

# **WSUP**

**Water & Sanitation  
for the Urban Poor**

## **Report from the Programme Implementation Workshop**

**Cranfield University, UK**

**November 3-7, 2008.**

**Compiled by J. Bevan  
for the WSUP Project Group**

**All presentation files can be found on the WSUP Extranet  
Each Session has been recorded by a different member of the Project Group**

PowerPoint presentations mentioned **in blue** in the text are available from WSUP on request

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Presentation PowerPoint files to be found on the WSUP extranet at: [www.wsup.com](http://www.wsup.com)



# WSUP Project Implementation Workshop

Cranfield, November 3-7, 2008.

## Key Learning points from WSUP PMs, LSPs and Presenters

### 1. Constraints to improved service to the urban poor differ between LSPs, but there are areas where the needs are acute and shared by all

**Internal View:** Key constraints in moving to scale were identified by the PMs as:

- Need for more detailed project planning & securing full project funding
- Ensuring the political will remains strong
- Matching of expertise to the needs of the projects. This is sophisticated and needs to be done carefully.
- We must develop a better understanding of how the project teams need to be resourced for full scale implementation.
- Fundraising in-country – requires detailed knowledge of government mechanisms and persistence.

**External view:** LSP partners from Kenya (NCWSC, Umande Trust), Bangladesh (DWASA, DCC), Mozambique (FIPAG, Municipal Dept Solid Waste) and Madagascar (JIRAMA) gave presentations during the workshop on key constraints in the delivery of services to the urban poor. A summary of the constraints mentioned, together with areas of professional support needed, is shown in the tables below.

### Kenya/Bangladesh/Mozambique/Madagascar: Key constraints

<b>Operational</b>	<b>Commercial</b>	<b>Community</b>
Low quality materials	Illegal connections	Relations with vendors
Water contamination /quality	High prices	Weak links with community
Poor water pressure	NRW	Urban growth
Water availability	Need for financial viability	Slum eviction
Physical access	Some public taps free of charge	Diversity
Solid waste – impact on drainage	Lack of funding	Do CBOs truly represent women & children?
Coordination of govt. departments	Tariffs	Unregistered nature of CBOs
Lack of zone-wise planning	Failure to pay	Unclear ownership of facilities in informal settlements
	Layers of commercial interest	Low capacity in management & financial planning

## Areas where Professional Support required

<b>Operational</b>	<b>Commercial</b>	<b>Community</b>
Water quality monitoring	Design of alternative tariff structures, tariff review, pricing for re-sellers, cross subsidy, minimum volume	Awareness of safe water issues
Design of effluent treatment from bio-centres	Assist in the reduction of NRW	Information & education campaigns
Sludge removal & treatment options	Improve performance and investment decisions through financial modelling	Develop systems for subcontracting solid waste management to CBOs
Applications of GIS	Assist improvement of standpipe management	Establish re-cycling systems to improve livelihoods
Mobile water treatment plants		Sanitation promotion
Identify appropriate extension zones	Assist development of local local distributors	Establish financially viable community managed system generating income
Design and guide implementation of tertiary network expansion		Assist LSP to extend service frontiers as the best long term solution
Advice on solid waste technologies	Cross-subsidy or minimum provision	Formalise sharing of O&M responsibilities
Assist development of dedicated pro-poor unit to address the low income sector		Facilitate involvement of those already engaged in delivering services
Smarter use of water/ water re-use strategy	Computerised billing systems	
Marketing approaches to sanitation and hygiene	Sharing experiences between countries	
Funding for low cost sanitation		
Improve data collection & use		
Financial modelling for improved services		
Zonal accounting system		

The areas highlighted as most likely for WSUP support were:

- Non-revenue water – management, detection and reduction. This is a critical area that warrants greater attention.
- Financial modelling
- Use of GIS for mapping peri-urban settlements
- Potential network replacement with slip-lining plastic pipes
- Strengthening the linkage between LSP and low income consumers
- Improving revenue collection
- Strengthening CBOs.

- To address capacity limitations within LSP/CBO partner organisations WSUP should consider seconding WSUP staff to support LSPs, or seconding LSP staff to WSUP.

## **2. Steering Committees are key to project governance in partnerships**

Steering Committees (SC) of local project stakeholders form an integral part of the WSUP project governance structure, and come in a variety of models. Analysis of the existing SCs (see full workshop report) shows the following key points that should be noted by those countries yet to organise their governance:

- Most countries have one SC body, which is primarily advisory but in some cases is decision making, meeting monthly or alternate months.
- The benefits have been various including consensus building, coordination, establishing ownership, the engagement of beneficiaries, and the management of difficult political situations.
- SC Members are usually comprised of WSUP project teams, project LSP partners and community representatives.
- Closer involvement by national partners (e.g. the chairperson role, Naivasha) improves local ownership and is key to successful implementation
- Community-level sub-committees are practical to oversee implementation (e.g. Maputo)
- A clear TOR helps strengthen the SC, as roles and expectations are understood.
- Continual involvement and updates are necessary for the SC to operate effectively

## **3. Lessons on project management in partnerships**

- The branding of projects has a significant influence on local engagement in and ownership of projects. Rather than being branded the WSUP project, they should have a locally agreed name “supported by WSUP”.
- Developing realistic local output indicators early on assists WSUP PMs to keep focused on objectives.
- Hosting arrangements for the Project Manager and local team within a member’s local office can become strained as the project grows. This needs to be reviewed as the project develops, as the PM may require more independence to allow an even engagement with project partners and a project pace that may not be possible within host organisation.

## **4. Project design and planning must leave plenty of flexibility to adapt as new factors will continue to emerge**

- Aim for affordable services at appropriate standards that are financially viable, avoid the temptation to undertake total slum upgrading. The best can be the enemy of the good, i.e. we need to seek out the ‘good enough’ option.

- Low income communities may be beyond the 'efficiency frontier' of LSP provision. One goal of WSUP is to assist LSPs to extend that frontier.
- A flexible approach to design and implementation is required. This means actual implementation starts in the development phase. This allows learning by doing and being willing to alter plans as conditions evolve.

#### **5. More market-driven approaches to sanitation and hygiene are needed**

Strategies for improving sanitation and the quality of latrines should adopt a market driven approach. A more commercial approach should be taken to toilet building, pit emptying and solid waste removal, and supporting local CBOs to manage these on a sustainable basis. For hygiene, the key motivations for behaviour change need to be identified and targeted with a focussed promotion campaign. These approaches hold the best promise for achieving scale.

## Workshop Participants

### Days 1-2, Project Managers, Project Group & Secretariat

<b>Name</b>	<b>Role</b>
Sylvie Ramanantsoa	WSUP Antananarivo Project Manager
Fanja Rajoeliarivony	WSUP Antananarivo Funding & Finance Officer
Carla Costa	WSUP Maputo Project Manager
Kariuki Mugo	WSUP Naivasha Project Manager
Gertrude Salano	WSUP Naivasha Finance Officer
Peter Murigi	WSUP Gatwekera Project Manager
Shahidul Islam	WSUP Dhaka Project Manager
Samuel Duh	CARE representative, Ghana
Reuben Sipuma	CARE representative, Zambia
Kadiatou Aw	WaterAid representative, Mali
Jane Bevan	Cranfield PG representative
Rob Clarke	Halcrow PG representative
Alan Etherington	WaterAid PG representative
Sylvain Lhote	Borealis PG representative
Helen Pankhurst	CARE PG representative
William Pratesi	WWF PG representative
Kevin Tayler	Independent PG member
David Walton	Borealis representative
Baghi Baghirathan	WSUP Secretariat
Paul Gunstensen	WSUP Secretariat
Tim Hayward	WSUP Secretariat
Emily Hornsby	WSUP Secretariat
Lilit Melikyan	WSUP Secretariat
Sam Parker	WSUP Secretariat
Mike Thompson	WSUP Secretariat
Richard Wilson	WSUP Secretariat
Fiona Shaw	WSUP Secretariat
Harriet Alderton	WSUP Secretariat
Hisham Hanbali	Borealis

### Days 3-5 – Guest partners from LSPs & speakers

Jose Ramampanjaka	JIRAMA, Madagascar
Berthine Razaiarimanana	Ministry of Water, Madagascar
Hafido Abacassamo	Municipal Dept. Solid Waste, Mozambique
Miguel Alves,	FIPAG, Mozambique
Josiah Omotto	MD Umande Trust, Gatwekera
Stephen Mbugua Chege	O&M Manager for NCWSC
Khandker Millatul Islam	Dhaka City Corporation
Md. Wahidul Islam Murad	DWASA, Dhaka
Richard Franceys	Cranfield University
Tim Brewer	Cranfield University
Val Curtis	London School of Hygiene and Tropical Medicine
Steve Sugden	London School of Hygiene and Tropical Medicine
Jo Parker	Independent Consultant
Simon Gordon-Walker	Independent Consultant
Juliet Heller	Independent Consultant (Communications)

Our team from Bangalore were unfortunately unable to attend, due to travel permit issues.

## Proceedings: Detailed Session reporting

PowerPoint files can be found on the WSUP Extranet.

### Part A: WSUP@ Cranfield, Workshop Agenda: November 3-7, 2008.

**Overall Goal:** To bring together Project Managers, project teams and local partners from WSUP projects in order to review progress to date, share achievements and challenges, and to discuss how we can best reach our common goal of: *“supporting local service providers to design and implement water and sanitation solutions that are economically, socially and environmentally sustainable and that serve the needs of urban poor people in developing countries”.*

Part A: Project Managers and Project Group		
Mon 3 <sup>rd</sup> Nov		Supporting Project Implementation
Preparation		PMs to bring ideas and recommendations
Morning		Projects Group and Project Teams arrive
12.00 - 1.30		Lunch
1.30 - 2.00	A1	Welcome and Introductions
2.00 - 3.30	A2	<b>WSUP roles, functions and responsibilities</b> (T Hayward) Secretariat, PG, PMs, local teams, local country offices <b>Outcome:</b> <i>Clear understanding of how WSUP project governance structure works in practice</i>
3.30 - 4.00		Tea break
4.00 - 5.30	A3	<b>Making local partnerships work</b> (S Parker) <ul style="list-style-type: none"> <li>• Logistics (PM location, PM contracts, admin)</li> <li>• How to facilitate WSUP member engagement in project work</li> </ul> <b>Outcome:</b> <i>Strategies for supportive working environments for PMs, efficient project logistics and successful working partnerships</i>
Evening		

Tue 4 <sup>th</sup> Nov		Supporting Project Implementation
Preparation		PMs to bring ideas and recommendations
9.00-12.00	A4	<b>Project Constraints – how can we improve delivery?</b> (B. Baghirathan) Group discussions on best ways to support individual projects <b>Outcome:</b> <i>Recognition of project constraints and strategies to overcome them, including how to build LSP relationships</i>
12.00 - 1.30		Lunch
1.30- 2.30	A5	<b>Monitoring &amp; evaluation – where do we want to be?</b> (L. Melikyan) <b>Outcome:</b> <i>Shared understanding of the objectives and implementation strategy for WSUP’s M&amp;E programme</i>
2.30 - 3.00		Tea break
3.00 - 4.00	A6	<b>Financial Planning, reporting</b> (F. Shaw) How WSUP finances work. WSUP reporting requirements. <b>Outcome:</b> <i>Shared understanding of financial management and reporting</i>
4.00 - 5.00	A7	<b>Fundraising</b> (M. Thompson/P Gunstensen) Guidance on developing dialogue with in-country funding agencies <b>Outcome:</b> <i>Project teams with fresh ideas for negotiating with funders</i>
5.00- 6.00	A8	<b>Wrap-up/review of Monday/Tuesday</b> (S. Parker) Review discussions so far <b>Outcome:</b> <i>Conclusions and actions from the first two days. Project Managers with clearer vision and improved support to achieve their goals.</i>
Evening		Informal introduction to WSUP for arriving partners at (hotel)



## **Session A1: Welcome and Introductions**

- Sam Parker welcomed and thanked participants for coming.
- All introduced themselves
- Brief overview: (this is a journey: second project implementation workshop; will be annual; have come a long way already, some projects starting to deliver in some countries; time to take stock to be more effective, collectively looking to make a lasting difference)
- Agenda; Tuesday opportunity to learn from management issues already arising; Wednesday+ broader includes service providers.
- Tone: learning based, practical and informal

Introductory slides shown in the file: [A1\\_Introduction\\_to\\_WSUP.ppt](#)

## **Session A2: WSUP roles, functions and responsibilities**

[Tim Hayward's PowerPoint: A2\\_Roles\\_&\\_Responsibilities.ppt](#)

- Discussion re steering committee addition to the project governance slide. Different models in the different countries (Kenya x2, Mozambique, Madagascar, Bangladesh, India). Differences in terms of the arrangements, realities on the ground, phases, historical reasons why the arrangements might have evolved differently. How effective are they in each country? Who is involved? What issues are covered? What is the level of power of these committees – is it like a Board/secretariat relationship as the ideal? Skills required in managing the Steering Committees. How difficult is it to have two bosses? (line management vs. Steering Committees) bottom up (community/local gov)/top down (money) management processes required. Two levels?
  - ⇒ Decision to work more on this area and capture different country experiences – see *Table 1 below*
- Discussion about care with language: WSUP **supported** not WSUP projects
- Discussion about member country office and project manager relationship challenges. Manager hosted by one partner and reporting to them but that partner also needs to report on that component as an implementer. Also sometimes local WSUP views different from the WSUP secretariat, or WSUP members having different views of way forward in terms of the level of involvement of the service provider. Issue of location in the offices, logistical issues – which can be made easier if located in the service provider or local government.
- HR terms, logistics, fund/flow, finance, appraisal

### **Steering Committee Review**

Eight basic questions were asked of all PMs regarding their SCs. Analysis of the information collected on the existing SCs shows the following key points that are useful to share, particularly for those countries yet to organise their governance:

- Most countries have one SC body, primarily advisory, that meets monthly, or alternate months. Some have 2, at different levels, the second being more operational.
- SC Members are chiefly WSUP partners and key stakeholders, including community representatives.
- Closer involvement by national partners (e.g. the chairperson role, Naivasha) improves local ownership.
- Community-level sub-committees are practical to oversee implementation (e.g. Maputo).

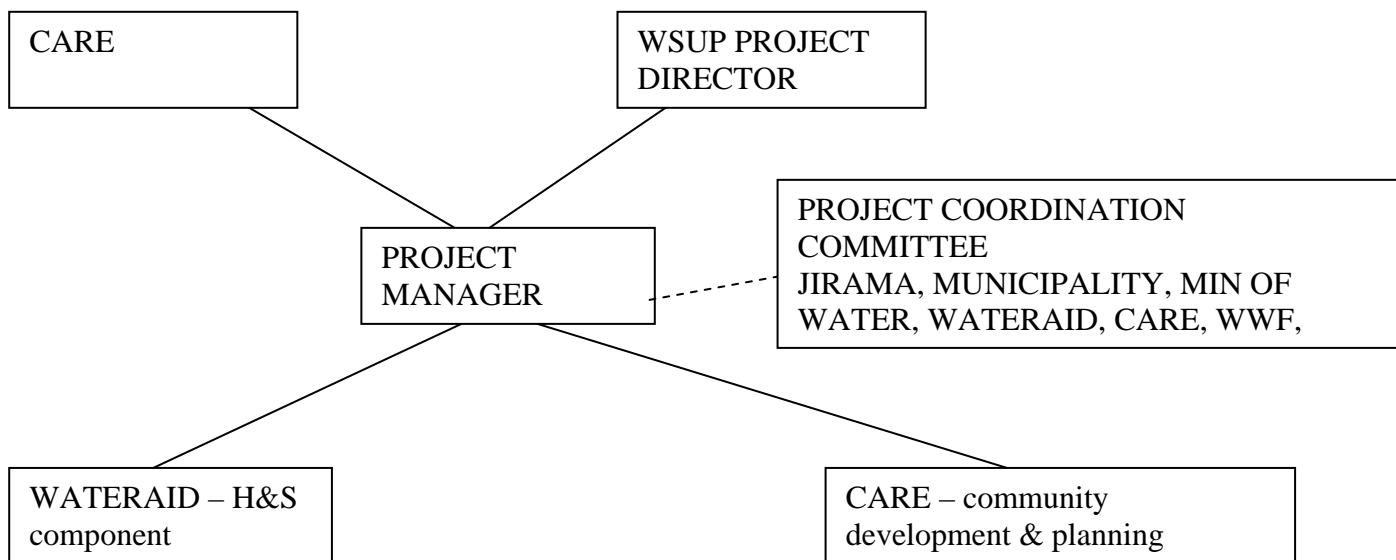
- Identification and involvement of key players can be crucial for success (e.g. Bangalore)
- A clear TOR helps strengthen the SC, as roles and expectations are understood.
- Continual involvement and updates are necessary for active participation.

Full answers to the questions, compiled through individual discussions with each project manager, are tabulated below, together with diagrams of some of the SC structures.

NB WSUP Projects in Lusaka, Zambia and Bamako, Mali have not yet developed Steering Committees.

A report detailing the Gatwekera model in more detail can be found at:  
[A2\\_Gatwekera\\_Governance\\_Process\\_Report.doc](#)

### MADAGASCAR STEERING COMMITTEE



**Table 1: WSUP Steering Committee Compositions as at November 2008**

	<b>Questions</b>	<b>Naivasha</b>	<b>Gatwekera</b>	<b>Maputo</b>	<b>Antananarivo</b>	<b>Kumasi</b>	<b>Dhaka</b>	<b>Bangalore</b>
<b>1</b>	<b>1 or 2 committees?</b>	1, the PEC: "Project Executive Committee"		3 Groups: 1. National WSUP members 2. Technical advisory (planned) 3. Bario/ community	Project Coordination Committee	1 with 12 members	1 – not yet operational. Planned to meet every 2 months.	1: "Stakeholder coordination committee" recently formed, planned to meet every 2 months.
<b>2</b>	<b>Who is involved?</b>	Local Service Provider, Water Board (Regional Regulator) and Community Representatives.	Umande Trust Care Kenya Nairobi City Water and Sewerage Co. (NCWSC) Nairobi City Council (NCC) National Environmental Management Authority (NEMA) Athi Water Services Board (AWSB) Provincial Administration Local Councillor Water Vendors Association (Maji Bora Kibera) Community WSUP committee TOSHA (local CBO)	1. WaterAid, Care, Unilever, WWF 2. FIPAG, Municipality, AGM, community 3. WSUP, Municipality, ADM, Architecture's University, Engineers without Frontiers, Municipal Administration, community	WaterAid, Care, WWF.	Kumasi Metropolitan assembly, Waste management division, Environmental health division, Ghana water Company, 5 community reps (5 areas), Care Ghana, WaterAid	WaterAid, Care, DCC, DWASA and Halcrow.	Municipality (BBNP), BWSSB, Karnataka slum clearance board, Karnataka infrastructure devt. Board, Slum community representatives.

	Questions	Naivasha	Gatwekera	Maputo	Antananarivo	Kumasi	Dhaka	Bangalore
			Village Elders					
3	Who Chairs?	The Water Board - as they are the owner of the public assets	WSUP	1. 2. 3. Municipality	WSUP PM	Kumasi Metropolitan assembly	CEO of DCC	The Pollution control board – main WSUP partner
	Who is Secretary?	WSUP PM	Umande Trust	1. WSUP 2. WSUP 3. WSUP	WSUP PM	CARE rep.	WSUP PM	Probably WSUP
4	Advisory or decision-making?	Decision-making	Advisory	1. Advisory 2 & 3 – decision making	Advisory and consultative	Decision-making	Both	Advisory & consultative
4a)	Key decision examples	A key decision was the exact location of the pilot project. Other examples such as project management structure and extending the project to other areas were also agreed.	Recommendation to provide youth group with a bio centre project; recommendation to equally distribute water kiosks between water vendors and other community members	None yet	Coordination of activities		None yet	Needed to obtain certificates of 'no objection' from the householders.
5.	How/why did the SC evolve in this way?	WSUP Project Manager discusses issues and aims to build a common view prior to the meeting – in this way the decisions are taken relatively easily. In the process it	There is a need to incorporate all stakeholders and keep them and beneficiaries involved and informed in the project. A governance report was commissioned	Pushed by WSUP team	There is a need for coordination of activities between the 3 WSUP local member partner (Care, WWF, WaterAid). The PM present the state of advancement of			The PCB is the main WSUP partner, and has brought the other stakeholders around the table.

	Questions	Naivasha	Gatwekera	Maputo	Antananarivo	Kumasi	Dhaka	Bangalore
		is important to build trust between the community and the officials as the local people have had little support in the past from Government.	that established roles and responsibilities to ensure good governance and communication.		the project, information to be shared, received from other sources (UK, ...) and ask for suggestions, observations, and comments in some cases			
6a)	<b>Key strengths</b>	everyone has their say and the final decision is binding on all.	There is a need to incorporate all stakeholders and keep them and beneficiaries involved and informed in the project. A governance report was commissioned that established roles and responsibilities to ensure good governance and communication.	None yet	Involvement of all of WSUP partners in the project.	Very diverse – representation by LSP & communities helps ownership of process	None yet	The first time all the key LSPs/partners have been brought together around the table.
6b)	<b>Key weaknesses</b>	the politics is difficult to deal with as everyone has different views	Quick decisions require effort	None yet	It will be worth to involve LSP and the ministry of water in the steering committee.	Community reps often do not contribute much to discussions	None yet	Weak commitment to date from stakeholders. No WSUP members

	Questions	Naivasha	Gatwekera	Maputo	Antananarivo	Kumasi	Dhaka	Bangalore
					Could this SC take some decision about local issue or would they have to wait from WSUP UK ?			involved.
6c)	<b>Key lessons</b>	Prepare well for each meeting, understand the views of all the different parties. It's a slow process but it is important to understand all views and the politics behind the different positions.	Community members have been kept informed. Project is being implemented according to the needs of the stakeholders	None yet	Collaboration between WSUP members	There is enthusiasm among members of the communities for the project, as their reps keep them regularly updated.	None yet	WSUP can't force parties to get involved.
7	<b>Diagram with reporting lines</b>	See below			See below	See below	None yet	None yet
8	<b>TOR?</b>	Yes	Yes	For 3 yes – in Portuguese	None yet		None yet	None yet

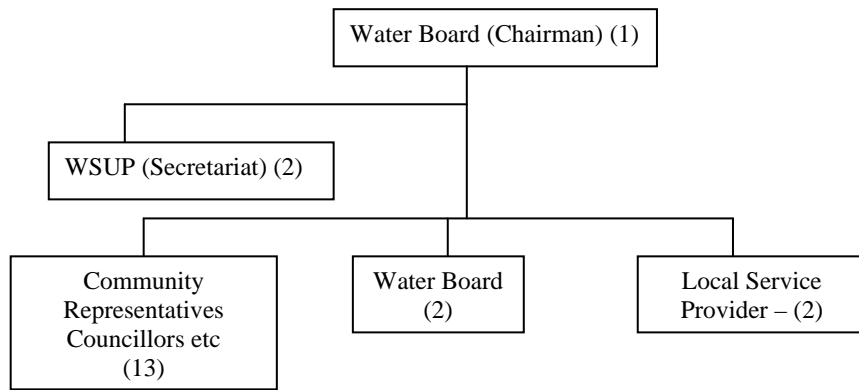


Diagram of Naivasha PEC committee layout and member numbers

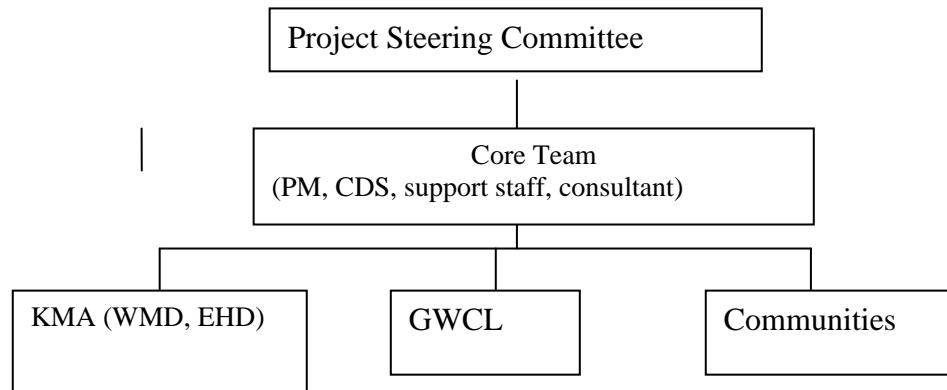


Diagram of Kumasi WSUP Project Steering committee

### **Session A3: Making Local partnerships work**

Sam's PowerPoint – as above in A1: [A1\\_Introduction\\_to\\_WSUP.ppt](#)

- Branding: would it be helpful to have projects with a local name ...supported by WSUP to help local ownership and WSUP partners engage?
  - ⇒ Feedback from Ghana, Madagascar, Kenya, Mozambique – general agreement to have local name/names to be developed locally with assisted by WSUP and funders names where required
  - ⇒ Use branding to maximize local ownership and sustainability – even if WSUP doesn't appear in the title for example
- How can WSUP help Project managers engage with partners in countries more effectively?
  - Madagascar issue of expansion in the next phase and how best partners divide up the work by issue (e.. water vs. sanitation/hygiene) or geographically and division in terms of amount of engagement of different partners (same as before? Respond to changed interest levels of partners)
  - Naivasha lean budget so participation of partners limited at corporate level, at country and at project level often different dynamics different support being provided – how accountable are the different levels from project to the Board? It relies on people being interested in the concept of partnership
  - Gaps in terms of knowledge of partnerships from Board to country level, to project level and ensure common understanding and ensure clear targets so that it isn't left to individual interest
  - Mozambique, issues with WWF – wasn't much local interest
  - Generally important that it is not just one or two members of staff knowing but the whole organization and those who are directly involved also need to have this clear, makes the job of the project manager easier
  - WSUP clearer understanding of members interest in the countries and invest in ensuring that partners understand the value of the partnership – more earlier on. Local offices very autonomous – also restructuring sometimes. When WSUP has examples of success easier to get buy in.
  - WSUP sometimes doesn't fit within the work plans of the organization. The closer the link the easier/greater the interest.
    - ⇒ Communications, stronger, from the beginning and ongoing
- Does where located matter? Where best for partnership?
  - Maputo need to make another arrangement in the future, but not at the moment. Right place = close to the municipality (issue of space, recruitment)
  - Naivasha, hosting = temporary arrangement, staff needs higher priority than WSUP needs, the closer to the service providers the better
  - Sam (separate out, space, services (photocopying), hiring/employment, purchase of vehicles, legal identity issues (re local funding))
  - Tana, better to have independence because of the reporting issue. Strengthen the partnership if in a separate office
  - WSUP should have it's own HR rules, financing mechanisms etc, important to start looking towards this as an option as we move into implementation. Program managers free to develop their own arrangements which they believe best equips them to encourage partnership and delivery of goals (location outside host, location close to the service provider, working mechanisms to give the freedom which will ensure efficient and effective partnership)



- On assessment might find existing institution is better than other options in which case during the implementation phase might need to re-negotiate stronger links within the host organization bearing in mind increased size
- Opportunity for the Steering Committee to play a role in this decision
- Could the HR work be through the host but the management be through a different line (e.g. to the Steering Committee) and the location also possibly be outside the host office? E.g. seconded?

#### **Session A4: Project Constraints – how can we improve delivery?**

Baghi's slides are in the file: [A4\\_Improving\\_Delivery.ppt](#)

How can we improve and accelerate project delivery to reach our ambitious targets?

Are various aspects optimal?

e.g. Project structure, Capacity, skills, resources, Project and financial management, Hosting arrangements,

Questions on partnerships:

1. should we second staff to the LSP?
2. Should the LSP second staff to the WSUP team?
3. Can we partner with LSPs more directly in implementation –and make LSPs responsible for project components?
4. Should WSUP offer financial support to LSP programmes which are consistent with WSUP mission

Do we need more detailed plans prior to full implementation?

Are we overly dependent on WSUP partners for implementation?

Do we under-estimate implementation requirements?

#### **Summaries of issues / next steps by Project Managers**

- Capacity building of LSPs
- Improving levels of trust between LSPs and consumers – each side distrusts the other
- Funding not yet secured; no funds available for designs / plans / costings
- Delivering the pilot
- Hosting arrangement
- Technical constraints within the LSP. E.g. to supply water
- Detailed implementation plans not produced
- Moving from strategy to plan
- Bringing more stakeholders into the Project Steering Committee
- Technical aspects of pilot
- Building capacity of communities to manage / sustain new facilities
- Overcoming LSP reluctance to serve poor communities
- Eviction threats

- Minimal involvement of WSUP member
- Matching plans with budgets
- Developing "plan B"s with lower targets to match current funding availability

Small group discussions:

**Orange group:** discussed Maputo:

Only 3 NGOs to partner with; need 30 or capacity building  
 AdeM has 15 years lease  
 Many SSIPs  
 NGOs, AdeM and SSIPs all need CB  
 Need to widen membership of WSUP Steering cmtee  
 Be based at Care or find a new location?

**YELLOW GROUP**

**Too Reliant on WSUP members for implementation?**

Avoid 100% reliance as this may limit scope  
 Build team to fit project; with or without WSUP members  
 Some NGOs have little or no flexibility in country programmes  
 Seek where possible a common goal and strategic rationale for partnership

**Resources for Scale Up?**

Naivasha needs to build a team of 7 to achieve full project  
 Tana – needs LSP CB manager  
     More detailed plans  
     Care & WAid can scale up thru partners

Dhaka needs to build a team  
     Care and WAid have capacity but not sure it is available  
 In general, we may be underestimating requirements.

**Wider networks?**

Need to work with the best possible partners to deliver

**Planning**

As we increase our work with more donors, so we need to improve the quality of planning.

**Mr. K. Mugo presenting the 'blue group' findings in session A4**



## BLUE GROUP: STRENGTHENING LSP PARTNERSHIPS TO EXPEDITE IMPLEMENTATION

ISSUE	ACCEPTABILITY	JUSTIFICATION	REQUIREMENTS/RISKS
1. Should we second WSUP staff to LSPs to improve CB programmes?	Yes	<ul style="list-style-type: none"> <li>• In LSPs where there are obvious capacity gaps, but this should be on case-to-case basis depending on the capacity gaps of the LSP.</li> <li>• Provides a clearer linkage with the LSP</li> <li>• Some capacity building issues require long-term engagement than a one-off consultancy e.g. NRW</li> </ul>	<ul style="list-style-type: none"> <li>• Long-term engagement may encroach into political issues within the LSP, and hence, they may prefer short-term (superficial) assistance, hence they may</li> <li>• The level of confidence/trust and a suitable agreement between WSUP and LSP to enable management of the process</li> <li>• It should be supported by a mechanism for the LSP to absorb skills and expertise</li> </ul>
2. Should we encourage LSPs to second their staff to work with WSUP?	Yes	<ul style="list-style-type: none"> <li>• Helps to build strong political support within the LSP for advocating pro-poor service delivery</li> </ul>	<ul style="list-style-type: none"> <li>• It should be on the basis of developing capacity within the senior management of the LSP on pro-poor service delivery</li> <li>• Must not necessarily be long-term (Cranfield Model)</li> <li>• An incentive system should be in place to ensure advocacy and practice of the skills</li> </ul>
3. Can we partner with LSPs more directly in implementation – LSPs responsible for project components?	Yes	<ul style="list-style-type: none"> <li>• This provides a meaningful linkage with the LSPs in accordance to WSUP Model</li> <li>• LSPs are good in the business for water supply and sewerage</li> </ul>	<ul style="list-style-type: none"> <li>• Limitation of the LSP in terms of ability to engage with the community , financial and technical capability of large scale engagement must be assessed</li> <li>• Partnership should go beyond LSPs to other institutions with mandate on hygiene, health, sanitation and environmental management</li> <li>• Time requirements should be assessed before-hand on case-to-case basis</li> </ul>
4. Should WSUP offer financial support to LSP programmes which are consistent with WSUP mission?	Yes	<ul style="list-style-type: none"> <li>• To unblock bottlenecks within partnership</li> <li>• Demonstrates the desire of WSUP to carry out capacity building support of LSPs</li> <li>• Capital funding for infrastructure and CB programmes often limited</li> </ul>	<ul style="list-style-type: none"> <li>• Need to discuss with LSPs on their prevailing limitations and the required support, financial or otherwise</li> <li>• Need for WSUP to assess actual limitations and the required support or otherwise</li> </ul>

## **Session A5: Monitoring & Evaluation – where do we want to be?**

- Began with 10 minute phone call from Louis Boorstin in Delhi, of the funding agency BMGF (Gates), reinforcing the emphasis they place on M&E, and on strengthening the WASH system to improve capacity for delivery/sustainability.

Lilit's slides shown in the file: [A5\\_Monitoring\\_&\\_Evaluation.ppt](#)

- All Project managers requested to plan own M & E indicators, as these will vary between countries. LM will send a blank list of outputs needed, for which indicators will have to be developed. These may be sourced from e.g. baseline surveys, or partner records.
- As well as key indicators, narrative/qualitative information is also being looked for – the story behind the figures.
- Data will need to be standardised between projects and with the JMP of Unicef/WHO to allow comparison. This will be coordinated by Lilit.
- The history of partnerships within WSUP should also be monitored.
- PMs to send preliminary lists of indicators to LM by January 2009.

## **Session A6: Financial Planning, reporting (No ppt file)**

### **1. Where does WSUP funding come from?**

Funders:

Gates

DFID

UN HABITAT

KSPCB

KFW

Other trusts

WSUP partners

### **2. Where do we spend it?**

- Projects
- Project Support
  - Capacity Building
  - Environmental management
  - Monitoring and Evaluation
  - Projects Group
  - Secretariat
- Communications and advocacy
- Fund raising

### **3) How do we spend it?**

- Different structures
- Different payments

### **4) Income plus expenditure totals**

- Via Secretariat
- from Consultants
- from local members

Project spend 2008/9 = approx 2 million GBP and we have project support costs and sec costs. We have a slight funding gap between what we would like to spend and what

we have confirmed. By 2010 we want to increase to 4 million (other costs similar). We have a bigger funding gap.

**We need to have project budgets and plan B (we can only spend what we have i.e. what funding is confirmed).**

**We have to be rigorous and clear about how we prepare our budgets and how we spend our money.**

5) Who do we need to report to?

- Funders,
- Audited accounts (member transactions; types of costs e.g. Salaries) – these are public documents
- Project Managers and Project Directors
- WSUP Board

6) What information do we need to report?

Project	Phase and component	Task Orders	Member	Funder
Type of cost				
E.g. salary				
travel				
office				
Toilet block				
etc				

Not easy

7) the fruit salad budget problem

We have different solutions. i.e. Mugo has a different budget style than WSUP Sec and again different for DFID version

This is really difficult for Fiona to know which budget to report against.

Solutions??

**We MUST have standardization of coding structure that we use to report!!! This is a key thing!! We must do it quickly!**

so can compare across projects and report to donors etc.

The different Management organizations have different codes.

Second problem: **Getting financial reports from in country members is very hard to do and very painful!**

**Reporting deadlines are not met which means that we can't report back to donors**

We need a solution for this!

**DISCUSSION:**

Sometimes the problem is that the payments are delayed - If problems exist let FS know soon

This is part of the wider hosting problem (WSUP is often looked at slightly differently).

The PM does not have time to sit on Administration Dept.

What about provisional reports (based on print outs of expenditure) then round up next time?

We need to break this cycle even if we report with a 10-20% variation at least we are reporting.

Helen said that in her partnerships this temporary approach has not worked. What she has done is gone for monthly reports.

**ACTION:**

Budgets – FS to work with PDs and PMs to prepare standardised budgets using WSUP code structure **by end December**.

One month after the quarter is needed in member country offices to close the accounts so go for lobbying the funder for more than a month time after the quarter for preparation of accounts. Mike to ask the donors if we can have some more time each month.

FS to look at monthly accounts for larger project spends

FS will contact the finance people in member organizations.

WSUP members need to deliver timely reports.

We will need better and more sophisticated account packages as money for projects is scaled up

Commitment made by Secretariat that all transfers being made in the UK will be sent monthly to the local PM (the PM should already know that but it is a means of providing a check and balance to see if there has been a break down in communication.

**Clarification:** The individual who is accountable to the Board is the **PD** (but the PM is accountable in country and no PD would make any substantial expenditure without the PM knowing and agreeing).

**Session A7: Fundraising**

**Mike Thompson on context**

[Mike's and Samuel's slides are on : A7\\_funding.ppt](#)

What we have achieved so far – Portfolio bids, funds flowing through Secretariat – DFID, Gates. Live bid in with Rockefeller Foundation – hoping to obtain programme funding up to \$1.5 million per year. Also, hoping to obtain funding of about \$1 million per year from Coca Cola, also for programme funding.

DFID going up to £200 million per year for water and sanitation in Africa by 2011. Their recent policy paper makes specific mention of WSUP.

Funding strategies are now in place for the six countries in which projects ongoing.

Everyone should play a part in promoting/supporting WSUP in order to facilitate fundraising.

There is a funding gap. At present, it is quite small but it will raise to \$25 million by 2013. We will need £1.6 million in total to cover WSUP operational costs.

Tana and Maputo well funded through Gates Foundation. Others critical – for example Gatwekera needs funding fairly urgently – included in proposal to Rockefeller.

Various consultants working on promoting WSUP with specific donors.

Project managers and funding officers key in country programmes, playing advocacy and promotion role.

In-country funding strategies are supported by funding consultants who have helped to set up strategies.

WSUP London can help with standard terms of reference for Financial Officer, consultants on financial modelling, consultants for bid writing, standard proposals and funding action logs.

Reporting to existing donors is important – without good reporting, they are less likely to fund follow-on activities.

If possible, project managers should identify and use local funding consultants as these will be cheaper than those based in the UK.

In time, as relationships with funders become consolidated, it should be possible to work with a smaller number of regular funders. Responsibility for individual project funding generally lies with individual project managers, but Secretariat responsible for portfolio funding.

### **Discussion points**

- What aspects of funding and funding approaches are working well?
- What aspects are not working well and what are the main challenges?
- What additional support can the Secretariat provide?

Carla – Initially funding available for Maputo. Only at meeting in Nairobi did she realise the need to provide complementary funds. First discussions with main partners suggested that raising additional funds would not be easy. Objective now to access funds through ongoing EIB project. Main challenge now is to have another person recruited and trained to focus on fund raising.

Mugo – In Kenya, most of the money available from donors in-country is meant for Kenyan organisations. So, difficult for WSUP to apply for funds directly. Donors say that they will consider proposals on behalf of local partner organisations but in practice are less likely to support such proposals.

Need for funding officer who can focus on fund-raising. There are a lot of competing priorities for the Project Manager and funding is often not one of those priorities. Good support from London.

Tim – How do you see the proportion between money flowing through Secretariat and that accessed by country programmes directly? - To be covered by Samuel Doh during his presentation.

P emphasised that he is available as an additional resource within the London team.

### **Samuel**

Most major donors giving funds directly to the Ghana government, usually as part of multi-donor Budget Support Programme. (Around 60% of government's capital programme supported by donors). The Dutch government provides funds both for budget support and through support to specific programmes. It is providing funds to the amount of 317 million euros to the water and sanitation sector over the period 2002 – 2011 through the Mixed Credit Programme. (46% grant and 54% soft loans). About 58% spent to date. There appears to be potential there for funding to support WSUP activities. The WSUP Kumasi project is in line with the Dutch focus on both watsan and the urban poor. However, money has to go to government and so has to be accessed by WSUP's local government partners, particularly Kumasi municipality. Once money is given to KMA, it will be transferred to a separate bank account. Mayor and Samuel were to visit the Minister of Finance to get agreement on process, which has not been done previously. It two weeks to obtain meeting. Mayor emphasised need to follow-up meeting with formal letter – signed by Mayor and delivered to Minister by Samuel after Mayor had to fly back to Kumasi urgently. A five page proposal was prepared with summary budget, amounting to \$5.5 million. This was then to be forwarded to the Dutch Embassy. Once the Dutch Government gives approval, the Cabinet will have to agree that the amount will be part of next year's budget. This



should not be a problem but the key need now is to get Dutch Government approval in time to include the amount in next year's budget.

Major challenge is to get politicians to act in an election year – it took a long time to set up meeting with Mayor and 2 weeks to see Minister. Minister then took 8 days to sign letter and 2 weeks to make application to Dutch Government.

There is a potential problem in the impending change of government. If ruling government wins, there should be no problem but there could be problems if challenging party wins. Because a new administration assumes office in January 2009, budget is provisional.

Helen suggested splitting up into groups to provide greater opportunities to discuss issues such as community involvement. Sam asked that presenters to be asked to speak specifically on the urban poor, the constraints on serving them and how WSUP can help. If possible copies of presentations should be made ahead of the main presentations. Hard copies can then be shared with everyone.

General question from Tim – what have we learnt from the Ghana process. Samuel – it helps to have a title. Best way to get access is to show-up but be prepared to wait.

Find out which group the Minister comes from and try to talk to him in his own language – makes him relaxed.

### **Session A8: Sam Parker – Wrap up session**

Communications – Several people have noted the need to improve communications.

Juliet Heller, communications consultant is arriving tomorrow. Need to start being professional about communications. Juliet will prepare communications action plan.

WSUP is going to prepare a video of its work. Requests from funding agencies – something short, sharp and clear on what we have done and what we are going to do.

This is likely to be best if it draws on inputs from partners on how WSUP is helping them. Plan is to spend some time interviewing invitees tomorrow. Aim is to prepare something that can be showed at the World Urban Forum next year.

On Thursday, invited partners will be invited to talk to the group. Purpose of this is not to make speech about their organisation but rather for them to guide us on the constraints on providing improved services to the urban poor and how WSUP can help to overcome those constraints.

Islam has given outline, introduction, initiatives, constraints and ways forward, one from City Government and one from DWASA. Nairobi presentation will be from Josiah and Nairobi Water Company. Jose will talk about Tana – talk should not exceed 10 minutes. Carla – both representatives have been informed. Talk about solid waste will be tentative as still no definite proposals in this area?

Aim will be to have two country representatives talking and then discussion around the presentations. Sam emphasised the need to focus on what WSUP can do.

The aim should be to share conclusions with partners on Thursday.

### **Session A8a (Additional Session): William Pratesi - Environment, a cross-cutting issue**

The related slides can be found in: [A8\\_Environment.ppt](#)

WSUP mission statement emphasises the need to develop environmentally sustainable approaches. WSUP projects will seek to have a positive environmental impact.

Need to ensure that there is a wider city plan for water resources. .

Need to strengthen relevant institutional frameworks.

Need to climate-proof projects.

Under the Gates Grant, there is \$400,000 available for environmentally related activities. Cranfield will send students to work on IWRM guidelines.



## Part B: WSUP@ Cranfield, Workshop Agenda: November 3-7, 2008.

**Overall Goal:** To bring together Project Managers, project teams and local partners from WSUP projects in order to review progress to date, share achievements and challenges, and to discuss how we can best reach our common goal of: *“supporting local service providers to design and implement water and sanitation solutions that are economically, socially and environmentally sustainable and that serve the needs of urban poor people in developing countries”*

<b>Part B: Project Managers, Project Group and Partners</b>		
<b>Wed 5<sup>th</sup> Nov</b>		<b>Increasing technical understanding of key urban W &amp; S concepts and their application to WSUP projects</b>
<b>Preparation</b>		PMs to bring ideas, issues and recommendations
<b>9.00-9.30</b>	<b>B1</b>	<b>Background to the WSUP partnership</b> (S Parker/PG) Brief introductions to all partners & newcomers
<b>9.30-11.00</b>	<b>B2</b>	<b>Water and sanitation for the urban poor</b> (R. Franceys, Cranfield) Experiences elsewhere to date <i>Outcome: Increased awareness of potential solutions for peri-urban WS&amp;H</i>
<b>11.00 - 11.30</b>		Coffee Break
<b>11.30-1.00</b>	<b>B3</b>	<b>Benchmarking in Water &amp; Sanitation Utilities</b> (S. Gordon-Walker) How to use benchmarking to improve operational efficiency <i>Outcome: An understanding of the practical application of benchmarking</i>
<b>1.00-2.00</b>		Lunch
<b>2.00-3.30</b>	<b>B4</b>	<b>Financial Management Tools</b> (M Thompson) What is financial modelling, what tools are available and how can they be used to help LSPs improve services <i>Outcome: Ideas for how LSPs can use financial modelling to strengthen service provision</i>
<b>3.30 – 4.00</b>		Tea break
<b>4.00-5.30</b>	<b>B5</b>	<b>Dealing with non-revenue water</b> (J. Parker) Introduction to NRW and how to reduce it. <i>Outcome: Deeper understanding of strategies for reducing NRW</i>
<b>5.30-6.30</b>	<b>B6</b>	<b>Urban GIS for mapping and monitoring</b> (T Brewer, Cranfield) A demonstration. <i>Outcome: First assessment of the capabilities of GIS for WSUP projects</i>
<b>Evening</b>		

<b>Thu 6<sup>th</sup> Nov</b>		<b>Improving WSUP’s support to LSPs through greater understanding of their perspective and constraints</b>
<b>Preparation</b>		LSP participants to prepare a 10 minute presentation for one of sessions B7 to B9
<b>9.00-10.30</b>	<b>B7</b>	<b>The LSP commercial view</b> (LSPs) Constraints/incentives for increasing coverage in peri-urban areas. 2-3 presentations (10 mins) from LSP partners followed by discussion. <i>Outcome: Better understanding of the commercial issues facing WSUP partner LSPs</i>
<b>10.30-11.00</b>		Coffee Break
<b>11.00-12.30</b>	<b>B8</b>	<b>LSP operational challenges</b> (LSPs)

		2-3 presentations by LSP partners. Discussion on capacity gaps and how WSUP can help build this capacity <i>Outcome: Strategies for supporting LSPs reach urban poor</i>
12.30-1.30		Lunch
1.30-3.00	B9	<b>Building community capacity</b> (H Pankhurst) How to liaise with, and build capacity of, urban communities as part of strengthening services. Experiences and challenges. <i>Outcome: Improved understanding of community management issues</i>
3.00 – 3.30		Tea break
3.30-4.30	B10	<b>Key factors for success</b> (S Parker) Drawing together the main learning points from each of the sessions. Summarising how WSUP can improve its support LSPs. <i>Outcome: Conclusions of the day's discussions</i>
4.30-5.30	B11	<b>Plastic technologies for urban water &amp; sanitation</b> (D Walton) Technical options/demonstration <i>Outcome: Familiarity with current pipeline technology</i>
Evening		

Fri 7 <sup>th</sup> Nov		Improving Sanitation and Hygiene
9.00 – 10.30	B12	<b>Hygiene promotion in peri-urban communities</b> (V Curtis) <i>Outcome: Participants aware of proven techniques to improve health in slums</i>
10.30-11.00		Coffee Break
11.00-12.30	B13	<b>Sanitation marketing in cities</b> (S Sugden) Technical options for urban sanitation. Use of credit to facilitate improved sanitation. <i>Outcome: Participants aware of methods to increase demand for sanitation</i>
12.30-1.30	B14	<b>Final Wrap-up</b> session (A Etherington/S Parker) Conclusions and actions. Thanks to participants.
1.30-2.30		Lunch
2.30		Departures

### Discussion Group on Thursday, Session B7.



## **Session B1: Background to the WSUP partnership**

- WSUP's model aims to achieve impact, scale and sustainability.
- WSUP sees water, sanitation, hygiene and environment as part of an integrated system which is why WSUP works to strengthen LSPs and communities alike.
- Partnerships across sectors are fundamental to WSUP's approach of developing stronger LSPs for delivering sustainable services for the poor.
- WSUP is a young organisation, learning, innovative & open to change. This workshop will contribute to guiding its development.
- The urban watsan challenges are distinct and require a distinct approach.

Introductory slides shown in the file: [A1\\_Introduction\\_to\\_WSUP.ppt](#)

## **Session B2: Water and sanitation for the urban poor - experiences elsewhere to date**

Key point: in many parts of the world, areas are water stressed. Similarities in what is required in many places.

In the UK, prices are set for a five year period. Customers are overpaying because the regulator got the cost of capital wrong. Disconnection of water is banned in the UK. There is now a programme called the 'WaterSure' programme for vulnerable users. Severn Trent has put money into a trust fund to help poor customers. In some towns, people have been providing accommodation for people in garden sheds. There are approximately 130,000 disconnections per year in France but in most cases, these are reconnected within one or two days.

Unsatisfactory responses to slum development include demolition and building walls round slums.

Metro Manila – Manila Water Company. Project in F.Carlos. 40% of water obtained from six public stand posts where households pay \$5 per month for one hour water supply every two days. The company brought in a new above ground GI pipe network and people now receive water on 24/7 basis. People involved in constructing the system and each connection is metered. Some people connected to meters by hosepipes. Amount paid went down to about P60 per month per connection, perhaps \$0.5 per month. People now feel that they are part of the system. Handpumps retained for washing and bathing. People no longer have to get up at 3am to queue for water. Groups were asked to discuss the benefits and disbenefits of the F. Carlos system. Richard argued that the solution, while not perfect, was affordable and that there was probably no need to upgrade. Its "**Good Enough**". The important point was to think outside the box. Engineers tend to think only in terms of conventional solutions.

Tankers may be an appropriate solution in certain circumstances. Advantages include flexibility, relatively low cost, possibility of seeing illegal connections.

Needs of the very poor are normally met by small scale independent providers. The challenge is to bring these together with conventional service providers to provide a better service to the urban poor.

Market segmentation. The best solutions are those that respond to the needs of market segments. The four 'P's product, price, place and promotion. Marketing is not just about advertising.

Windhoek (Namibia) case study was given as an example of market segmentation. One example was that of the provision of household level toilets on undeveloped plots connected to sewers. Problems with maintenance of sewers were already being experienced. In some parts of the site, sanitation is provided through pit latrines with

excreta collected in bags. – This is quite similar to some ecosan solutions. Examples of \$900 latrines in Johannesburg, provided for mud and wattle houses. Does this make sense?

Perceptions of slums – often as dens of iniquity and crime. Regent Street in London was built partly to hide the Soho slums behind. All factors together can lead to sense of insecurity, isolation and dis-empowerment.

Factors that influence poverty:

- Security of tenure (notified vs. non-notified slums in India)
- Land ownership
- Ownership of buildings on site
- Female-headed households – may be vulnerable to violence.

Richard makes the distinction between the destitute, the very poor, the coping poor, the developing poor and lower middle-income groups.

Another concept is that of the service provider failure area – that which it should be aiming to serve but is failing to do so at present. Getting into these areas may be constrained by present tariffs, which are too low. The example of Andhra Pradesh – People connected when connection was made free. Extended efficiency area – area that cannot be covered by conventional methods but may be covered by unconventional methods. There may be a case for subsidy for the very poor.

Richard showed a slide showing a system that provides conventional stand posts, 200 litre tanks for which tariff pre-paid and a bank of metered connections. The scheme raises the question of what should be regarded as an acceptable level of service.

Richard distributed copies of his most recent publication, from which several of his slides were drawn: “[Regulating Water & Sanitation for the Poor: Economic regulation for public & private partnerships](#)” Eds Franceys & Gerlach, 2008, Earthscan.

### **Session B3: Benchmarking in Water & Sanitation Utilities**

[Simon Gordon-Walker's very comprehensive slides can be found in:](#)

[B3\\_Performance\\_Benchmarking.ppt](#)

[The IBNET benchmarking website is at: http://www.ib-net.org](http://www.ib-net.org)

- Uses for internal performance monitoring, management improvement, by National Governments to set targets, by donors to see impact of investments.
- Looks outside own industry e.g. water looks at energy sector; in customer service, capital investment,
- About 8 years old in water sector
- M&E one step, BM goes to next step
- Utilities often have minimal information – beware the danger of seeking excessive data
- Big cities e.g. Buenos Aires may have no comparator in the same Country – so regional comparisons have been developed
- Beware collecting data only for outsiders, should encourage use of data internally e.g. WUP Africa – 120 utility data – allows each to compare against others by quartile position compared with all others

- How to interpret data? E.g. staff / 1000 connections – if falls too low = high efficiency but may reduce capacity to meet results; should not see these in isolation
- Mekele utility very high expansion rate compared to others due to close relationship with Municipality; higher revenue collection due to more payment offices
- Minimal requirements for BM to be useful – start with what can be done; more important to have small amount of accurate data than large volume of inaccurate
- Internal BM would compare different zones within the same utility / city
- Ethiopia – 5 utilities decided to regularly visit and discuss innovations / results etc
- Regulator networks in South America => better negotiations between regulators and private contractors
- Balanced score-card approaches – select a limited number of key criteria to balance out e.g. results and resources
- See IB-NET template as a starting point for a system within a utility
- Leads to Some proliferation of benchmarks
- Allows utilities to talk to customers re plans, performance, boasting (“we excel at ...”), lobbying e.g. for resources; national perspective can raise the bar for other organizations
- Vietnam NRW case study
- Indonesia benchmarking process driven by municipalities; allowed mayors to negotiate with utilities e.g. on tariff increase demands;
- Some utilities do not believe they can e.g. reduce NRW until see ratios at other utilities

### **Session B5: Dealing with non-revenue water**

Jo Parker's slides are in the file: [B5\\_Non\\_Revenue\\_Water.ppt](#)

NRW is a waste of precious resources and a source of lost revenue for water utilities. NRW is both leakage and unaccounted for water (commercial losses i.e. not getting the \$ in)

Water loss is split as follows:

#### 1) **Commercial losses**

- unauthorised consumption
- customer meter inaccuracies

#### 2) **Physical losses**

- leakage on transmission and distribution mains
- leakage and overflows on reservoirs
- leakage on service connections up to meter points (overflow facilities maybe not maintained!)

### **You don't measure leakage you estimate leakage!**

Meters:

- Meters will only measure above a certain amount of water so a dripping tap might not be measured.
- Meters as they grow old don't measure so accurately



In developing countries somewhere approaching 50% of the water is lost (even up to as much as 70 - 80%) - this has a big impact on poor utility performance. NRW always tends to increase (more people trying to connect, pipes deteriorating, less money to invest etc...) i.e. it is a vicious circle.

Relevance to Urban poor:

- Sufficient water available?
- sufficient money available?

NRW

- means loss of water
- means loss of money

We need to invest in NRW reduction that brings in more money to invest into reducing NRW to raise more water etc. = a virtuous circle!

*If looking for additional resource much better to look at NRW rather than bring on a new source. As demand increases and you don't bring on new supply you end up with intermittent supply. But if you reduce the leakage you don't need to bring in the supply till a lot later and wont need to be as big an investment.*

NRW is not easy to deal with and a lot of people think that any losses will be noticed at the surface which is not always the case and people don't often know the amount being lost.

Dealing with NRW is not a quick fix – it will take time to fix as it needs to be dealt with in a structured way.

Decision makers like the PR of opening a new source whereas resolving leaks is not sexy but it is often the most efficient way to go. Dealing with NRW is difficult to manage it but if you do the benefits are tremendous. There are new tools and methods and more effective technical approaches to manage leaks, pressure management. New instruments to engage the private sector. *Important to make sure that the interventions are sustainable.*

It can be done though, and leads to cost benefits:

e.g. In Sao Paolo the metre replacement increased the consumption by 45 million m<sup>3</sup> and revenues increased by 72million \$. The net benefit to Sao Paolo utility is \$54million / year.

It can be hard to find leaks i.e. to look for a needle in a haystack (a leak can be small relative to the large amount is delivered by the Utility each day but it can become significant). There is an international best practise to deal with this. It is advised to divide the network up into units and measure flow into each section/unit. Then set up District Metered Areas (DMA) if there are smaller units you can find where there is higher than expected consumption can focus search there.

Some Items to think about:

1. *Start with something that is manageable!*
2. *Managing leakage is an ongoing process (not do it once and forget about it).*

3. *Introduce active leakage control - Go out looking for leaks.*
4. *Use acoustic instruments as leaks make a noise (Staff need to have hearing tests!!)*
5. *Lower pressure of water means fewer losses so pressure management is good. Keep pressure low and consistent as this reduces failures.*
6. *Speed of repairs: Water loss is a product of size of leak and how long the leak runs for! If you are going to do the repair anyway it costs nothing to do it quickly. It is important to record failures etc. so your decisions are informed!*
7. *You need to know what your current level of losses are, where they are and how quickly they are changing.*
8. *Where is the \$ coming from to deal with this.*
9. *Set realistic targets (look at likely costs and benefits of doing the actions) – what level is cost effective to achieve.*
10. *Get it up and running through training staff (maybe change in attitude) and monitor as you go forward.*
11. *Assess an Economic Level of Leakage (ELL) to know how far it is worth doing.*

**The Utility Companies advised the following:**

**Bangalore:**

In Bangalore they are concerned about NRW and plan 100% metered so will see NRW as that not metered. Plan to reduce NRW throughout the city through system networking improvement, management improvement, water source improvement/creation. They see that extending in to the slums would help to reduce the illegal connections as they will be metered.

**Nairobi:**

In Nairobi: They followed the same concept as the presenter. First getting baseline data and now doing the quick wins (response times). They have classified the pipe work so the bigger the pipe the quicker the response time for intervention (4inches and above must respond within six hours). All leaks must be dealt with within 48 hours. Currently investing 120 million shillings in district meters. They are doing a pilot study where they can completely shut the supply where they are doing sounding to measure at night. There is serious investment as donors have said the company have to reduce from 42% to 30% by 2009 or else they wont get donor investment for infrastructure.

In Gatwekera the Nairobi Water Company will give water but want the LSP to reduce the NRW (i.e. unaccounted for water) so ensure that the facilities are managed properly. Trying to ensure that the community take responsibility for the lines to monitor leaks (and even formalise repair gangs). And ensure that the vendors do not over charge which stops people getting illegal water.

**Maputo:**

Have targets to reduce NRW but need financing. The major problem is illegal connections and need to reduce that and the project will help. They need flow metres at treatment works , distribution centres etc.. they need meters!!

In pilot area there is a lot of leakage so identified the leakage and map them and ADM went to repair, and designed a new network as only have main pipes and plan to build and provide pipes.

Pilot projects are very powerful and the data collected can cost justify larger initiatives and show that it was beneficial to both customers and utilities.

**Tana:**

They divided the network in to 22 sectors and then looked at 4 representative sectors and saw NRW 35-40% (almost half due to commercial and half physical). The commercial NRW solutions included new meters, repaired the pipes and the results were sustainable. When they repaired the physical the results were not sustainable. Made a plan to map the network and identify the illegal connections and points where there is water delivery.

***In conclusion:***

***NRW is a problem for many of WSUP projects and is a big challenge for the Water Utility/LSP. WSUP is interested to see if we can help partner with the LSP on the NRW issues as we have common interests.***

**Session B6: Urban GIS for mapping and monitoring**

[Tim Brewer's presentation can be found in the file: B6\\_GIS\\_Applications.pdf](#)

Tim Brewer (Cranfield University) explained and demonstrated the use of GIS (Geographical Information Systems) for mapping and monitoring water and sanitation services in urban areas. GIS are typically used by water utilities for assets management, monitoring and planning of installations.

Using MS Windows interface, GIS allows displaying, combining, manipulating and analysing spatially referenced data which are visualised over maps layers with detailed information content.

Populating GIS with proper data remain the most time consuming / expensive phase of a GIS project. It will typically require the combination of text data in tables, including precise GPS coordinate with aerial photography or satellite imagery and/or digitalised maps of the project area.

GIS software (e.g. ArcGIS) allow converting and uploading data layers into Google Earth such as borehole, network systems, information notes, etc...(See for instance WaterAid project information displayed on Google Earth or WaterAid site for information on GIS use).

The level of resolution and the functionalities offered to users depend on the version of Google Earth used (free for the basic up to 400USD/year for the professional) and the GIS package purchased (ArcGIS starting around 1500 USD). A demonstration of a GIS



project showed system functionalities and potential to analyse access to tap stands (location and accessibility for population groups).

GIS can further assist WSUP's LSP partners in a range of management and monitoring tasks regarding water resources, accessibility issues, failures of networks and ageing patterns.

## **Session B7: Presentations from WSUP's LSP Partner Organisations**

The following session consists of 7 presentations made by WSUP partner Organisations: B7a to B7g.

**B7a: Nairobi Water Company** – Presented by Stephen Mbugua.

The presentation slides are in: [B7a\\_Nairobi\\_Water\\_Company.ppt](#)

- NWC serves an urban population of 10M (1999), and is growing rapidly.
- In the slum areas, have begun to remove the 'spaghetti' of illegal connections, and replace with chambered meters / master operators
- Are considering free water for the poorest
- WSUP is supporting with sanitation & hygiene promotion: bio-centres.
- Support required with NRW, leakage detection & community capacity building for W&S management.

**B7b: Umande Trust, Nairobi** – Presented by Josiah Omotto. (no slides)

- Concerned by water meter 'worship' – and very interested to learn that most of UK households don't have meters. Would rather be interested to explore alternative tariff structures.
- Sustainable urban sanitation – need to explore improved structures and pit emptying options.
- We need to discuss 'Capacity releasing' rather than building – capacity is often there but needs harnessing.

**B7c: Jirama, Antananarivo** - Presented by Jose Ramampanjaka.

The presentation slides are in: [B7c\\_JIRAMA.ppt](#)

- Jirama is a government owned water and electricity company.
- Water production is already at maximum capacity until new supplies planned for 2012 – have been refusing new connections since 2006.
- Inequity in tariff introduction, as tap stands have always been free of charge.
- Need for stronger municipalities to support community-management of facilities.
- Many latrines are San Plats – these are 'good enough' in most situations.

**B7d: FIPAG, Maputo** – Presented by Miguel Alves (no slides)

Miguel is from FIPAG, which is the investment and holding company with overall responsibility for water services in Maputo. Actual operation is contracted to private sector company.

No investment during the civil war, also large in-migration to cities, resulting in slums. Deterioration of systems and lack of investment resulted in large back-log of needs to be met.

Government investments are mainly depending on external funds, so speed of rehabilitation and expansion is dependent on access to those funds. As a result, the network does not cover the whole city. Difficulty of access to slums is also a problem.

Tariff is arranged in slabs, with first slab at low price with intention of providing service to everyone. Tariffs are cross-subsidised from higher –income users. This can cause problems for schemes that rely on onward selling by individuals.

There are SSIPs, who drill borehole, provide elevated tank and eventually serve neighbours through local distribution systems.

Ideas are being explored for innovative ways to serve the poor.

**Ways in which WSUP can help** Capacity building, information and education campaigns, support with development of sustainable alternatives, definition of prices for reselling, tertiary network expansion, improvements in the management of standpipes and best practice for the involvement of the private sector.

Alan asked whether the minimum tariff actually helps low-income families because several families share the same tap. Miguel answers that this is a major problem.

Using resellers as opposed to standpipe means that the price becomes too high. The result is that many meters are broken and people are charged on flat rate. This suggests a need for tariff reform.

Stephen Chenge asked how the quality of SSIP-provided water can be guaranteed.

Miguel answered that the SSIPs are currently illegal so there is no regulation of the quality of water that they provide. Consideration of ways in which to legalise SSIPs is ongoing. Now there is control, at least in theory.

Sam asked whether SSIPs are organised into associations. Miguel answered yes and discussions on legalising SSIP activities are being undertaken with these SSIPs.

**B7e: Hafido Abacassamo from Maputo Municipality:** Solid waste management and drainage. (no slides)

Even if you have a good drainage system, lack of waste management will mean that waste enters the drains and blocks them.

One of the problems with solid waste management is getting collection services into slums. Approach in Maputo is to identify points to put 12m<sup>3</sup> containers to be lifted by trucks but there is a need to develop systems for collecting waste in slums and delivering it to the containers. Contracts set up with CBOs to carry out this work.

System needs to be sustainable and that means that the system must be able to collect enough money to cover its costs. Started last year and CBO groups now in 40% of wards. There are 19 contracts and these are commercial arrangements – the CBOs that take the contracts must be able to make a profit on their contracts.

Now, municipality is covering 60% of city and collecting 70% of waste.

CBO rules – All employees must be from the ward in which collection is taking place.

Ways in which WSUP can help – Information and education, support technologies for reduction of solid waste, replication of recycling activities, engaging with and mobilising communities and developing sustainable O&M systems – this will include training of CBOs.

Pilot studies/projects have been carried out on how people can obtain money from waste and WSUP replication help could relate to this.

There were questions about policy, the sustainability of solid waste collection systems and also on the provision of proper disposal systems. Tim Hayward asked about the possibility of linking pit emptying systems to solid waste collection and disposal systems.

Solid waste charges are collected as part of the electricity tariff. There are three charging categories to allow a fair recognition of income disparities.

Some CBOs are working in SWM and other sectors. For instance, some start with pit emptying but then may move on to SW collection.

Carla Costa talked about the ways in which WSUP is trying to overcome constraints. The initial water supply projects will be in areas in which the LSP has already designed/provided networks. WSUP is testing the water quality from SSIP sources. Many are not good and will need treatment.

**B7f: Dhaka City Corporation** – Presented by Khander Millatul Islam – Chief Slum Development Officer.

Population of Dhaka City is about 13 million and the average growth rate is about 6%. Average density of population is 36000 people per square kilometre.

Dhaka City Corporation was formed in 1990 and divided into 10 zones to ‘fulfil objectives of decentralisation’.

DCC is headed by the Mayor. There are 13 departments, of which the Slum Development Department is one.

Function of Slum Development Department: housing and shelter for slum dwellers, including improving water supply and improved sanitary conditions, access, street lighting and solid waste collection. Objective is sanitation for all by 2010.

Lack of funds and lack of coordination between government departments are problems. There is a need to recruit more staff for the SDD.

**B7g: DWASA, Dhaka** – Presented by Md Wahidul Islam Murad – Executive Engineer, DWASA.

The presentation slides are in: [B7f\\_DWASA.ppt](#)

Main source of water is underground water. Mr Wahidul’s slide refers to this as ‘water mining’.

Total GW capacity 1670MLD, and surface water treated capacity 310MLD.

247,402 service connections (residential, industrial and commercial combined).

Together these figures suggest that daily water provision per service connection is just under 3000 litres.

Sewerage coverage is around 35% but number of connections is only about 54,000, which suggests that there are many unconnected households in areas covered.

Mirpur area 31mld and 62000 connections (Only about 500litres per connection per day).

ADB are funding network rehabilitation project for Dhaka. There are ongoing projects to increase supply – one deep tubewell project and others, (funded by World Bank) to provide additional treated surface water.

302 legal connections to slums given with help of NGOs.

Drainage in slums is major problem.

DWASA is moving towards being a commercial entity with an independent board.

Groundwater level is dropping rapidly – but there is no fluoride or arsenic. Iron is high in some zones.

## **Session B8: Improving Support to LSP Partners**

The workshop divided into 3 groups to discuss constraints and challenges on

- a) Commercial issues
- b) Operational issues
- c) Building community Capacity

The chief outcomes of the 3 discussions are shown in the summary table of the preliminary learning points (Page 7 of this report). More detailed discussions are shown below.

### **Group 1's Commercial Discussion Summary:**

Most discussion was on tariffs, the problems of tariff-setting, and how often reviewed. Tana reviewed in 2007, before that not since 1995.

Maputo last changed tariffs in 2007 – they are reviewed every 6 months.

Nairobi – last reviewed in 1996.

Dhaka – last adjusted in 2006. Cost to produce 1m<sup>3</sup> water is 8 Tk, whilst consumers are all charged a flat rate of 5 Tk.

### **Constraints**

- Availability of water/NRW
- Finance
- Government support for tariff-setting
- Accounting systems

### **Solutions**

- Review tariffs regularly
- Develop zonal accounting system/computerised billing system
- Consider cross-subsidy and/or minimum provision
- Address NRW

### **Group 2's Discussion Summary:**

#### **Constraints**

- Diversity and complexity of situations

The level of involvement, willingness of authorities/LSPs, organisation or institutional set-ups differ widely: one size cannot fit all. E.g. Dakha has a strong established institutional framework involving local commissioners (city councillors) in each ward.

- Long term Sustainability / funding

Complex institutional set-up like in Dakha may nevertheless be unsustainable as dependant on donor funding (UNICEF). Communities are fast evolving with population changes/shifts threatening the sustainability of organisations.

- Difficulty to define community from the users to local water business (e.g. vendors)
- Lack of trust between community, political representatives / regulatory authorities and water service providers
- Insufficient capacity of local community to organise themselves and manage basic services
- Lack of legal framework and status for CBOs / no pro-poor policy objective for LSPs. CBOs cannot develop/may not be entitled to structured relations with LSPs
- Sanitation gap - Community involvement might be easier on water supply (tangible benefit for community or local business) than on sanitation, drainage, solid waste management

### **Solutions, Guiding principles**

- Solution to be built on a triple win whereby each party (LSP, Community and local authorities) are beneficiaries:
  1. LSP winning through reduced NRW
  2. Community winning through improved services / lower costs

### 3. Local authorities winning through improved social/political relations

- LSP must have a pro-poor policy objective or even unit to maintain and structure in the long term relationship
- NGOs / WSUP can act as brokers to established and facilitate the relation and involvement of CBOs but should not be the long term / structural link.
- Easier to build engagement and involvement of CBOs and LSPs on a “business case” – e.g. incentivise/create local jobs for solid waste and drainage management, vendors maintaining network etc.

In the long term, objective should be to extend LSP operations and responsibility over the slums.

#### Options

- WSUP / Local NGOs to identify or initiate “entry points” i.e. small group of users to train and organise as embryos of CBOs
- Develop water users CBOs on the basis of other CBOs (waste, schools,...)
- Engage with community water business for maintenance, monitoring, organisation activities
- Build capacity of CBOs for water management (from book keeping to leaks maintenance) - Users association organised and trained to collect revenues from tap stands
- WSP delegation to CBO of the role of local water provider / operation and maintenance of water service in wards –
- Set legal framework for CBOs (registered association, recognised status with authorities/LSP,...)
- WSP, CBOs (and local authorities) to formalise relations within a legal framework, sharing cost formula / tariff setting (and agreeing on revenues sharing) with CBOs
- Get CBO representative member of board of WSP to gain better information on finance, tariff, investment plans.

#### Group 3’s Discussion Summary:

##### Constraints:

Operational	Commercial	Community
Low quality materials	Illegal connections	Relations with vendors
Water Contamination /quality	High prices	Weak links with community
Poor water pressure	NRW	Urban growth
Water availability	Need for financial viability	Slum eviction
Physical access	Some public taps free of charge	Diversity
Solid waste – impact on drainage	Lack of funding	Do CBOs truly represent women & children
Coordination of Govt. departments	Tariffs	Unregistered nature of CBOs
Lack of zone-wise planning	Failure to pay	Unclear ownership of facilities in informal settlements

	Layers of commercial interest	Low capacity in management & financial planning
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**Possible areas of support from WSUP:**

<b>Operational</b>	<b>Commercial</b>	<b>Community</b>
Water quality monitoring	Alternative tariff structures	Awareness of safe water issues
Effluent treatment from biocentres	NRW	Information & education campaigns
Sludge removal & treatment options	Financial modelling/M&E	Subcontracting solid waste mgmt to CBOs
Applications of GIS	Standpipe management	Livelihoods through recycling
Mobile treatment plants	Price for re-sellers	Sanitation promotion
Identify appropriate extension zones	Local distributors	Community managed system generating income
Tertiary network expansion	Integrated formal/informal strategies	Best long term solution is to extend LSP frontiers
Solid waste technologies	Cross-subsidy or minimum provision	Shared O&M responsibilities
Dedicated pro-poor unit to address the low income sector	Regular tariff review	Entry point through those already involved
Smarter use of water/ water re-use strategy	Computerised billing systems	
Marketing approaches	Sharing experiences between countries	
Funding for low cost sanitation		
Improve data collection & use		
Financial modelling for improved services		
Zonal accounting system		

**Session B4: Financial Management Tools** (delayed from the previous day)

WSUP is using consultants to work with local organisations to support utilities.

Tariff increases may be constrained which may impact on the ability to invest in additional services to reach the poor or to replace failing infrastructure.

Two issues:

- Need to test cost recovery mechanism to recoup capital costs.
- Need to have a sustainable service in the long term

Looking at the development of the projects, the implementation depends on obtaining funds in collaboration with in-country government institutions. We need to be credible to donors.

Financial modelling available for local service providers to see impact of providing extra water to serve the poor. Also available for small scale providers. See slide.

Components: see slide

Other models – WRC

Example – JIRAMA model

The model has been used to provide some capacity building to JIRAMA who have used it in a variety of locations to assist with ops planning. Model is being developed and adjusted to suit the needs.

In Naivasha a model has been used by a local consultancy (GEARR) and data gathering has been going on. Many gaps in information have raised questions regarding how to improve debt recovery and o&m.

Through the process the need for better business planning has been highlighted.  
Discussion points – see slide

Miguel - FIPAG has a model that shows the business is sustainable. It is shared with the operators and the donors.

Tana still waiting for the WSUP model but have used an EIB model on previous bids.  
Baghi – model being updated with costs.

Nairobi – most capital projects financed from internal sources. This year new concept – asset financing from banks. Now there is a need to justify the investment. Models are now necessary. The WSUP model would be useful.

DWASA has an accounting system. There is a need for a model that would cover social development. Others have been used for hardware investment.

### **Session B11: Plastic technologies for urban water & sanitation**

Presented by David Walton of Borealis, with the assistance of guests from two partner companies: Bob Cowd from George Fischer Co. (see <http://www.georgfischer.com>) and Tony from Calder Vale Technology

[See slides in the file B11\\_Plastic\\_Pipes.ppt](#)

David presented B&B, explained their background and outlined what they can offer – all sorts of plastics products.

Advantages of plastics – light weight, robust

Water pipes – disadvantages of metal pipes / advantages of plastics

Leakages in metal pipes caused by ground movement especially in drought conditions

Slip lining of existing pipes is cost effective – minimal excavation costs. (See graph)  
Polyethylene widely used in Europe. Slip lining removes illegal connections!!

PE can reduce water losses. E.g. from 36% to 2% in 6 years in a German town.

Welding pipes is stronger than push fit systems. No need for anchor blocks.

Electro fusion welding is one way. Heating wires are inside the fittings!

Butt fusion of large diameter pipes (up to 2m)

Example from Malkapur, India. Had 40% NRW - used 140mm pipe in 100m long coils, needing few joints. NRW became <5%.

Demo by G Fischer, Swiss company

Now PE – is strong – can take high pressures. Black needed for exposure to sunlight.

110mm with compression fittings

Can join PE to other material types and sizes

Blue is 16 bar, green is 12 bar

Compression fittings for small sizes, electro fusion for larger.

### **Session B12: Hygiene promotion in peri-urban communities**

Presented by Val Curtis of the London School of Hygiene & Tropical Medicine

[The presentation slides can be found in B12\\_Hygiene\\_Promotion.ppt](#)

In pairs we were asked to discuss “What don’t we know about hygiene?” The questions we came up with were:

- How to tailor messages to urban context?
- Impact assessment
- Working definition of hygiene?
- Adapting to culture?
- School to home?
- How to raise the profile within WSUP?
- Hygiene vs. physical improvement?
- Minimum changes to make a difference?
- Impact of different levels of hygiene
- Best way to do hygiene promotion
- Positive or negative messages?
- Hygiene without water?
- What is good hygiene?
- Knowledge needed to change behaviour?
- Sustaining hygiene?
- Hygiene in flooding areas?
- Do we practice what we preach in Europe?
- How to finance?
- Best time to do it?
- Why hygiene?
- Who to target?
- Entry point?
- Institutional capacity-which is best placed?
- Can hygiene be effective in resource poor settings?

Hygiene DEFINITION:

Behaviours and practices that promote good personal health / prevent infection especially diarrhoea



Major causes of Under 5 deaths are respiratory infection, diarrhoea  
2 billion episodes, 1.9 million deaths pa  
Germs are highly evolved to find new hosts  
Transmission in theory can be stopped by sanitation and hand washing  
Water treatment breaks transmission between fluid contamination and use  
47% average impact of HWWWS on diarrhoea  
23% average reduction on respiratory infection (0 sanitation in community) Luby & Sandora (2005)  
sanitation 23% impact  
HWWWS could save 1 million lives / yr (a DIY vaccination)  
Ignaz Semmelweis – ward differences in maternal mortality with Hand washing  
28% of commuters in UK had faecal matter on hands  
only 47% of mothers wash after changing nappies

Understand usual behaviour – needs formative research.  
Seek attractive modern approaches to promotion.  
Use industrial skills (as per soap companies)/marketing (selling the shoe).  
Key motivators are cleanliness/disgust, comfort/nurture, status /affiliation (fitting in).  
Fear of disease has not been found to be a motivator.

### **Session B13: Sanitation Marketing in Cities**

Presented by Steve Sugden of the London School of Hygiene & Tropical Medicine.  
[The presentation slides can be found in B13\\_Sanitation\\_Marketing.ppt](#)

Steven started with a survey of the project cities asking representatives what was the percentage of people in their area with access to a latrine. The answers were typically between 70 and 85% which matched with his experience elsewhere.

However many of these would be pit latrines in poor areas not connected to the sewage disposal system – for example in Arusha he found that nearly 80% of people had access to latrines but only 8% were connected to the main sewage system. The remaining 72% were pit latrines which can only be fully functional if there is an effective emptying and transportation system but sadly this is not always the case and they then become neglected and dysfunctional.

Although many municipalities do not take responsibility for pit latrines it is often written in their statutes that they are responsible for the removal of sewage from all dwellings.

In urban slums there is a lot of stigma associated with toilet ownership but it is not always self evident that people see them as a high priority. The main reasons for wanting a toilet are privacy and convenience and it is important to promote sanitation on the basis of peoples perceived needs.

Slums can develop in and around cities in different ways and therefore it is important to develop a viable commercial solution custom made for the circumstances that prevail. For example in very high density “hot spots” it is sometimes impossible for tankers to gain access to empty the latrines.

Steve has developed a simple lifting device to empty pit latrines with minimum inconvenience and smell. This device called a Gulper can be produced easily in developing countries for as little as \$75 and can be used to set up a small business in slum areas. For deep latrines a new prototype has also been developed.

Key questions for WSUP

- i) Segment the area
- ii) Find out what is needed for each site – often simplest is best
- iii) Key issue of keeping toilets cleaned should be addressed early

### **Session B14: Wrap-Up – Sam Parker**

Sam ran through the highlights of the week's discussions, reminding of us many of the lessons learned during the varied sessions throughout the week. He asked each Project Manager to consider and share what lessons they will be intending to focus on and incorporate into their projects on return.

**Mozambique:** Financial modelling, expansion of services, charging/tariff setting. Project branding by local areas, NRW improvements, experiment with the Gulper.

**Naivasha:** Project Management issues – sessions were useful for considering managing the way forward and moving into the next phase of implementation. The discussion on hygiene promotion highlighted improvements that could be made to the Naivasha plans.

**Nairobi:** Stephen of NWC: Planning cycle, NRW, pipe replacement with PVC, pit emptying. Peter: Urban use of GIS for mapping & monitoring, partnerships with LSPs and benchmarking, pipe replacement & water kiosks.

**Zambia:** Sanitation – space for latrines and high water table issues, hygiene promotion improvements, NRW.

**Madagascar:** NRW, hygiene promotion, sanitation improvements (Gulper).

**Mali:** NRW, Vendors' organisations & regulation, hygiene promotion and formative research.

**Ghana:** Funding issues, PVC pipe technology, hygiene education – will try to build on existing Ghana work done by LSHTM.

**Dhaka:** Financial modelling, sanitation marketing/urban issues, NRW in particular is a big issue in Dhaka, and its control could be very profitable.