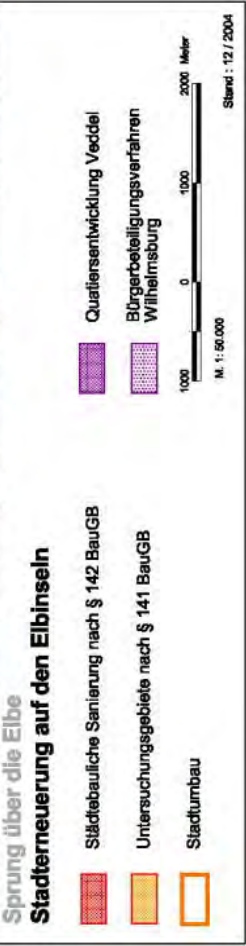
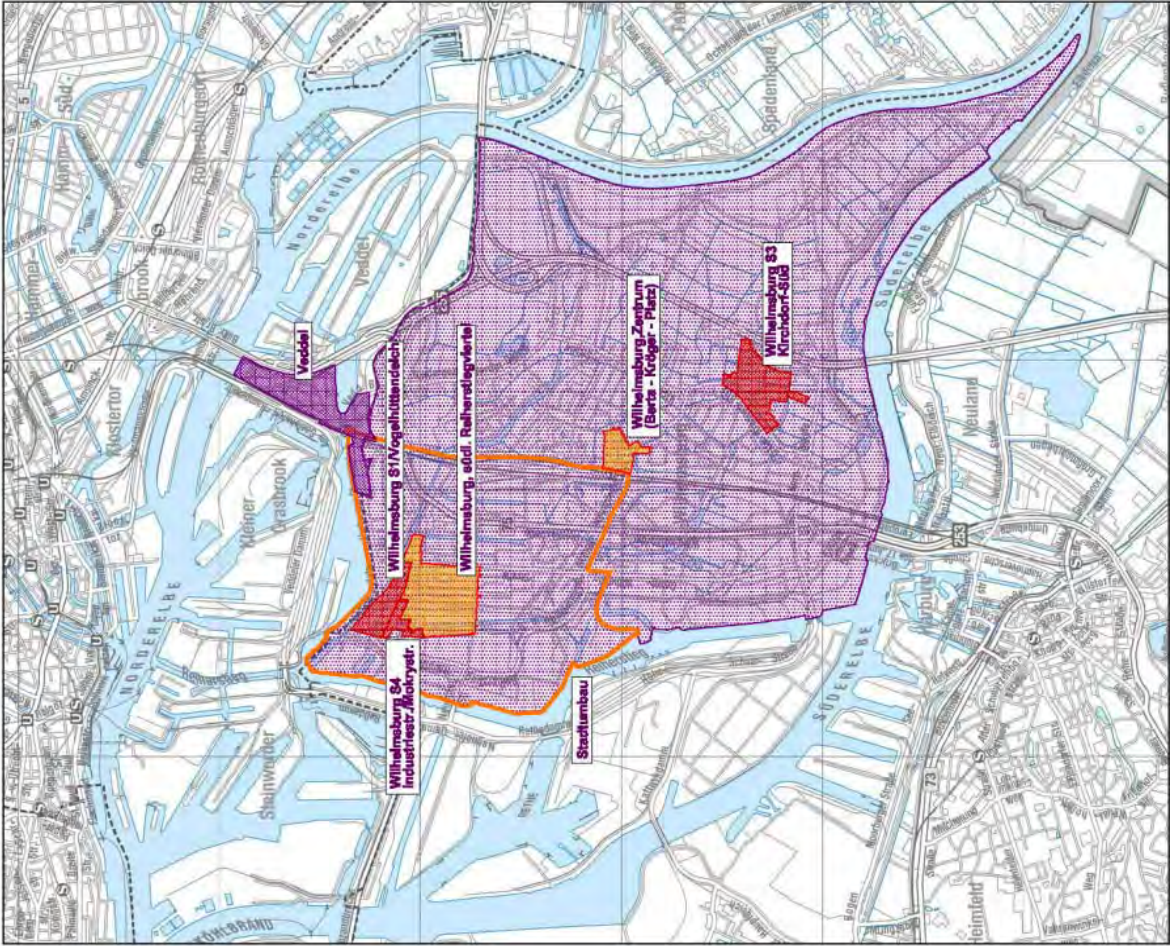
Städtebauliche Schwerpunkte IV

Sprung über die Elbe – IBA HAMBURG 2013



Städtebauliche Schwerpunkte

Sprung über die Elbe – IGS HAMBURG 2013



	Wilhelmsburg	Veddel	Hamburg
Bevölkerung	48 322	4776	1715
Unter 18-Jährige	10 935	1191	273
% der Bevölkerung	22,6	24,9	15,9
Ausländer/innen	16 510	2659	255
% der Bevölkerung	34,2	55,7	14,9
ausländische Schüler/innen	2695	384	29742
% aller Schüler/innen	47,6	81,5	17,9
Straftaten insgesamt	8021	1025	261268
je 1000 der Bevölkerung	167	218	152
Arbeitslose	3 539	374	81518
% der 15- bis unter 65-Jährigen	10,9	10,9	6,9
Jüngere Arbeitslose	438	40	6981
% der 15- bis unter 25-Jährigen	6,8	5,1	3,7
Sozialhilfeempfänger/innen	6 821	861	122
Wahlbeteiligung (%)	58,0	49,2	68,7

Themen der **IBA** HAMBURG 2013

Vorbildliche Lösungen für die Metropolen im 21. Jhd.

Globalisierung produktiv gestalten

Kulturelle Vielfalt als Chance

Wohnungsbau mit Mut zum Experiment

Städtebauliche Integration von Arbeitsstätten

Familiengerechte und altersgemischte Wohnformen

Wasser und Grün

Architektur und Baukunst

Intelligente Infrastruktur

Bürgerliches Engagement

Erprobung neuer Verfahrenskultur

Räumliche Schwerpunkte des Sprungs über die Elbe

Kleiner Grasbrook und Veddel

Brückenverbindung

Elbpark

Wissenschaftseinrichtungen

Veranstaltungs- und Kulturzentrum 50-er Schuppen

Olympia

Spreehafen und Müggensburger Hafen

Auswandererstadt

Internationale Jugendherberge

Verlagerung des Zollzauns

Ufergestaltung

Existenzgründer, Freizeit und Gastronomie

Reiherstieg und Veringkanal

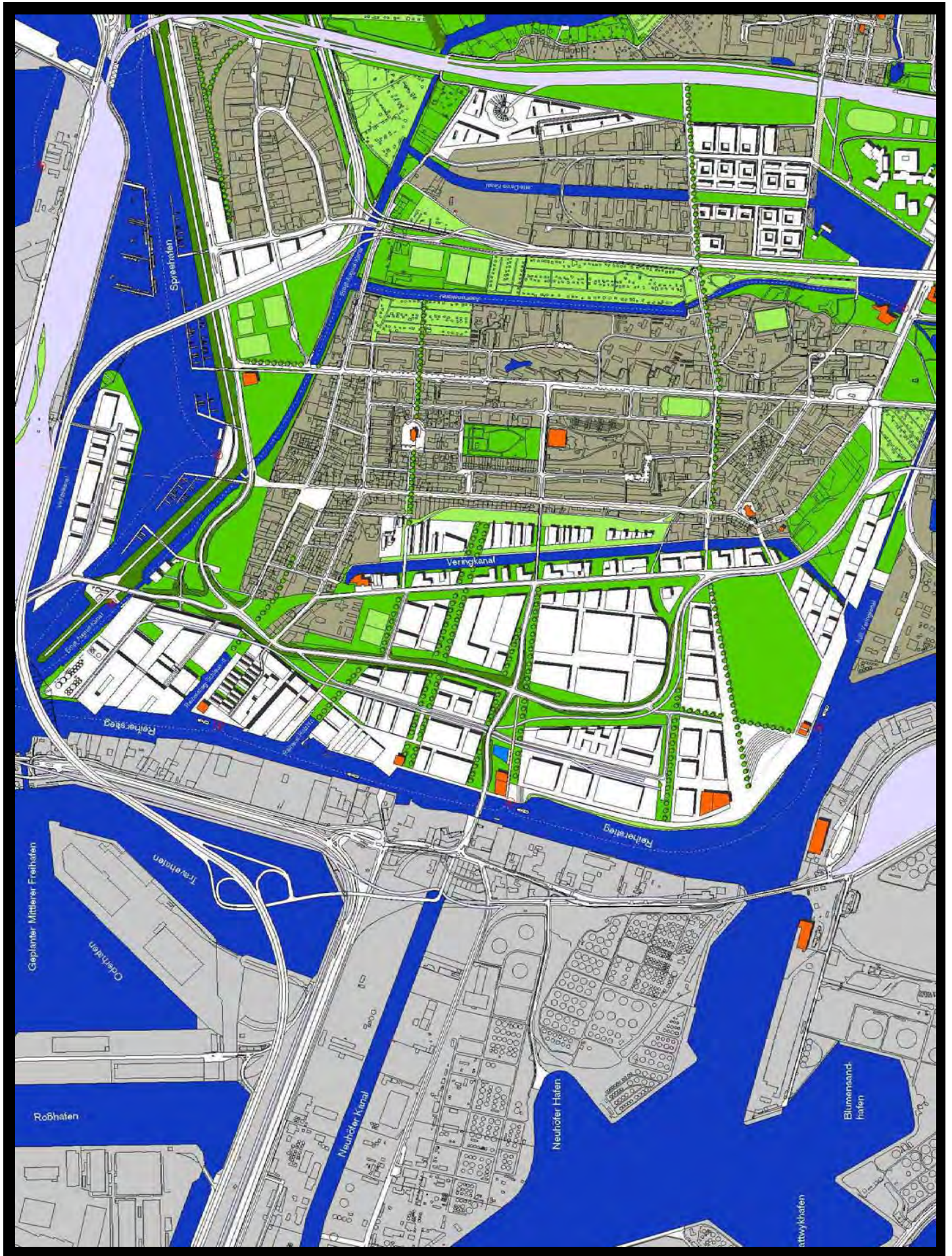
Hochwertige Logistik

Park

Sport und Freizeitangebote

Experimentelles Wohnen und Arbeiten

Zugänglich und gestaltete Ufer





Arbeitswelter am Reihersstieg

Rahmenkonzept
Sprung über die Ebn

Freie und Hansestadt Hamburg
Büro für Stadtentwicklung und Umwelt
BRT Architekton



Georgswerder

Landmarke

Gastronomie, Weitblick, dauerhaftes Ausflugsziel

Obergeorgswerder

Gewerbe- und Logistikpark

Neue Mitte Wilhelmsburg

See

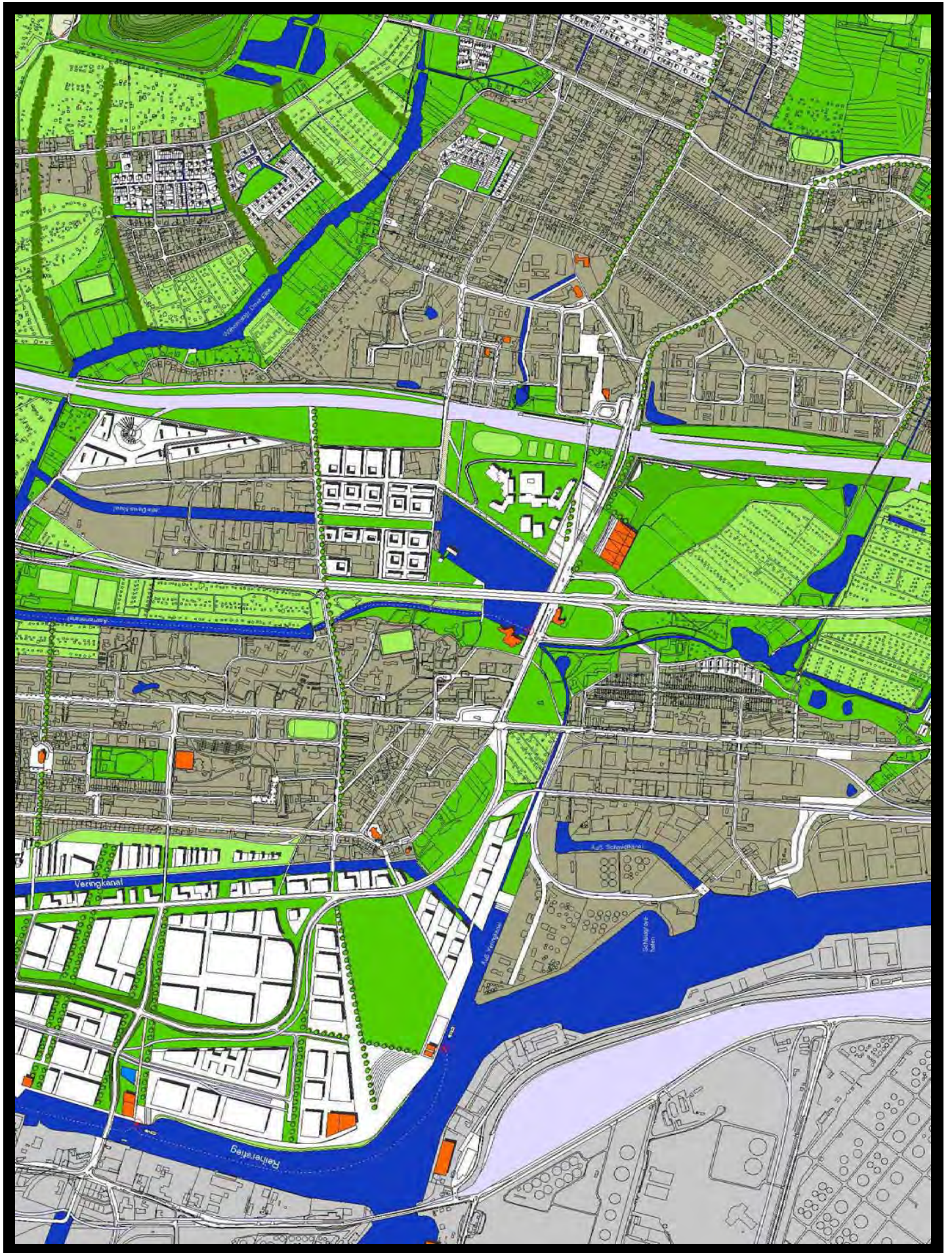
Internationale Schule

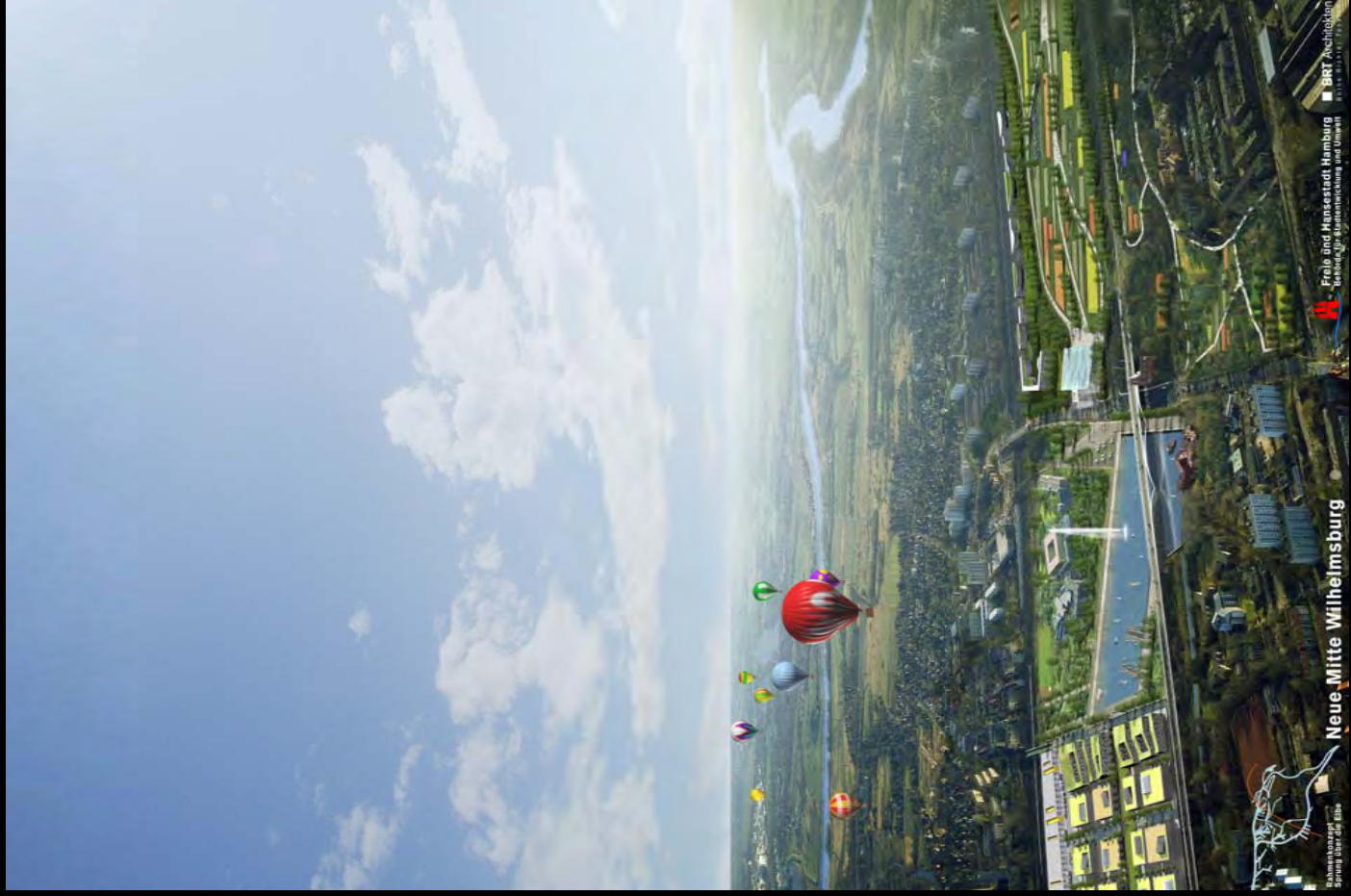
Markt der Kulturen

Wohnen am Park

Grüne Agora-Gartenschau Park

Freizeitsport





WohnLandschaften am Stadtrand

**Neue Wohn- und Partizipationsformen
für Familien mit Kindern**

Schlossinsel

Expansion der Wissenschaftseinrichtungen

Verträgliche Nachbarschaft von Wohnen
und wasserbezogenem Gewerbe

Schwimmende Häuser

Experimentelle Architektur

Hafenbrücke über die Süderelbe



Rahmenkonzept Sprung über die Elbe Stand September 2005

Zeitplan und Meilensteine

2006

2007

2008

2009

2010

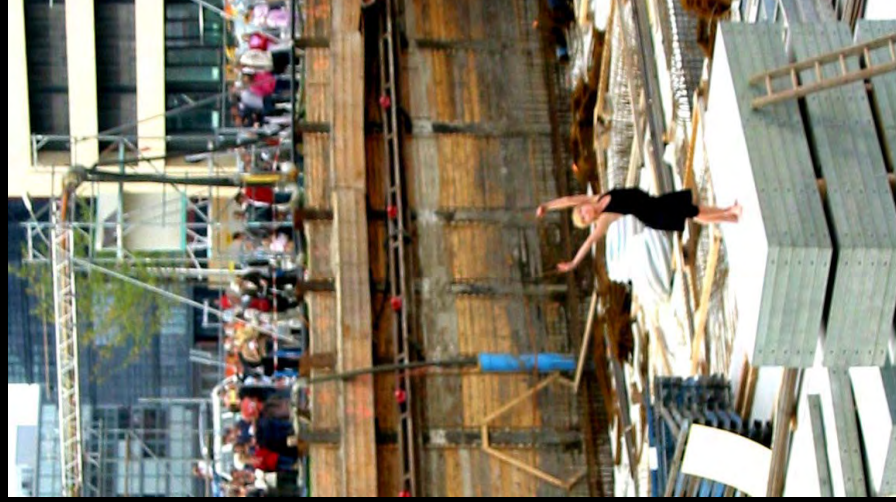
2011

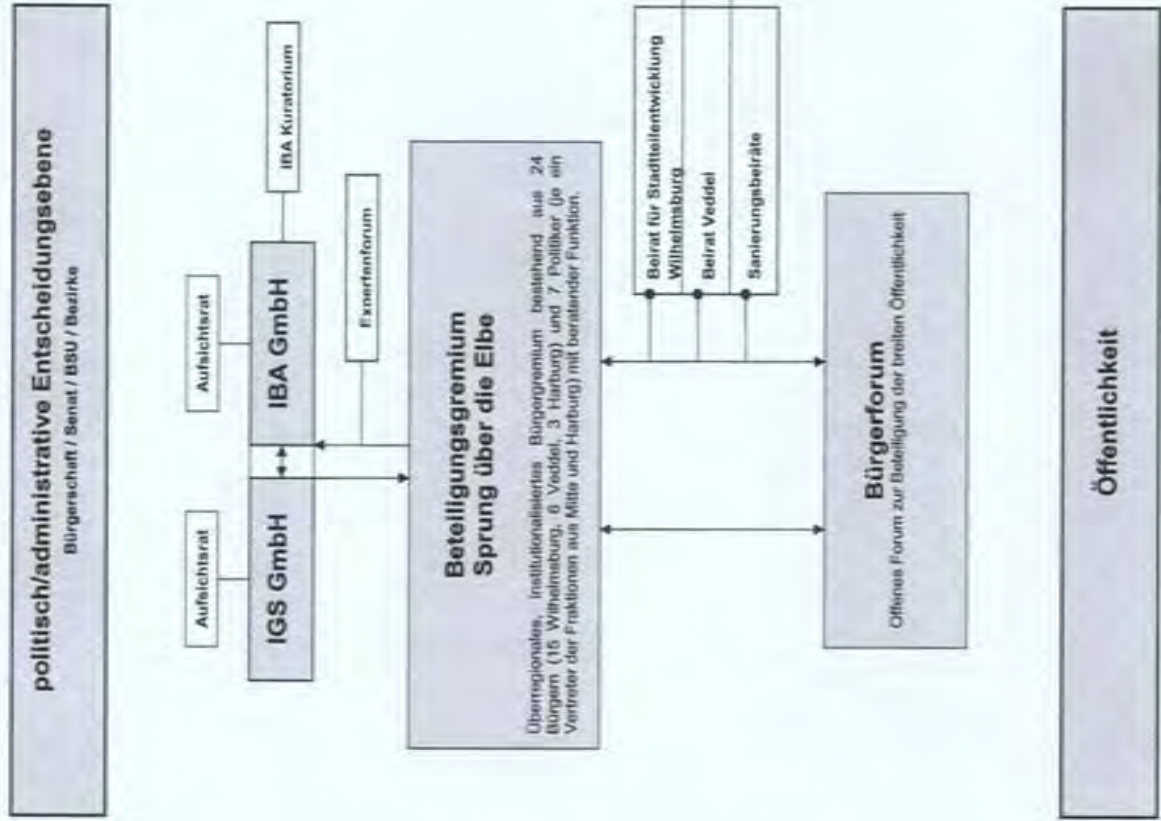
2012

2013

2014

...





A4 ABSTRACT: THEME 1 – URBAN WATER PARADIGM SHIFT – MANAGING THE URBAN WATER SYSTEM IN A DIFFERENT WAY

Peter van der Steen (UNESCO-IHE Institute for Water Education; Coordinator Theme I)

The presentation about 'Theme 1: Urban Water Paradigm Shift' held by Peter van der Steen gave an impression about the workfield and the aims of SWITCH within that theme. Investigation for 'Urban Water Paradigm Shift' takes place in all of the nine demonstration cities being part of SWITCH.

International approach

Not only within the cities learning alliances should be confirmed but also on an international level reassuring the cooperation of the demonstration cities. The way SWITCH should work is a holistic approach in terms of the water management as well as a semi-full scale approach – meaning on the level of single housing projects. A circuit of international exchange should be built up to get important information for the single demonstration projects in each city. This should strengthen the possibility to achieve a paradigm shift.

Decision-making process

To bring about the urban water paradigm shift several actions have to be brought forward. They comprise research to develop innovations, demonstration at semi-full scale, modeling and scenario analysis. Sustainability and risk indicators serve to make decisions.

Starting with the problem analysis, the definition of the objectives, the development of options, the selection of indicators, the collection of data, the implementation of selected options and monitoring and evaluation have to follow.

Sustainability indicators

The research should serve to develop innovations – not necessarily completely new but with the claim to be of international relevance. Regarding the innovation it should be checked whether it has got effects on sustainability or identified risks.

A generic list of indicators should be prepared with all the stakeholders to identify which of the indicators are important for each city.

In context with his presentation Peter van der Steen initialised a brainstorming about sustainability indicators relevant for Hamburg. The results are:

- Integration of sustainability indicators in decision making on urban water in Hamburg
- Surface water, effluent management, infiltration, ditches
- Stormwater management
- Social aspects (how the inhabitants use the water)
- Financial aspects of water supply
- Reuse of water
- Integration in urban development/ sustainability of the whole city

Discussion related to the brainstorming

Various comments were made. The following keywords reflect the discussion:

- A re-thinking of water management already took place in the 80s. Aspects as the delay of effluent; the prevention of surface and ground water against sewage water started to play a major role. One outcome of this process was that water should be left at its catchment area to avoid flooding peaks.
- Social aspect of new housing areas and water play an important role in terms of sustainability. As well in the whole of Hamburg as particularly in Wilhelmsburg various ethnics groups exist. Questions like 'Do they use water in a different way? How will they use for example the lake planned in context of the International Building Exhibition 2013? How will they use the new waterfronts? What role does surface water play for them?' can lead to a different awareness of water.
- Financial aspects also have to be taken into account. There is sufficient fresh water which is quite cheap in Hamburg. Therefore people very often do not realise the value of water.

- Political awareness and responsibility have to be part of the project to guarantee a long-term success.
- One challenge concerning the water management in Hamburg is the rising ground water table. Therefore the economical use of water occurs to be a technical problem especially in the marshland. Economical use of water also leads to a increase in price. The piping has to be flushed additionally and sewage plants are under-worked.
- It is a problem in administration that for Hamburg Water Inc. less rain water in the sewer means less costs. On the other hand for the municipality the costs are rising as they have to keep the surface water clean. There are attempts to build retention basins rather on private owned land than on public area.
- Another important element in the context of water management is the use of energy.
- In Wilhelmsburg problems of expanding cities exist as on international level do. Integration has to take place in the development of the city. On a complex level of sustainability not just sustainable water management has to be taken into account but further sustainability of life.

Attached: Abridged version PowerPoint presentation

Theme 1

Urban Water Paradigm Shift

Sustainability and Risk Indicators

July 2006

Peter van der Steen

Contents

- General introduction
- City level activities
- Brainstorm: sustainability indicators and decision making in Hamburg

SWITCH Themes

1	Urban Water Paradigm Shift
2	Storm Water Management
3	Efficient water supply for all and water reuse
4	Eco-sanitation and waste management
5	Urban water environments and planning
6	Governance and institutional change

Urban Water Paradigm Shift

- What is it?

Managing the urban water system in a different way

Urban Water Paradigm Shift

- Elements of the new paradigm

Holistic management of the entire urban water system

Decisions based on sustainability and risk

Integrated management by Institutional change

Urban Water Paradigm Shift

- Actions to bring about the shift:

Research to develop innovations

Demonstration at semi full scale

Modeling

Scenario analysis

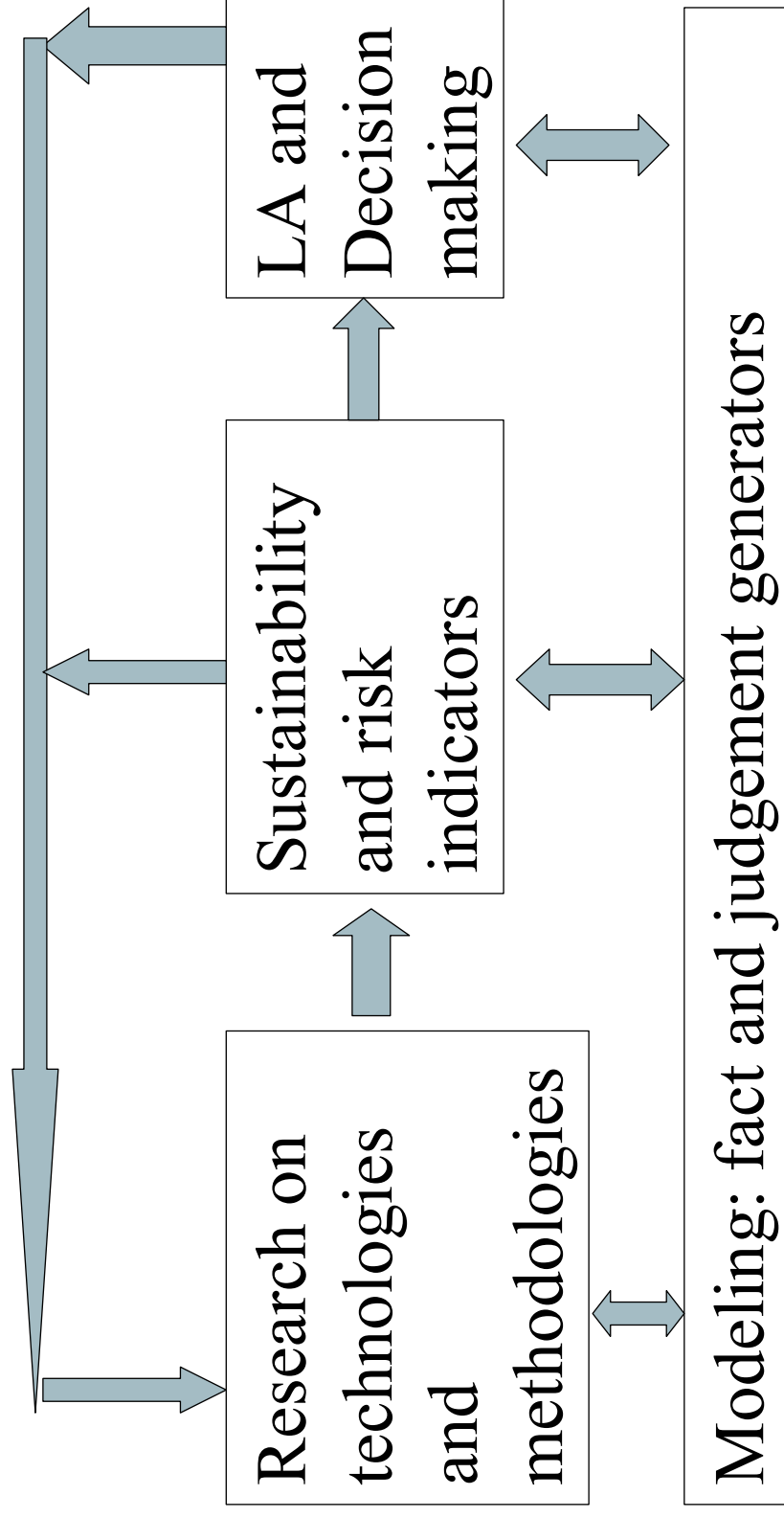
➔ Sustainability and Risk indicators

Sustainability indicators

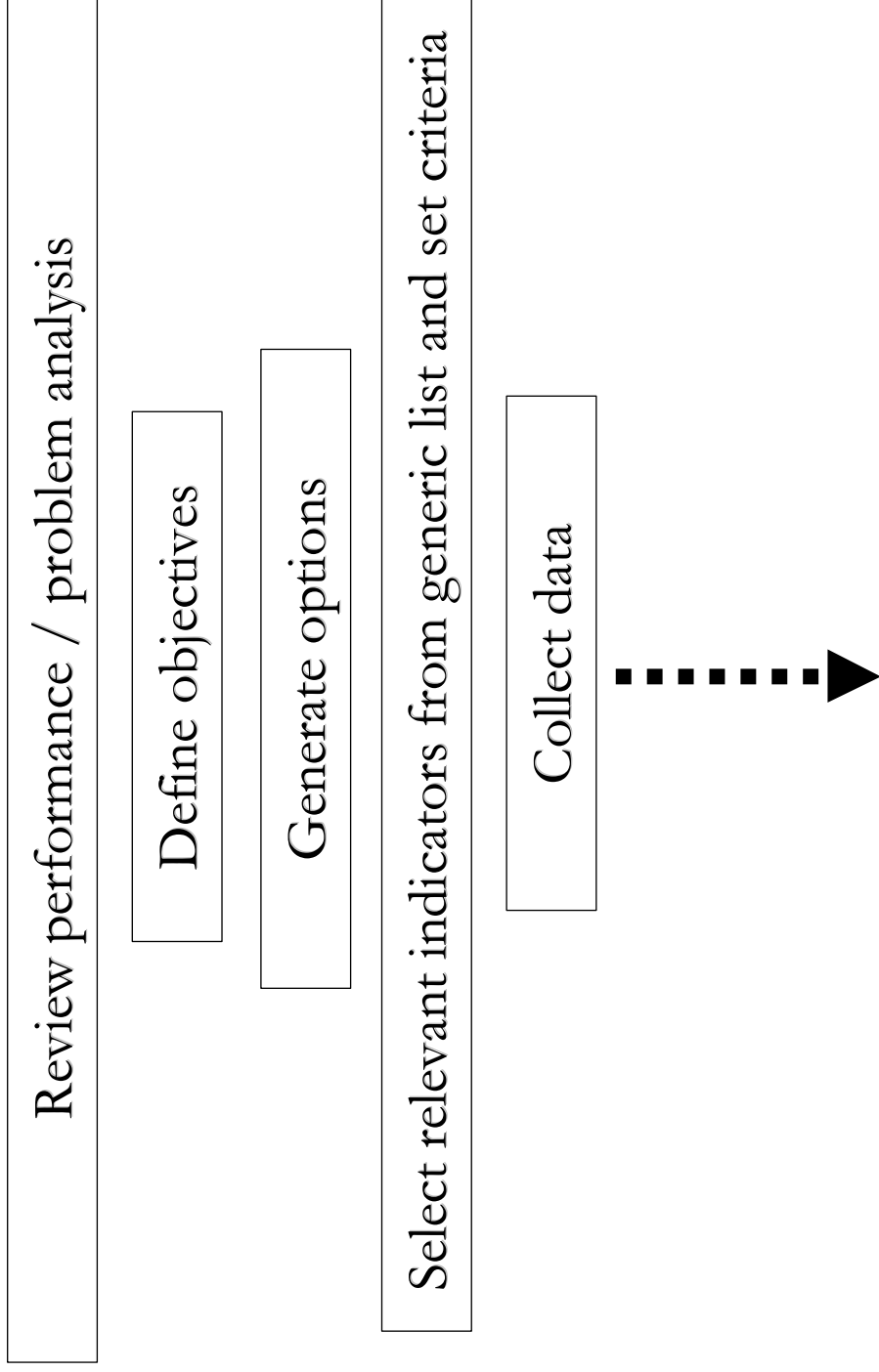
- Environmental
- Economic
- Social
- Engineering
- **Health**
- **Flooding**

Risk indicators

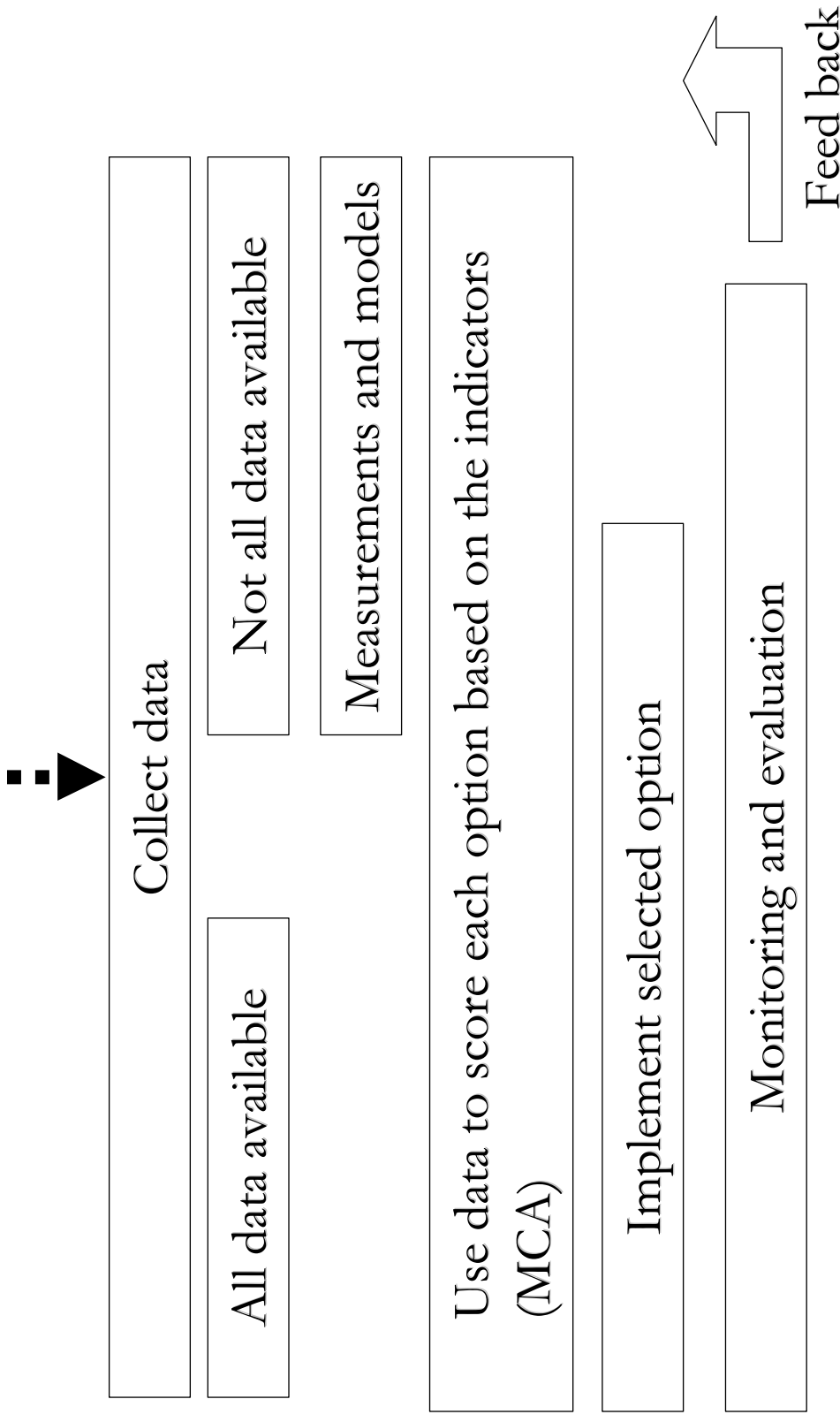
- Flooding
- Service interruptions
- Infectious diseases



Indicators and decision making



Indicators and decision making



Why a water utility would be interested to use sustainability indicators?

- Pressure from customers
- Pressure from environmental/social groups
- Government policies/ legislation
- Companies which pay attention to environmental and social issues are well managed, indication of a corporation's prospects of long term success
- Creates culture of responsibility (energy saving for instance)
- Creates confidence with customers and authorities; helps to get new projects approved (good corporate citizen)

Activities in demo-cities

1. Historical analysis: decision-mapping exercise
2. Assessing system sustainability before/after decisions were implemented.
3. Sustainability of alternatives?
4. Detailed assessment of today's sustainability
5. Objectives setting and subsequent steps.
6. Options/Scenario analysis using calibrated models (1.2) or SWITCH demo activities
7. Weighted multi-criteria analysis (Louckes, 1997)
8. Implementation and monitoring

Hamburg and Theme 1

- Integration of sustainability indicators in decision making on urban water in Hamburg

Surface water, effluent management, infiltration, ditches

Stormwater management

Social aspects (how the inhabitants use the water)

Financial aspects water supply

Reuse of water

Integration in urban development / Substainability of the whole city

- Decision making; current practice uses sustainability indicators?
- What are the most important criteria in decision making?
- Use of sustainability indicators for demo site?
- Strategy; required actions