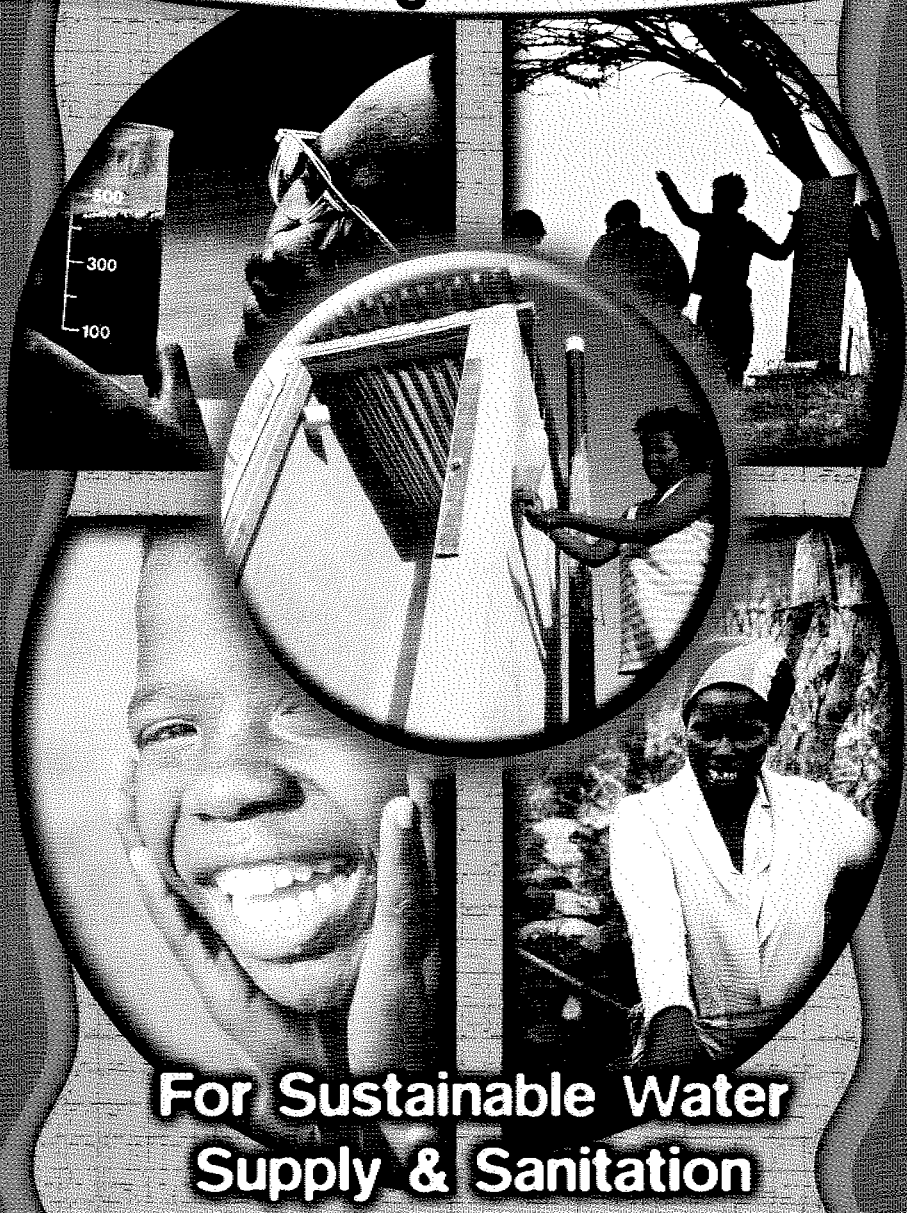


824 ZA02

# Learning & Sharing



## For Sustainable Water Supply & Sanitation

Synopsis of Conference on Appropriate Technologies for Sustainable Water  
Supply & Sanitation Services Gauteng-South Africa,

824-ZA02 - 18662

# LEARNING & SHARING

for Sustainable  
Water Supply & Sanitation

Synopsis of Conference on  
Appropriate Technologies  
for Sustainable Water Supply  
& Sanitation Services  
Gauteng ~ South Africa,  
21–23 November 2001

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Department of Water Affairs and Forestry  
Private Bag X313 Pretoria 0001

# Acknowledgements

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## Organisation of the Conference:

### Organising Committee

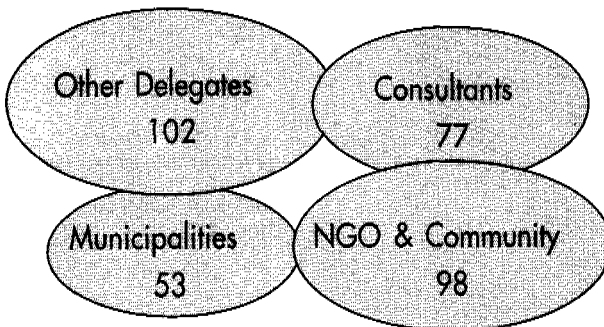
Mr K Pelpola (Chairperson)  
Mr D Gertzen  
Mr J Bhagwan  
Mr T Dhlamini  
Mr D Naidoo  
Mr K Haumann  
Mr L Naudé  
Mr M Van Veelen  
Mr N Walker  
Ms T Baker  
Ms A van Zyl  
Ms C De Jager

### Institution

DWAF: Project Development Support  
DWAF: Project Development Support  
Water Research Commission  
Mvula Trust  
SAACE  
SAACE  
IMESA  
SAICE  
WISA  
Conference secretariat  
Conference secretariat  
Conference organiser

## Participants:

330 delegates from various sectors attended the conference



## Steering Committee:

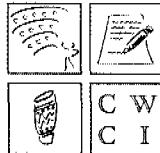
42 representatives from the water and sanitation sector served on the Steering Committee for the conference (see full list in Annex 4)

DWAF	7
DPLG	1
Water Institutes	10
NGOs	8
Water Boards	5
International Partners	8
Associations	3

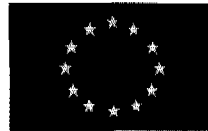
## Funding Organisations:

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CONFERENCE  
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& CULTURAL  
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# Contents

Section 1 ~ Introduction.....	5
Purpose of the Document .....	5
Conference Process .....	6
Section 2 ~ Context of the Conference .....	7
Launch of SA Chapters .....	7
Context of Discussion ~ Setting the Scene .....	8
Section 3 ~ Themes .....	9
Policy, Strategy and Planning .....	10
Institutional and Social Development Capacity .....	17
Technology and Sustainability .....	20
Way Forward .....	24
Annex 1 ~ Acronyms .....	25
Annex 2 ~ Resource persons and Contacts.....	26
Annex 3 ~ Conference Papers, Presentations & Sources ....	27
Annex 4 ~ Conference Steering Committee .....	29

# Section 1 ~

## Introduction

.....

As the year 2001 drew to an end, 330 delegates comprising community representatives, sector practitioners, municipal and government officials and policy makers gathered from across the country to spend two days coming to grips with the challenge of harnessing appropriate technology for sustainable service delivery. Appropriate technology is crucial to the approach that underpins Government's commitment to accelerated water service delivery.

At this juncture we have seven years of experience under the Community Water Supply and Sanitation Programme from which to learn. The Conference signalled a renewed effort to create and sustain a learning and sharing culture in the water and sanitation sector. The focus of conference discussion was reflecting on experience and challenges being faced.

### Purpose of the Document

The Department of Water Affairs and Forestry organised the conference to:

- Convey the Department's policies and strategies to all concerned people;
- Discuss guidelines, life cycle management, monitoring and benchmarking, feasibility and other key aspects for improving sustainability of delivery;
- Create a learning and sharing culture in the water and sanitation sector.

This document has been produced to make the issues and findings that repeatedly emerged from debate and discussion at the conference, available to players throughout the sector. The strategy in this document of synthesising cross-cutting aspects into key themes, rather than recalling every issue is deliberate. The intention being to encourage ongoing learning and sharing from practice. In addition, gaps that were not dealt with and issues in the sector that were not raised have been included, with some suggestions on how to take them forward.

**Disclaimer:** The opinions expressed in the sections that follow reflect the key findings of the conference, in particular the outputs of Parallel Discussion Sessions, and are not necessarily those of the authors, the organisers, the presenters of papers prepared for the conference or the Department of Water Affairs, and forestry.

# Conference Process

The Conference itself was organised around five central themes, namely:

- **Sustainable Sanitation** (Environmental Sanitation and Technologies)
- **Institutional, Social and Capacity building and Training**
- **Planning** (Management roles, water services as a sustainable business and integrated rural development plans)
- **Technology Choice** (design standards, benchmarking and technologies)
- **Operation and Maintenance** (Partnerships, operation and maintenance and regulations).

In addition to these themes, one session was allocated to the Department of Water Affairs and Forestry to present national policy and the Department's strategy for water and sanitation service delivery.

*"We have a vision, and policies and programmes to facilitate our work and we have some of the funds we need. But we need more than this. We need to work and deliver in a way that is appropriate and sustainable, in a way that builds capacity in the very communities we set out to serve."*

**- Mr Junior Potlone  
(Nov. 2001)**

Position papers for each of the themes were prepared by individuals who were identified by the Conference Steering Committee, and relevant DWAF officials were asked to prepare and present papers on different aspects of service delivery.

For the purpose of participation, debate and deliberation by the delegates about 50% of the programme was allocated to discussion. The Conference concluded with a Parallel Discussion Session where each of the themes was incorporated by a group of delegates into a focus discussion from recommendations which emerged.

## Update since the Conference

Since the Conference in November last year a number of critical issues raised in presentations and discussions have been taken forward by various initiatives of the Department. In terms of sanitation a process has been undertaken to review the White Paper on Basic Household Sanitation 2001 and to roll it out to Provincial and Local Government.

A process is also underway to finalise a White Paper on Water Services. On the Free Basic Water side a strong programme of support to local government has been established. The outputs of the Appropriate Technology conference added value to all of these processes. It is hoped that this synthesis of issues from the conference will also add value to the broader water services sector in South Africa.

# Section 2 ~

## Context of the Conference

### Launch of SA Chapters of the Water Supply and Sanitation Collaborative Council (WSSCC) ~ Vision 21, and the Handpump Technology Network of South Africa (HTNSA)

#### WSSCC and Vision 21~ the South African Chapter

The South African Chapter of the WSSCC was launched at the conference. It is anticipated that this will strengthen international co-operation with the South African water sector. The mission of WSSCC is to enhance collaboration among developing countries and external support agencies through a concerted action programme. Vision 21 advocates putting people, with their initiative and capacity for self-reliance, at the centre of planning and action. While the policies of the South African government are closely aligned to the mission of the WSSCC, reflecting our commitment to sustainable service delivery for all, we still need to learn from international best practice.

By actively participating in the WSSCC the South African water sector will have access to international best practice and innovative strategies for accelerating the delivery of water supply and sanitation to all people, with special attention to the unserved poor. This partnership is based on the will to achieve shared goals and will demonstrate a special model to the rest of the world.

#### Handpump Technology Network of South Africa (HTNSA)

Mr Boniface Aleobua of the Department of Water Affairs and Forestry launched the HTNSA, which aims to promote the appropriate and effective use of human powered water supply systems in South Africa. The current goals of the global HTN are to focus on Africa to assist the region by building local capacity and reduce the high drilling costs. In order to assist in sharing experience and knowledge, advocacy and promoting best practice, an internet discussion forum has been opened with easy access to membership (refer to Resources/Contacts page).



## Context of Discussion ~ Setting the Scene

A sketch of the status of Community Water Supply and Sanitation by Mr Junior Potloane, Deputy Director General of the Department of Water Affairs and Forestry, provides a starting point for discussion at the conference.

*"Every time that another person receives water or sanitation services it represents a further step towards poverty alleviation in the country."*

**~ Mr Junior Potloane  
(Nov. 2001)**

*"The target is 100% access: 7 to 8 million people in this country are still without adequate access to water and 18 million people still need sanitation."*

**~ Mr Junior Potloane  
(Nov. 2001)**

*"If all of us, working collectively, cannot change the dismal situation of water and sanitation in the world today, the decade-long efforts towards sustainable development will be in jeopardy, and the investments, both human and financial, will be under scrutiny by the international community."*

**~ Gourisankar Ghosh  
(Nov. 2001)**

In his speech Mr. Potloane indicated that since 1994 the Government has wiped out 50% of the backlog in the delivery of water through its Community Water Supply and Sanitation Programme. The White Paper on Household Sanitation represents a commitment to clearing the sanitation backlog within the next 10 years, with a budget allocation of R360 million per year over this period.

Mr. Potloane's presentation was followed by an international perspective on South Africa's water and sanitation work provided by Mr. Gourisankar Ghosh, the Executive Director of the WSSCC. Mr. Ghosh conveyed a strong message to South Africa to "Put Sanitation First"!

### Put sanitation first!

Mr. Ghosh pointed out that from an international perspective, South Africa is no exception to the need for all local governments to prioritise sanitation. He noted that there is a widespread lack of understanding about health and hygiene issues underlying the 'silent emergencies' of deaths by water-borne diseases such as diarrhoea, the largest killer of children under 5 in the developing world. Mr. Ghosh also indicated that the recent cholera outbreak in South Africa has demonstrated the need for hygiene education rather than hardware, and that it is still a common myth that water-borne sewerage is the most appropriate means of sanitation.

## Section 3 ~

# Themes from the Conference

.....

Key themes emerging from the conference reflect the need for continued sharing of experience and further learning in the interest of the sector's commitment to accelerated water and sanitation service delivery. The issues arising from topical discussions that focused on carving a way forward for further action and discussion are clustered in this section under three main areas.

### ➤ **Policy, Strategy and Planning:**

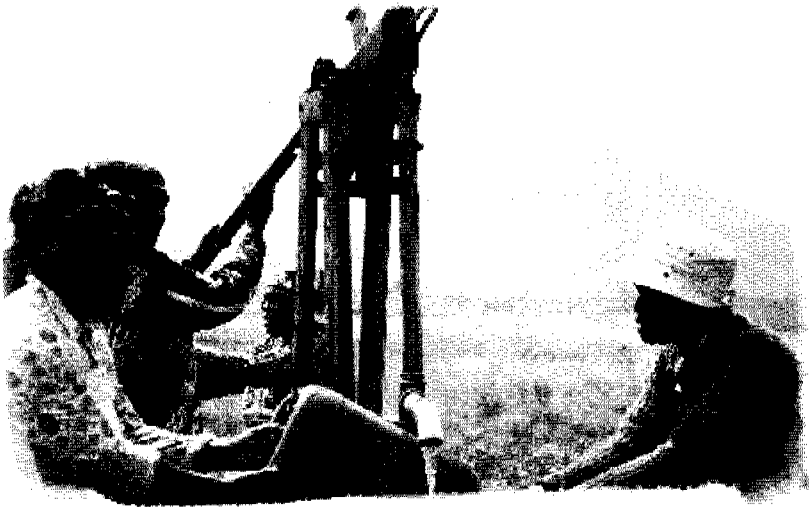
- **Enhancing Sanitation.** Government investment in sanitation has been increased to R360 million per year to meet the target of addressing backlogs by 2010.
- **Free Basic Water** is reaching an estimated 51% of the country's population. Tools, guidelines and a financial model have been developed by DWAF and are available to support municipalities to implement this policy as a matter of urgency.
- **Support Programmes** developed by DWAF aim to ensure well co-ordinated and integrated service delivery on the ground, working across sectors.

### ➤ **Institutional, Social, Capacity Building and Training:**

- **Sustainability and capacity building** at local government level is essential as sustainability can only be achieved by effective local government involvement.
- **Working in partnership** with a multiple range of levels and sectors is critical in developing capacity to deliver. Partnership initiatives are providing many lessons.

### ➤ **Technology and Sustainability:**

- **Cost Recovery** for the operation and maintenance of services has a low priority although it is critical for sustaining service delivery.
- **RDP Standards** have not served their purpose in many cases. While RDP standards are to make sure that people have access to a source of safe water for basic human needs, there is a need to address their limitations.
- **Scale and Technology Choice** are critical factors in ensuring the effective delivery of services, including operation and maintenance that is affordable.



## Policy, Strategy and Planning

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### Overview of Theme

**The Constitution of South Africa** charges government with responsibility for ensuring the progressive attainment of access to basic services by the entire population. Local government has the responsibility and function for provision, while national government is to support and set norms and standards. National and provincial government has the responsibility to intervene if local government is unable to fulfil its obligations. Appropriate strategies and planning processes provide the road maps, mechanisms and means to the destination – the implementation of government policies.

**The Water Supply and Sanitation White Paper ~ 1994** was the first coherent policy on water services provision with a vision of new arrangements including roles of national, provincial and local governments, water boards, private sector, NGOs.

**Free Basic Water (FBW)** implementation has been rolled out in Metros and well run municipalities, but with limited success in rural areas to date.

**The White Paper on Basic Household Sanitation ~ 2001** envisages the clearing of the sanitation backlog within the next 10 years. Priorities include the provision of guidelines and the co-ordination of the activities of a range of key role-players.

Both **Strategy and Planning** are key mechanisms and areas of learning that are geared towards supporting and enabling the implementation of policies. Important endeavours that are currently striving to meet the needs of stakeholders include:

**Framework for National Sanitation Strategy** that focuses on accelerating access to basic sanitation where the need is greatest. This must be linked to the **Integrated Development Planning (IDP)** process as a mechanism for addressing backlogs.

**Water Service Development Planning (WSDP)** provides a tool to enable local government to focus on identifying and addressing the basic services backlogs locally.

**The Community Water Supply and Sanitation (CWSS) Programme** of DWAF supports accelerated and sustainable delivery. As delivery depends on local government capacity, this includes support for municipalities with Business Planning, Monitoring and Evaluation systems, assisting with implementing Free Basic Water (FBW) and the development of appropriate delivery mechanisms.

## Free Basic Water and Sanitation

Free Basic Water (FBW) is a policy of the South African government that is intended to ensure that no one in South Africa is denied access to water because they are unable to afford to pay for the service. Underlying this policy is the recognition that the supply of water at a "basic" level assists in alleviating poverty, improving community health and frees women from time wasted on carrying water.

### CHALLENGES

**Free Basic Water** requires very good management. Municipalities must be able to meter, bill, collect revenue and manage their systems efficiently and effectively. The introduction of improved management systems is perhaps the greatest challenge for the implementation of Free Basic Water.

- **Non-payment** for services, more than the basic level, continues in some parts of the country. FBW will only work if those who have more than a basic service pay for it.
- In most municipalities the implementation of FBW also depends on an adequate portion of equitable share being directed towards the provision of the basic service.

## PROPOSED WAYS FORWARD

- A national sectoral task team has been developed to support the implementation of FBW in municipalities.
- There is a need for a developmental approach whereby municipalities can learn by doing and can learn from each other.
- Supporting the implementation of mixed levels of service would assist municipalities to be able to cross-subsidise basic services.

## Sanitation Policy

A White Paper on Basic Household Sanitation has been developed and is in the process of being rolled-out. The policy provides clarity on the definition of sanitation, roles and responsibilities, funding and principles to be followed.

The National Sanitation Task Team (NSTT) which is responsible for coordination across departments and sector stakeholders, has a central function to carry out and should report quarterly on this matter.

## CHALLENGES

### **Sanitation Advocacy:**

- There is still a lack of political will and buy-in for sanitation priorities amongst some key players. Better information dissemination and sanitation advocacy strategies are needed.

### **Policy Gaps:**

- Most of the focus is on rural areas, whereas the backlog also includes urban and peri-urban areas.
- Policy clarity is required about subsidies in certain circumstances, such as dense settlements, and on private land.

### **Sanitation Coordination:**

- Many WSDPs and IDPs do not adequately address sanitation backlogs and targets.
- There is still a need for greater co-ordination between key players at a national and provincial level if accelerated targets are going to be met.

## PROPOSED WAYS FORWARD

### Sanitation Advocacy:

- Roll-out of the White Paper policy and strategy framework must continue to **target politicians and officials** on all levels
- Departments should **sign agreements** to contribute to the effective coordination of sanitation.

### Policy Gaps:

- Mechanisms are needed to regulate and deal with the deviations from policy.
- There is a need to re-look at the way in which funding allocations are done to ensure that all targets for basic sanitation are reached.

### Sanitation Coordination:

- The National Sanitation Task Team (NSTT) should report to sector stakeholders on a regular basis.
- DWAF and DPLG need to ensure that sanitation is adequately addressed in WSDPs and IDPs.

## Planning

Effective planning is key to sustainable water services which meet social and economic development priorities. Macro planning needs to support accelerated delivery. At the same time it needs to allow space for the development and application of appropriate, suitable, cost-effective technologies. The measure of good planning is good results.

## CHALLENGES

- Planning for accelerated delivery needs to focus on enabling the social purpose of the **alleviation of poverty**
- Planning does not sufficiently take account of **local government planning guideline documents**.
- **Water Service Development Plans (WSDP)** do not adequately take basic water and sanitation backlogs into account, nor do they effectively inform IDPs.
- WSDPs and IDPs should be taking into account **what is already on the ground** in terms of infrastructure, considering whole life cost – O & M as well as capital costs.

## PROPOSED WAYS FORWARD

- **The effectiveness of Planning** must be measured by the extent to which local economic development is the objective that is served.
- **Integrated Development Planning** must be evaluated on merit in relation to the extent that the implementation of the plans takes place within an integrated framework.
- **IDP Forums** must address sanitation backlog gaps ~ in assessment, formulation and evaluation processes.
- **Water Service Development Plans** must incorporate the basic health and hygiene imperatives of sanitation and water supply to the area's poorest people.

*WATER AND SANITATION SUPPLY ARE PART OF AN INTEGRATED APPROACH TO DEVELOPMENT AND NOT AN END IN ITSELF*



## Institutional and Social ~ Capacity Building, Training

.....

### Overview of Theme

Technically inappropriate schemes often result from local authorities and communities not being included in decisions about technology choice. In most cases civil engineering consultants still actually make these decisions, leaving communities and local government with the resulting infrastructure and operation and maintenance responsibilities.

Institutional and Social Development (ISD) is central to appropriate technology for water supply and sanitation services delivery. All the requirements of a particular situation need to be matched, including the users' needs, opportunities for local labour, building the capacity for organisation, responsibilities for operation and maintenance, and the training that is needed bring it all together.

*"Community-driven initiatives are more likely to be sustainable in the long term than externally driven interventions that ignore local knowledge, capacity and culture."*  
~ Speech of Minister Kasrils at launch of SA Chapter of WSSCC



## Institutional arrangements

In order to promote appropriate technology institutions need to be sustainable, particularly Water Service Authorities (WSAs) and Water Service Providers (WSPs). An enabling environment for provision has been created by the regulations that provide for appropriate arrangements. The relevant current Legislative Framework includes:

### Legislative framework for delivery of water and sanitation services to all:

- **Water Services Act (No. 108 of 1997)** Local government is responsible for water services provision and developing water supply schemes with water boards, private sector, NGOs, and community based institutions as functionaries.
- **Municipal Structures Act (No. 117 of 1998) (Amendment Act of 2000)** has removed reference to bulk water services – now refers to potable water systems, domestic sewerage and wastewater.
- **Municipal Systems Act (No. 32 of 2000)** defines alternative mechanisms for municipal services provision with a range of new institutional arrangements, such as the Multi Jurisdictional Municipal Services Districts (MJMSD). (See Annex 2 for website addresses)

### CHALLENGES

- **A Contradiction?** ~ the Water Services Act requires consideration of public sector providers, before considering the private sector. The Municipal Systems Act on the other hand calls for competitive bidding.
- Do **relationships between different spheres of government need to be legislated?**
- **Co-operative governance** lacks clarity in practice and is subject to different interpretations of powers and functions .
- The **lack of capacity** of many Water Services Providers and Water Services Authorities remains unresolved.
- **WSA-WSP relationships** must be established with the end in mind ~ how are the developed models to be applied?
- **Category B/Category C** municipalities are hampered by a lack of clarity regarding funding arrangements and powers and functions.

### PROPOSED WAYS FORWARD

- **Alternative Models** of capacity-building partnerships need to be explored in practice. These include: Regional water utilities (water boards); Regional municipal services provider model (MJMSD); Partnerships that are Public-Public, Public- Private, and Public-NGO; Community based models and Non-governmental water institutions. Learning will be furthered through practical experience.

- **Issues of roles and responsibilities** need to be addressed in the new White Paper on Water Services
- **Communicate and Facilitate** ~ explain legislation and strategy to water services institutions, local government and their agents.
- Local government institutions (DPLG/SALGA) and DWAF to conduct **workshops at district level** to talk about and clarify roles and funding.
- **Secondment of staff** to local government is a possibility to be explored.
- Focus on relationship between B and C municipalities.

## Institutional and Social Development Capacity

The last decade has seen a shift from engineering-driven solutions to more appropriate user-driven solutions, moving away from pure infrastructure delivery. However, there is still a gap in understanding that the appropriateness of a technology is linked with institutional capacity and that social development is required to ensure long-term sustainability.

### CHALLENGES

- **A People-centred, Demand Responsive Approach to Delivery** is lacking amongst many technical specialists and which results in engineering.
- **Communities** and municipalities are not being provided with enough opportunities and information to make suitable, appropriate choices.
- **Proper participatory baseline studies** are not being conducted and the information collected is not being correctly used.
- Do existing support programmes **deal with appropriate technology** ?
- A **gender-aware approach is lacking** in assessing needs, roles, responsibilities and how benefits will be spread in a community.

### PROPOSED WAYS FORWARD

- **The Demand Responsive Approach** to delivery must be made evident with a far greater emphasis on people-centred and social capacity building.
- **Technical specialists** must demonstrate that they have created options for people that have allowed them to make a properly informed choice.
- Structured research on best practice cases that have worked well should be linked **to the results of previous evaluations** to develop workable approaches.
- **The role of NGOs** in developing the links between ISD and appropriate technology should be investigated.

- **Learning** to improve practice must build on existing support programmes, and engage with practitioners and those who are operating schemes.
- **Gender aware approaches** strengthen the possibility that technology will be appropriate. Women must therefore be encouraged and supported to participate fully in all aspects of projects.

## Institutional & Social Development (ISD) Professionals

Professional social practitioners with a sound track record should be involved at all stages of every project to ensure that a people-focused, demand-responsive approach is adopted at the very beginning of planning for projects.

### CHALLENGES

- A **lack of professionalism** amongst some ISD practitioners is a serious concern.
- Whereas **unqualified personnel** would not be used to design engineering solutions, this is not the case with social consultants employed as ISD practitioners.
- Often it is an **inadequate ISD component** of the system that leads to failure, or unsustainable projects.

### PROPOSED WAYS FORWARD

- **Develop norms and standards** and a code of conduct for social consultants.
- **Formalise and Coordinate quality control** of social practitioners in the sector.
- Establish clear **Key Performance Indicators (KPIs)** for Institutional and Social Development that can be measured and monitored, and used to manage social practitioners.
- **Budgets for ISD** components of projects must be significantly increased so that professional ISD practitioners lead multi-disciplinary teams responsible for planning and implementing projects.

## Appropriate Training for Capacity Building

Employment opportunities created by accelerated delivery must be linked to training and capacity building activities. In this way shorter term investments in project implementation can produce substantial longer-term benefits to learners. Investment in training programmes and project-related training builds the water supply and sanitation sector skills-base and capacity.

## CHALLENGES

- **Training needs** of different levels of learners are not taken into account adequately. WSAs and community level roles need Technical and Social training to be tailored to address the needs of learners, in line with their allocated responsibilities and the skills needed to carry out their work.
- **Education, Development and Training-related** investments are uncoordinated and lacking quality control, assessment and accreditation and thus without value beyond the life of implementing/project agent employment.
- **Technical training** needs to fit with the management systems that are part of institutional development on the project.
- **Institutional training** must be in line with national legislation and institutional arrangements. Substantial changes in local government responsibility, requires training for those now responsible for planning, operation and maintenance.
- There is a need for capacity building and training of all stakeholders to increase their understanding and practice of a **gender aware approach**. This approach is not mainstreamed in policy, planning and design.

## PROPOSED WAYS FORWARD

- **A coordination strategy with an allocated budget** is required. A needs analysis will inform and develop a long term strategy to train appropriately.
- **Coordinated Education, Development and Training** based on formalizing standards and qualification frameworks for the water and sanitation sector is needed.
- **Institutional support, training and mentorship programmes** must be strengthened by making them an integral and funded part of projects.
- **Use existing fora**, as learning and sharing sites for building experience and best practice.
- **Target local government capacity** as a focus for training and development.
- Capacity building and training needs to **involve all role-players** (multi-sectoral) and especially the Department of Health and their staff.
- **Women must be encouraged and supported** to participate fully in all aspects of projects. A gender-aware approach to assessing needs, roles, responsibilities and the distribution of benefits in any community strengthens the possibility that technology will be appropriate and sustainable.

*Certain projects are successful because of committed project steering committees and communities who have been involved in both the choice and application of a technology.*

*Where this is not the case we continue to see the implementation of inappropriate projects that cannot be locally managed or maintained.*



## Technology and Sustainability

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### Overview of Theme

Large-scale systems requiring high operation costs, have too often proven unaffordable to user communities that are the targets of projects. The technology choices are critical to the success and sustainability of water and sanitation projects. A technology is appropriate: if it is understood by the people who are responsible for maintaining and operating the system; if it is correctly sized and matches operator capacity; and if it can be maintained at an affordable cost.

*EVERY SITUATION HAS TO BE EVALUATED ON ITS OWN MERIT TO  
DETERMINE WHAT IS APPROPRIATE*

### Appropriate Design Standards

Ideally planners are free to argue for higher or lower levels of service based on the available resources, specified local conditions of a particular community, a sound feasibility study and the demonstration of informed community decision-making. Designs to the RDP Standard should be designed so that they can be upgraded to respond to possible improvements in local conditions.

#### **CHALLENGES**

- **Design standards issues** usually arise only after the technology choice for piped water schemes has been made.

- **RDP standards** may have imposed unnecessarily expensive schemes on communities that cannot afford them, or do not have the technical capacity to operate and manage them.
- **Sanitation standards** have been prescribed on two levels: technical (VIP) and financial (R1200 subsidy) ~ is it appropriate for the standard to be based on the toilet structure?

### PROPOSED WAYS FORWARD

- **Design** is based on the "scheme owner's perceived ability to deal with and accept risk, uncertainty and maintenance" requirements, before choices are made.
- **The focus of RDP standards** is to serve as a guideline rather than a standard.
- **As sanitation is a social issue** and encompasses household use, health and hygiene and not only the toilet structure itself, the standard should reflect the integrated nature of an appropriate solution by taking account of local resources, capacity and conditions.

## Appropriate Choice

Often communities will reject a certain kind of technology, as it is perceived to be inferior. It is imperative to inform and include communities in decision-making and choices regarding technology. Choice must be based on community understanding, and be matched to the prevailing economic conditions as well as the behavioural, cultural and social needs of the end users.

### CHALLENGES

- Local conditions such as water resources, ground conditions and the capital cost of supply and construction of the system, often dominate the choice of technology to the **exclusion of informing community decision-making**.
- The cost and capacity for sustainable **operation and maintenance** are key considerations of choice for an appropriate technology.
- **Physical conditions** are most often cited as a motivation for unaffordable and inappropriate higher levels of service.

### PROPOSED WAYS FORWARD

- **The Choice** between systems (e.g. wet or dry sanitation) depends on the preparedness of the **householder to use, manage and maintain** the user-end of the system; to be physically involved in maintenance and servicing or **to pay** for outsourced maintenance and servicing; and the

**institutional capacity** to support the chosen system (e.g. sewage treatment) AS WELL AS technical issues such as:

- Water availability and the cost thereof; Risk of system failure, **subsequent costs** and environmental and public health impacts; Ground conditions and groundwater pollution.
- **Physical constraints are often overcome** by adapted and feasible designs that have been developed to match the local context and capacity (e.g. above-ground Double-Pits, dehydrating and composting toilets).

## Operation and Maintenance

To be appropriate and sustainable, a technology depends on whether there is adequate human resource and institutional capacity to use, manage, operate and maintain the system. The technology should be designed to make operation and maintenance affordable and sustainable. The longer term sustainability of schemes depends in part unavailibly and effective supply of goods and services maintenance (e.g. spare parts and depends of goods and services for operation and repair services).

### CHALLENGES

- **Poor operation and maintenance** of water and sanitation services is mostly due to a lack of capacity at local government level, affordability at a community level and insufficient cost recovery.
- Often **decisions about levels of service** do not take everyday use and maintenance, and ongoing operation and servicing of water or sanitation systems into account.

### PROPOSED WAYS FORWARD

- Need for dedicated people and funding **to address the matter of appropriate operation.**
- **Appropriate Operation interventions** may make scheme transfer more attractive and lead to sustainability.
- **Develop a capacity and a training course** for decision-makers and practitioners in the sector on how to determine the appropriateness of technology. A learning-by-doing approach should be encouraged.
- Local government and community **planning, and decision-making processes must include Operation and Maintenance** as a core part of design and choice.

## Cost recovery problems

Cost recovery is still a pressing issue for sustaining service delivery. This requires improved management on a local level. Some of the ways in which costs can be more readily recovered are suggested below.

### CHALLENGES

- **Lack of proper metering and billing** systems means that accounts for payment of services cannot be issued timeously.
- **Bylaws and policies** to support credit control, consequences to illegal connection and non-paying high consumers, are lacking.
- **Lack of a customer service orientation and a comprehensive customer service in delivery systems is a critical success factor that needs to be addressed.**

### PROPOSED WAYS FORWARD

- **Monthly accounts** should still show the cost of the 6kl deducted in "free basic water" or "free basic service" implementation.
- **Research and experience sharing** in the establishment of formal measurement and accounting systems, especially in areas where there are no house connections. The development of innovative methods is required to improve cost recovery.
- **WSA's and WSP's must be actively supported** by means of new policies, which should protect a WSP to carry out its job effectively, free from undue political interference.





## Way Forward ~

### Issues that are still to be dealt with

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The way forward lies in the support and encouragement of further practical endeavours by the practitioners to build on their experience. Sharing experience and reflecting on mistakes as well as successes across the sector, will continue to build the capacity required to accelerate delivery of sustainable community water and sanitation services.

#### **Partnerships can play a very active role in addressing service backlogs:**

- Capacitated institutions should be encouraged to partner with less capacitated institutions.
- Promote policies and institutional reforms that will remove barriers for partnerships and other management arrangements. Encourage partnerships for sustainable operation and maintenance by developing guidelines within policy frameworks.

#### **Co-ordination of stakeholders across the sector:**

- Opportunity to share experience requires coordination on national as well as a provincially specific level. National coordination needs to be responsive to provincial level needs and opportunities.

- Local government capacity building results from interaction with relevant support provision institutions and a wider range of practitioners with practical experience, preferably within provincial and district learning sites or fora.

### **Promote community decision-making and management:**

- The sector needs to continue to learn from good practice by supporting the wider sharing of local experiences of success.
- We need to learn from international experience and put knowledge into action.
- Support a range of delivery and management options based on various service levels, population size and density and diverse contexts.

### **The purpose of RDP Standards must be clearly communicated:**

- RDP standards are to make sure that people have access to a source of safe water for basic human needs. Water for other purposes can be provided through other means, such as rainwater harvesting. Essential basic services can be upgraded as conditions improve.
- Experience shows that on average people consume only 5 litres of potable water per day. Conjunctive use with other sources, such as rainwater, should be considered to supply the other 20 kilolitres.

### **Advocacy is the key to Appropriate Technology:**

- Should there be a quota for the use of appropriate technology, for example 10–20% of business plans received from each region?
- Appropriate technologies in operational areas need to be supported. These include: reducing water wastage, leak detection systems, pressure reducing valves and appropriate pressure management, and employing local capacity for meter reading, maintenance and repairs, and house-to house checks.
- Need to distribute information and disseminate lessons to practitioners, and market the diversity of different technologies for different situations.

# Annex 1

## Acronyms

<b>BP</b>	Business Plan
<b>CMA</b>	Catchment Management Agencies
<b>CMIP</b>	Consolidated Municipal Infrastructure Programme
<b>DD</b>	Deputy Director
<b>DPLG</b>	Department of Provincial and Local Government
<b>DWAF</b>	Department of Water Affairs and Forestry
<b>FWB</b>	Free Basic Water
<b>IDP</b>	Integrated Development Plan
<b>ISD</b>	Institutional and Social Development
<b>IMESA</b>	Institute of Mechanical Engineers of South Africa
<b>KPI</b>	Key Performance Indicator
<b>MJMSD</b>	Multi Jurisdictional Municipal Services Districts
<b>NGO</b>	Non-Government Organisation
<b>NSTT</b>	National Sanitation Task Team
<b>PSTT</b>	Provincial Sanitation Task Team
<b>SAACE</b>	South African Association of Consulting Engineers
<b>SAICE</b>	South African Institution of Civil Engineering
<b>SALGA</b>	South African Local Government Association
<b>TLC</b>	Transitional Local Council
<b>WISA</b>	Water Institute of South Africa
<b>WSA</b>	Water Services Agency
<b>WSDP</b>	Water Services Development Plan
<b>WSSCC</b>	Water Supply and Sanitation Collaborative Council
<b>WSP</b>	Water Services Provider

# Annex 2

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## Resources & Contacts

### Department of Water Affairs and Forestry

Physical Address: Sedibeng Building  
185 Schoeman Street  
Pretoria

Contacts Boniface Aleobua  
Tel: 012 336 8262  
Kalinga Pelpola  
Tel: 012 336 8798

### Websites

Department of Water Affairs and Forestry: <http://www.dwaf.gov.za>

International experience: <http://www.jhkint.com>

Water Research Commission: <http://www.wrc.org.za>

Acts are available at the following addresses:

website: [www.polity.org.za](http://www.polity.org.za)

e-mail: [help@lawlibrary.co.za](mailto:help@lawlibrary.co.za)

# Annex 3

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## Papers Presented at Conference

### **Keynote Address – Put Sanitation First!**

- Mr Gourisankar Ghosh: Executive Director, Water Supply and Sanitation Collaborative Council, Geneva

### **Some Reflections on International Experience on Appropriate Technology**

- Mr Piers Cross: Water and Sanitation Program, Africa

## Policy and Strategy

### **Planning – the fundamental business process towards sustainable water services**

- Mr F van Zyl: Director, Department of Water Affairs and Forestry

### **Redefining Institutional Arrangements for Sustainable Water Services Delivery**

- Ms Malebo Kotu Rammopo: Director Local Institutional Development Support, DWAF

### **Free basic water and Water Services as a Sustainable Business**

- Mr Helgard Muller – Department of Water Affairs and Forestry

### **Revised Policy & Strategy for Accelerated Sustainable Sanitation Delivery**

- Ms Marie Brisley/Ciprian Mazubane: Deputy Director – DWAF,

### **Appropriate Water Resources, Conservation, Gender and Environment**

- Michael Singh, Mr Cornelius Ruiters, Mr Eberhard Braune: Directors – DWAF

### **Supporting Local Government in Water Services Delivery**

- Mr Kalinga Pelpola, C Eng, Pr Eng, B.Sc Eng FICE, FWISA Director: Project Development Support, DWAF

## Sustainable Sanitation

### (Environment, Environmental Sanitation and Technologies)

#### **Sustainable Sanitation and Appropriate Technologies**

- Mr Richard Holden, Mvula Trust

#### **Appropriate Technology lessons from Cholera Intervention Programme in KwaZulu-Natal**

- Mr Seetella Makhetha: Development Consultant, Seetella Makhetha Development

## Planning

### (Management roles, water services as a sustainable business and integrated rural development plans)

Appropriate Planning, the key to sustainability as well as technical, social and environmental acceptability in the provision of water services

- Mr C Marx (Director – Africon), Mr F van Zyl (Director – DWAF & Mr I Palmer (MD, Palmer Development Group)

## Institutional, Social, Capacity Building and Training

Training and Capacity-building – The interface between Appropriate and Institutional and Training – G Schoeman (MD – Afrosearch)

## Technology Choice

### (Design Standards, Benchmarking and Technologies)

Rural Water Supply in South Africa: Why does it cost so much? Are we getting value for money? – Mr David Still (Director – Partners in Development)

Benchmarking – An opportunity for the South African Water Services Sector

- Mr Jay Bhagwan (Research Manager, Water Research Commission)

## Operation and Maintenance

### (Partnerships, Regulations)

Partnerships and Appropriate Technology

- Mr Sam Shabalala Rand Water

Appropriate Technology in Operations and Maintenance

- Mr Dugald Ross

Public Private Partnerships – Mr Oliver Iwe

Public Private Partnerships – Mr Thuso Ramaema

Why have Partnerships (PPPs) in rural water supply – Mr Dave Gertzen

# Annex 4

## Conference Steering Committee

Name	Organisation (See list of acronyms in Annex 1)
Chairperson: Mr K Pelpola	DWAF
Mr D Gertzen	DWAF
MA Davies	DWAF
Mr B Aleobua	DWAF
Mr T Corbett	DWAF
Mr T Malviewicz	DWAF
Mr N Nokeri	DWAF
Mr J Bhagwan	Water Research Commission
Mr T Dhlamini	Mvula Trust
Mr R Holden	Mvula Trust
Dr Shaker	NCWSTI
Ms D Cassela	NCWSTI
Mr D Naidoo	S AACE
Mr K Haumann	S AACE
Mr A Greyling	S AACE
Mr L Naudé	IMESA
Mr M Van Veelen /Mr J Cooke	SAICE
Mr N Walker	WISA
Ms T Baker	Conference Secretariat
Ms A van Zyl	Conference Secretariat
Ms C De Jager	Conference Organisers
Corresponding Member: Mr Buys	Brits TLC
Mr S W Gillham	Umgeni Water
Mr B Jackson	Development Bank of SA
Mr D James	SANTAG
Mr P Kgole	SABTACO
Ms L Kgomongwe	SALGA
Mr J Kings	SANGOCO
Mr T Mabandla	SANGOCO

Mr R Kruger	DPLG
Mr W Lötz	WISA
Mr M S Ramathe	Association of Water Boards
Mr N Serfontein	Mhlatuze Water
Dr C Reeve	European Union
Ms N McHugh	Embassy of Ireland
Mr J Gay	Embassy of France
Ms Y Van Eechoud	Embassy of the Netherlands
Mr K Naicker	Rand Water
Mr P Cross	World Bank
Mr J Morch	UNICEF
Dr Sasha	WHO
Mr P Smith	DFID