

# WASH

Brisbane, Australia

# conference 2011



Towards sustainability in water, sanitation and hygiene

## CONFERENCE REPORT



Australian Government  
AusAID



# FOREWORD

## to the conference

by Kevin Rudd

I am delighted to welcome you to the water, sanitation and hygiene conference. This conference brings together some of the best thinkers and practitioners in the sector.

Most of us take clean water and sanitation facilities for granted. It is not right that today 900 million members of our human family do not have access to safe water and that about 2.6 billion do not have improved sanitation facilities. These are fundamental basic services that are necessary for good health and for the well-being of individuals so they can live the kind of lives that they have reason to value.

The absence of safe water and sanitation services and good hygiene means the poor remaining stuck in grinding, abject poverty. They will continue to become ill from water-borne diseases and conditions such as diarrhoea and parasitic worms. There is nothing pleasant about these conditions or the fact that globally diarrhoea is the second biggest cause of death of children under the age of five.

The Australian government works with communities in developing countries to give people safe water and better sanitation. In the last two years alone we have helped around 600,000 people obtain access to safe water and 400,000 obtain access to basic sanitation in East Timor, Indonesia, the Philippines, Solomon Islands and Vietnam.

As the world's population grows so too does demand for water. Sustainability is therefore one of the biggest challenges to satisfying this demand. It's one thing to construct pipes that provide clean water and hygienic toilets. It's another to ensure sustained behavioural change and local ownership for facility maintenance.

This conference is an opportunity to think creatively and share your knowledge and skills so that we all share the benefits of safe water, sanitation and hygiene – in a sustainable way.







# INTRODUCTION

The 'WASH Conference 2011: Towards Sustainability in Water, Sanitation and Hygiene' was held in Brisbane from 16th to 20th May 2011. This conference followed the 'Sanitation and Water 08' conference held in Melbourne in 2008 which aimed to boost the efforts to tackle the global sanitation crisis as part of the International Year of Sanitation. In 2011 'sustainability' was the focus; although in recent years effort has been directed towards scaling-up the spatial coverage of services and reaching targets, it is vital to ensure that services are sustainable in the long-term and current approaches need to be re-considered with that requirement in mind.

A total of 237 people from 40 countries participated in WASH 2011. Of these participants, just under half were from non-governmental organisations and the other half were from donor, government, academic and consulting domains. AusAID also supported 27 delegates from developing countries.

**The two-day conference:** The broad issue of sustainability was divided into four thematic areas with plenary sessions to bring these four interconnecting areas together. The themes were:

- Institutional sustainability
- Functional and environmental sustainability
- Behaviour change and social sustainability
- Financial sustainability

The parallel streams involved 80 presentations from invited leading professionals and case studies from practitioners identified through a call for abstracts. Facilitated discussion and debate amongst participants was encouraged through interactive formats. 20 people shared their work through a poster exhibition.

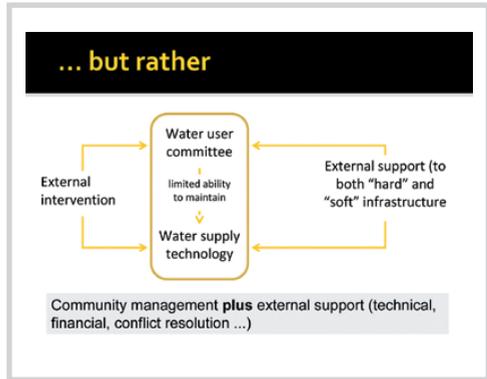
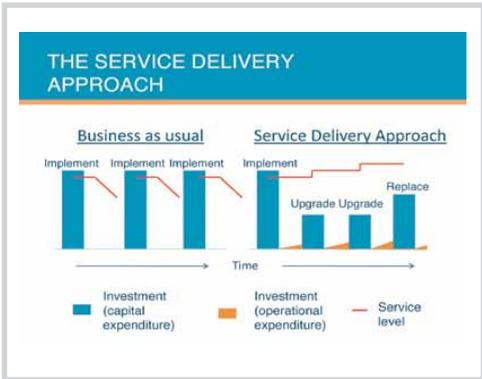
**The training program:** To respond to the capacity development needs of the growing number of professionals working on WASH issues in Australia and around the world, three days were allocated to 13 training activities covering a wide variety of topical issues, including:

- Moving to a service delivery approach, costing sustainable services
- Scaling-up sanitation, designing sanitation marketing programs, community led total sanitation, and advocating for sanitation
- Designing effective hygiene behaviour change programs using formative research, and monitoring the outcomes of hygiene behaviour change
- Water safety planning, understanding ground water, Water Point Mapping, regulation and the role of public accountability
- Social inclusion, including tools for promoting gender equality and working effectively with people with disabilities and HIV/AIDS.

A brief overview of the training sessions is provided in Annex A.

This report aims to provide a succinct overview of the key messages arising from the conference.

# Functional & environmental SUSTAINABILITY



**Figure 1** The service delivery approach results in improving service levels with relatively lower investments (Lockwood, 2011)

**Figure 2** The community management plus model for sustainable rural water supply (Carter, 2011)

The theme of functional and environmental sustainability dealt with ensuring water and sanitation infrastructure continues to function over time. It considered supply-chains and the necessary skills, support and business development services to keep services operational. This theme also addressed the links between service provision and the wider environment, in terms of the interlinked areas of water resources management, water quality and recycling of water and nutrients.

The following key messages show the new directions the sector must take if it is to seriously consider functional and environmental sustainability.

**Reduce the focus on ‘coverage’ and move to a service delivery approach:** Rural water supply infrastructure failure rates are unacceptably high, resulting in wasted investment and affecting the health and well-being of millions of people. It is time to shift attention from infrastructure to a renewed focus on permanent delivery of services (see Figure 1). As discussed later within the finance theme, life cycle costing is a critical component to enable this shift.

**Move gradually from community management to professionalised service delivery:** In terms of managing their own water supply there is a limit to what communities *alone* can do. However, when the key principles of community management are followed, and with recurrent finance and the right external support, such as sustainable supply chains for spare parts, communities can manage their water supplies, in a model known as community management PLUS (see Figure 2). Over the next few decades, as the capacity of local government increases, the rural water sector will need to move beyond community management PLUS to models of professionalised service delivery.

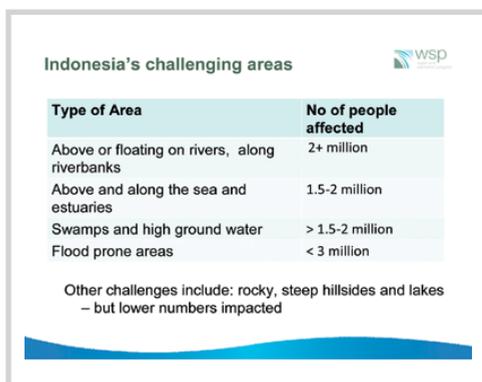
**Alternative pathways for urban water supply and management:** Current water management approaches are environmentally and economically unsustainable, particularly in the face of climate change (see Figure 3). We need to move beyond business-as-usual approaches based on high water demand and intensive treatment of wastewater.

Best practice approaches emphasise cost effectiveness, adaptability and sustainability. This requires a focus on the demand side of water planning so that solutions are appropriate for their context and we can tap into the potential for conservation. Developing cities have the opportunity to be at the forefront of innovation – they can leapfrog to sustainable options, characterised by efficient water use, fit-for-purpose re-use, energy recovery and nutrient capture and the use of distributed systems to reduce energy use, risks and costs.



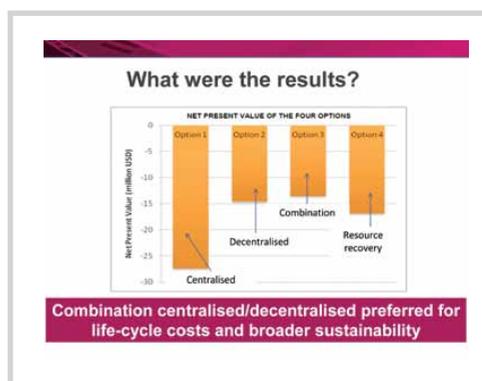
**Figure 3** Pressures and drivers demanding alternative pathways for service provision (White, 2011)

**Context is key – think ‘best fit’ rather than ‘best practice’:** Understanding local context and the drivers of change is vital, in terms of designing both strategies for reforms and appropriate technologies. For example the actions of national champions to lever change means that CLTS is now being scaled up in 44 countries and included in national sanitation policies in 10 countries (Kar, 2011). In another example, over 16 million poor people in just four countries in East Asia (Indonesia, Cambodia, Lao and Philippines) live in challenging environments, such as on/along rivers, in coastal or rocky areas (see Figure 4).



**Figure 4** Example of the challenging sanitation environments and the number of people affected (Blackett, 2011)

More appropriate and affordable designs for many of these areas are still needed. Finally, for wastewater management in peri-urban areas and small towns, a breadth of possible technical solutions need consideration against life-cycle cost and sustainability criteria to determine appropriate solutions (see Figure 5).

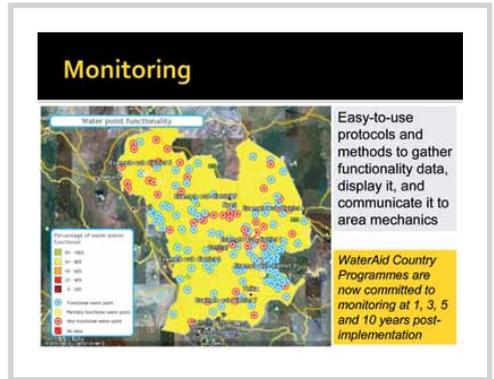


**Figure 5** Analysis of different options for wastewater management in Can Tho considering life-cycle costs and sustainability factors for this context (Carrard, 2011)

**Move from counting infrastructure to monitoring services:**

Measuring coverage (systems built or people served) does not account for actual services delivered and measuring functionality is a one-off check which cannot capture sustainability. Monitoring services means monitoring three things – a) the services provided; b) the service provider; and c) the service authority. It is vital that these three areas are included in performance monitoring with clear feedback loops that link to action (Lockwood, 2011).

Water Point Mapping forms part of a monitoring system for local level planning and decision making regarding equity of distribution and functionality of services. New technologies (such as Google Earth and geo/time referenced photos) make it easier to quickly communicate the status of services and can be used to improve accountability at different levels (see Figure 6). Civil society has a vital role to play in holding service providers to account for the quality and distribution of services.



**Figure 6** Example of using water point monitoring to check on water point functionality (Carter, 2011)





# Institutional SUSTAINABILITY

This theme of the conference sought to address how the institutional structures that support WASH services are developed, renewed and sustained over the long term. It included a focus on human resource management and service provision in the context of decentralisation. Central to on-going sectoral institutional performance is how different roles and responsibilities are shared and separated, and how the different players, such as public and private sector institutions, non-government organisations, community groups and consumers interact. The importance of viable regulatory arrangements, accompanied with issues of accountability and transparency were also discussed. An underlying theme was the time required to evolve and progress towards sustainable institutional arrangements. In the face of this, many external deadlines have unrealistic timeframes in the order of years. History indicates several decades is a more achievable timeframe to develop effective, on-going institutional arrangements.

The key messages conveyed by speakers within this theme were as follows.

**Working carefully within the decentralisation process is paramount:** Many developing countries are undergoing decentralisation which involves transfer of responsibilities for service provision to local government. Significant challenges have been seen as a result, due to low capacity, delays in fiscal transfers, lack of common investment plans, unclear transfer of assets and the lack of monitoring and oversight methods and with this, public accountability. Models to address these are needed, such as the model in Uganda, where well-structured fiscal flow to lower tiers of government is in place and the use of regional technical support units is proving successful. Each country is different and WASH service provision must be seen within the larger context of broader public sector reform (see Figure 7).

**Special attention to institutional and technical solutions for small towns is needed:** Small towns differ from large urban areas and rural areas and thus require a different approach. They are also expected to quadruple in size and number over

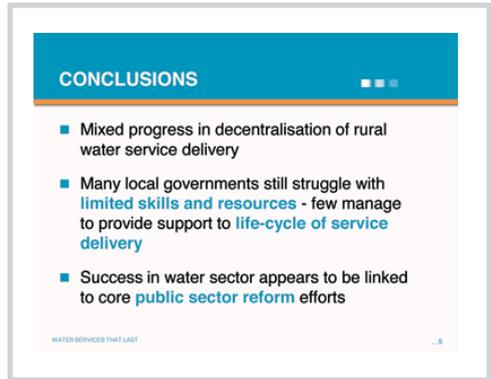


Figure 7 Conclusions about decentralisation and its effects in the water sector (Lockwood, 2011)

the next 30 years and bring with them a unique set of challenges (see Figure 8). In general they lack services and investment and the planning and design undertaken by urban specialists is often inappropriate for the economic and governance contexts typical in small towns. Greater analysis of small towns is needed, with development of a broad menu of options for institutional



Figure 8 Challenges to service provision arising in small town environments (Harvey, 2011)



**Figure 9** Key findings based on five country case studies to assess national capacity (Saywell, 2011)

arrangements and technical solutions that are recognised and supported through enabling policies.

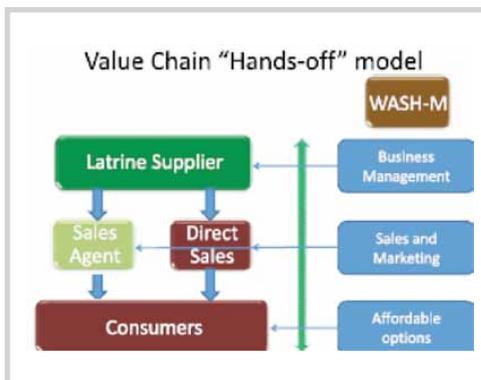
**Build the evidence base on the capacity gap and address the barriers to increasing human resources in the sector:** Other sectors such as health and education have made efforts to estimate their human resource needs to meet the MDGs, however the WASH sector has only just begun this task. Five case studies conducted so far show the dire need for large numbers of engineers, other professionals, technicians, and other skilled workers. The findings indicate the need for stronger pre-service education and national education, over reliance on community volunteers and issues in both areas of recruitment and retention due to low pay and poor conditions (see Figure 9). Long-term work is required to address these systemic issues.

**Institutional frameworks for sanitation and for slums are vital, yet missing:** Sanitation institutions in most countries are highly fragmented. For example in Uganda there are four relevant ministries but no ministry takes sanitation as their core mandate and all give it a low priority. In addition, in Kampala and elsewhere there is a lack

of an institutional framework for service provision to slums, which results in a weak environment to involve the private sector (Isunju, 2011). 16 million people in slums in Bangladesh don't have access to WASH (Islam, 2011). Non-government organisations support local community-based organisations in an attempt to fill this gap however volunteerism is not sustainable in the long-term. Changes are needed in by-laws to promote services for the poor, and associated adjustments in pricing and billing.

**Enable local entrepreneurship to flourish through the sanitation marketing approach:**

Successful development of sanitation businesses across many contexts is now being seen. These rely on the need to 'think like a business' and use 'value-chain' approaches (see Figure 10), such that businesses are supported to be profitable, independent, and enduring through on-going demand (non-reliant on subsidies etc.). Recognising that there must be a clear opportunity for profit is fundamental. In addition, careful consideration of how competition drives market development is needed, including the need for demand creation, price, quality, innovation, and collaboration. In Cambodia in the last year some 12,400 latrines have been purchased by households from sanitation businesses (Hengly, 2011).



**Figure 10** Components of the value-chain approach to developing sanitation businesses (Hengly, 2011)

# Behaviour Change & Social SUSTAINABILITY

Hygiene behaviour change is often the 'poor cousin' of infrastructure initiatives in WASH, yet handwashing alone is known to significantly reduce neonatal mortality and hygiene promotion is known to be one of the most cost-effective public health interventions. Equally, the broader 'social' aspects of how WASH interventions are framed and carried out is pushed to the background, and yet social sustainability and social inclusion are strong supporters of sustainable WASH outcomes and important aims in and of themselves. This conference stream sought to bring both of these issues to the fore and present leading research and examples from practice about how to better address these two areas, and to sustain positive changes long into the future.

The key messages given by speakers in this theme were:

**The health myth: behaviour change is about motives (not knowledge), and 'health' is not a motivator:** for hygiene or sanitation behaviour change. Behaviour change theory draws on many fields including healthy psychology and anthropology. Behaviour change depends on factors in the setting or context (such as availability of water, the social setting etc.), factors in how the brain operates (including motivators, planning of behaviour and habits), and how and intervention and new messages

are designed and shared (see Figure 11). The most common motivators for handwashing have been found to be disgust, affiliation with a group, and also comfort and the wish to nurture others (see Figure 12). For example the best messages found to work in one handwashing campaign were: 'Is the person next to you washing their hands?' (affiliation) and "don't take the loo with you" (disgust). Sanitation behaviour change using community-led total sanitation also shows the power of 'disgust' and 'status' (pride and shame) as a motivator for wide-spread behaviour change.

**Formative research on target groups is critical to developing well-pitched behaviour change interventions:** Formative research examines 'why' people behave the way they do, and what the best potential motivators might be to shift behaviour (see Figure 13). Locally conducted participatory formative research in its simplest form can be Focus Group Discussions with different target groups for example. This helps all the stakeholders involved to realise that changing behaviour, even with regard to what seems like small changes such as hand-washing, is actually a much more complex and challenging task than you might expect, and touches on deeply rooted cultural practices and norms. For long-term, large-scale change in behaviour change, formative research needs to be conducted in close collaboration with local institutions,



**Figure 11** Factors influencing behaviour and behaviour change (Curtis, 2011)



**Figure 12** Disgust is a strong motivator for hygiene and sanitation behaviour change (Curtis, 2011)

especially local government, such that the lived experience of how do successful behaviour change communication is nurtured within these institutions.

**Monitoring hygiene behaviour needs multiple methods, including direct observation:**

Unless we monitor behaviour change, and particularly change over the long-term, we cannot know the effectiveness nor sustainability of behaviour change interventions. Measuring hygiene behaviour is difficult. Studies have found that for instance if 90% people say they did wash hands with soap, actually only 5% had done so (Sijbesma, 2011). This indicates the need for a combination of methods in assessing hygiene behaviour, including direct observation, and not just self-reporting. In addition, qualitative scales that describe a breadth of scenarios may be useful for translating the highly qualitative nature of behaviour change into manageable quantitative data (see Fig 14).

**Commitment and skills are needed to put existing tools for social inclusion into practice:**

Addressing gender equality and social inclusion in WASH is critical, do-able and many tools and approaches already exist, the challenges are to (i) generate commitment and skills to put them into practice; (ii) break the vicious cycle of women's limited time and mobility and participation; and (iii) address the exclusion of groups such as people with disabilities, which usually make up 10% of a population (Chikusa, 2011). If social inclusion is to be taken seriously in WASH initiatives, then relevant staff and institutions need to look at addressing the practical needs of women and men and marginalised groups such as people with disabilities (for example, appropriate facility design, consideration of menstruation and special physical needs), challenging existing norms, and empower women and socially excluded groups.

**Working at large scale to change behaviour relies on partnership and coordination, since one group cannot do it alone.**

Government and other agencies and can usefully involve the private sector, and this is assisted by an independent organisation who can act as 'broker' in this relationship. In Indonesia a public-private partnership for hand-washing with soap found ways to make the partnership win-win for each group and over time developed appropriate roles for each group to play (See Figure 15).

**Motivation: WHY practice?**

What triggers certain groups to adopt certain practices? E.g. in Niger, out of 36 reasons for toilet use, only one was better health.... others were mostly socio-cultural & economic: privacy, convenience, safety, status (e.g. 'star' home in Sri Lanka), time saving, witchcraft prevention  
 Different groups have different triggers, so formative research is needed to plan effective messages



WASH conference 2011

**Figure 13** Motivators for toilet use and the need for formative research to plan effective messages (Sijbesma, 2011)

**Another example of a SSH4A project scale:**

Observation on toilet use	Score
Toilet not in use as toilet	0
Toilet is use for urination and defecation	25
Toilet in use as toilet and no flies can access hole	50
Toilet in use as toilet and no flies and no faecal smears	75
Toilet in use as toilet and no flies and no faecal smears and no cleansing/sanitary materials in open	100
Reason for score:	
Planned action:	



**Figure 14** Qualitative information scale used in SNV's sustainable sanitation and hygiene for all project (Sijbesma, 2011)

**Why a private sector partnership?**  
 Expertise, media, resources...

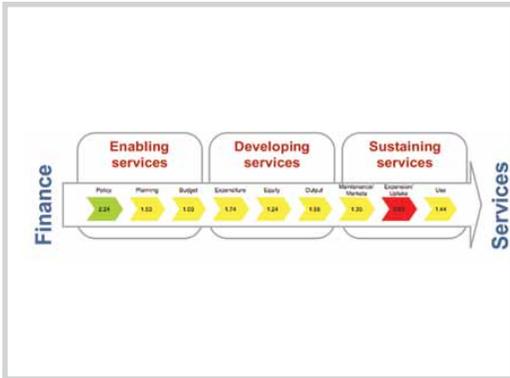


**Private sector offers and in return needs..**

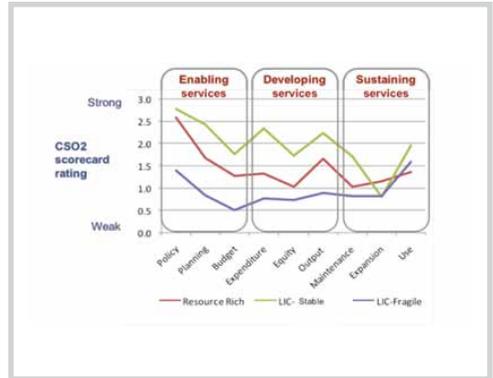
- Marketing & behaviour change expertise and insight
- Channels and media for behavioral change messages
- Partnership resources
- Credibility 'good image'
- Opportunities to meet existing and potential customers
- Opportunities for corporate social responsibility
- Time efficient options

**Figure 15** Reasons for private sector partnership (Blackett, 2011)

# Financial SUSTAINABILITY



**Figure 16** The scorecard helps identify bottlenecks in the service delivery pathway (de Waal, 2011)



**Figure 17** Low Income (LIC) Stable countries have stronger service delivery pathways (de Waal, 2011)

Financial sustainability focuses on how governments, donors and the private sector responsible for WASH services ensure revenue streams to cover the costs of operation, maintenance and infrastructure renewal. The key messages from speakers in this theme were as follows:

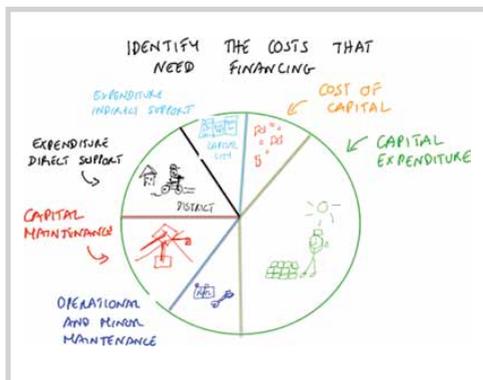
**Identify and address bottlenecks in service delivery pathways:** The Country Sector Overview methodology provides a new tool to help identify where the main bottlenecks are in the chain of processes that turn finances into services (see Figure 16).

The analysis shows that in Sub-Saharan Africa low income stable countries have made the most progress in expanding water supply and sanitation services in rural and urban areas, more equitably and with better quality than either low income fragile states and resource rich countries (see Figure 17).



Stage of pathway evolution	Objective of sector reform	Recommended nature of aid instrument
<b>Establishing Stage</b>	Build basic <b>oversight capacity for implementation</b> within the line-ministry Initiate development of economy wide capacity for construction and scheme operation.	Project grants and loans <b>channelled to the sector ministry</b>
<b>Transitioning Stage</b>	Foster <b>linkages</b> between the sector institutions and <b>core-government systems</b> Deepening economy-wide capacity for construction and broadening options for scheme operation.	Programmatic earmarked grants and loans for the subsector but channelled through the <b>ministry of finance linked to conditional intergovernmental transfers.</b>
<b>Transitioned Stage</b>	To consolidate the subsector institutional linkages with core-government systems Step up <b>autonomy</b> of economy-wide capacity for <b>sustaining service delivery.</b>	Budget support channelled through the <b>ministry of finance linked to intergovernmental block transfers.</b>

**Figure 18** Stages of service delivery pathway development (de Waal, 2011).



**Figure 19** Identifying the cost components that need financing in the life-cycle of sustainable services (Fonseca, 2011).

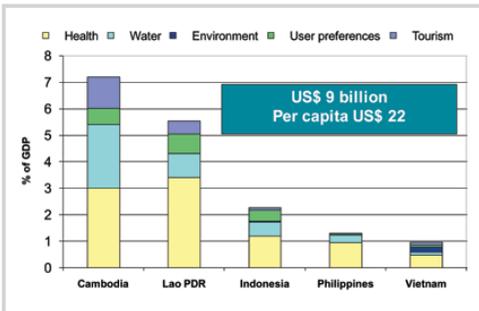
Countries at the vanguard of accelerating service delivery have reformed sector service delivery and hitched reforms to core government systems (for example national planning, public expenditure management, civil service reform, decentralised service delivery). Aid modalities can support this transition to using core government systems or undermine it (see Figure 18).

Finance all the cost components in the life cycle of sustainable services: In our current way of working three cost components are forgotten – capital maintenance, direct and indirect support. Identifying all cost components is the first step towards working out what institutional changes are needed to cater for each component (see Figure 19).

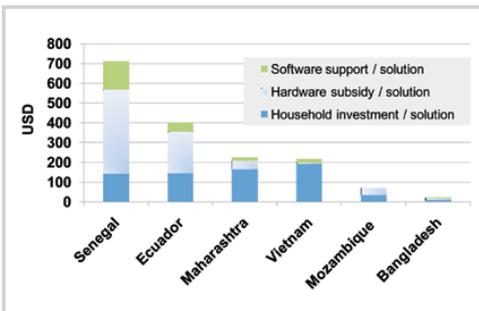


Demand	Supply by Potential Financiers
Urban Utilities	Banks, Domestic Financial Institutions
Small service providers	
Households	Microfinance Institutions

**Figure 20** Potential market segments for domestic market borrowing (Mehta, 2011)



**Figure 21** Cost of not investing in sanitation as percent of GDP (WSP, 2011)



**Figure 22** Breakdown of costs for six large-scale sanitation programs (Perez, 2011)

**Use public finance to attract, not discourage, other potential financiers:** Utilise public finance to attract market finance, in addition to household finance. Examine how alternatives to public sector service delivery can create innovations that a) reduce investment risk b) leverage market finance c) encourage innovation in new technologies (see Figure 20).

**Encourage local government towards sustainable investment:** Conditional grants which include sustainability conditions are the main tool for incentivising local government to roll out sustainable services. At the same time, unconditional grants are also essential for building local core capacity and basic means of operating (Kabir and Ahsan, 2011).

**All sanitation investments have positive economic returns:** The life cycle returns of different sanitation options differ according to country contexts and should be considered before promoting a particular sanitation option. However, all sanitation options have positive economic returns (see Figure 21).

**Better understand the costs of sanitation programs:** Our understanding of the costs of sanitation programs is improving (see Figure 22). It is easier to collect the cost components of sanitation programs during a program rather than after project completion.

# CONCLUSION

Drawing the threads together – sustainable services and behaviour changes

The WASH 2011 Conference provided new insights into what it will take to achieve long term sustainability. The key message was the shift in emphasis we need to make, from expanding the coverage of services to delivering services that are sustained into the future. That is, safe water supply provided day in and day out; clean toilets used by all; effective treatment methods for wastewater and sludge management; and deeply ingrained hygiene habits.

What will it take to reach sustainability?  
Everyone, all agencies, donors and NGOs alike need to regard sustainability as a critical

mission and to re-think fundamentally their role in the sector in light of these ideas shared at WASH 2011. For donors this may mean moving beyond funding increases in coverage to demanding evidence of sustainability of services and behaviours from those they support. For implementing organisations this may mean revising approaches to take into account this critical concept. Sustainability requires a change in mindset and an eye for the future rather than the present. If we all now start to look to the future we can realise our vision of a world where everyone enjoys the benefits of hygiene, sanitation and water.

# ACKNOWLEDGEMENTS

## WASH conference

We would like to thank the many people who contributed to the success of the conference including the staff and students at the International WaterCentre and the International WaterForum. We would like to give special thanks to all the presenters and trainers and in particular the key note speakers: Clarissa Brocklehurst (UNICEF), Dr Junaid Ahmad (World Bank), Dr Val Curtis (London School of Hygiene and Tropical Medicine), Jaehyang So (Water and Sanitation Program (WSP)) and Professor Richard Carter (WaterAid).

## Conference Report

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This report contains PowerPoint slides drawn from many presenters at the conference, and these contributions are gratefully acknowledged, and full presentations are available on the website at [www.watercentre.org/wash2011](http://www.watercentre.org/wash2011)

Piers Cross is thanked for his input to the design of this conference, particularly the finance theme. Dominick de Waal and Regina Souter, stream facilitators for the finance and institutional themes are thanked for their input to this report.

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# ANNEX A:

## Overview of the training program

**Community-Led Total Sanitation: Personal, professional and institutional attitude change: The keys to the success of CLTS and its scale-up (Kamal Kar, CLTS Foundation)**

This training program explored the underlying methodology of CLTS: igniting 'disgust' and 'shame' around the practice of open defecation within a community. Techniques and tools for triggering these emotions were discussed, along with the need for attitude behaviour-change of key individuals within communities, to involve communities in initiating collective local action towards sustainable sanitation improvements.

**Performance monitoring for rural sanitation and hygiene programs (Antoinette Kome, SNV Netherlands Development Organisation; Christine Sijbesma, IRC International Water and Sanitation Centre)**

Monitoring sanitation and hygiene behaviour is a complex topic, and often only the number of toilets is counted. Very few reliable data are available that show whether hygiene behaviours are sustained. This is a key constraint for improving WASH governance, because the lack of reliable (performance) information limits evidence-based decision making especially at the local level. In this training, SNV and IRC shared the main elements of their performance monitoring approach as used in the Sustainable Sanitation and Hygiene for All program in five countries.

**Water and sanitation services that last: From implementation to service delivery approach (Harold Lockwood, IRC International Water and Sanitation Centre / Aguaconsult Ltd.; Catarina Fonseca, IRC International Water and Sanitation Centre; Mekala Snehalatha, CESS – Centre for Economic and Social Studies)**

The principles, components and outcomes of service delivery and life-cycle costs approaches were explored. The central questions of what constitutes a sustainable service, what the benefits of sustainable service delivery approach are, and how to improve sustainability within an organisation's remit, were discussed. An overview of models and examples of how to go from an 'implementation approach' to a 'service delivery approach' were provided.

**Scaling-up rural sanitation: Evidence-based learning and knowledge sharing (Almud Weitz, Water and Sanitation Program East Asia and the Pacific; Eduardo Perez, Water and Sanitation Program; Cordell Jacks, International Development Enterprises, Cambodia; Tamara Baker, International Development Enterprises, Cambodia; Keryn Clark, RWSS Project, Timor-Leste)**

Over the past 30 years, most rural sanitation projects have involved pockets of success that were small in scale; expanding on the successes of small-scale projects to increase access on a large scale has been an enduring challenge. Over the past 3 -4 years, substantial efforts have gone into testing approaches and building up evidence of what works at scale and what doesn't. During this program, evidence from experiences in Cambodia, India, Indonesia, Tanzania and Timor-Leste were presented. The underlying programmatic approach combined two promising approaches, community-led total sanitation and sanitation marketing, under the umbrella of an 'enabling environment' at the policy and institutional level (central and local governments) for demand and supply to grow and sustain each other while catering to all classes of consumers, including the poorest.

**Water Safety Plans explained: What they are and how you can get involved (Dr David Sutherland, World Health Organization; Mien Ling Chong, World Health Organization; Riego de Dios Joselito, National Centre for Disease Prevention and Control, Department of Health, Philippines)**

Water Safety Plans are a vital tool in ensuring environmental and functional sustainability. This training program examined what is involved in the process, how WSPs are applicable for any water supply (whatever the size of the water supply system), who is or should be involved in the process (both within and outside of the water supply organisation) and how different organisations can become involved in water safety planning.

**Behaviour change for WASH: A one-day course for practitioners (Dr Val Curtis, London School of Hygiene and Tropical Medicine; Dr Robert Aunger, London School of Hygiene and Tropical Medicine)**  
Improving WASH requires changes in behaviour, whether in uptake and use of infrastructure, technologies or products, or in domestic and personal infection prevention behaviour (hygiene).

Though considerable progress has been made in understanding the drivers and facilitators of health-related behaviour, and evidence abounds concerning novel approaches to behaviour change, the sanitation, hygiene and water sector has yet to benefit fully from this knowledge. This training program addressed how interventions change environments, behaviours and health, and key considerations in designing interventions.

**Costing sustainable services: The life-cycle costs approach** (Catarina Fonseca, IRC International Water and Sanitation Centre; Mekala Snehalatha, CESS – Centre for Economic and Social Studies; Harold Lockwood, IRC International Water and Sanitation Centre / Aguaconsult Ltd.)

Life-cycle costs represent the aggregate costs of insuring delivery of sustainable WASH services through a system's cycle of wear, repair and renewal. Applications of the life-cycle costs approach (LCCA) methodology in Burkina Faso, Ghana, Andhra Pradesh (India), Mozambique were used to demonstrate cost components and service levels, tools for data collection and provided an introduction to (financial) data analysis.

**Inclusive WASH Workshop** (Rosie Wheen, WaterAID Australia; Di Kilsby, International Women's Development Agency; Juliet Willetts, Institute for Sustainable Futures / University of Technology, Sydney; Katherine James, CBM; Judy Hagan, Oxfam Australia; Lisa Natoli, Burnet Institute; Joel Fernandes, Timor-Leste DPO; Huy Nguyen)

To be sustainable and effective, as well as to achieve social justice, WASH programs must address the needs of all in the community. While this is recognised by the sector, practitioners continue to encounter obstacles in putting this into practice. This workshop brought together experience and expertise in the areas of gender, disability and HIV/AIDS, to share fundamental principles and practical tools.

**Sanitation Marketing 101: Designing and implementing your program** (Danielle Pedi, WaterSHED; Aun Hengly, WaterSHED-Cambodia; Tamara Baker, International Development Enterprises, Cambodia; Cordell Jacks, International Development Enterprises, Cambodia; Marion Jenkins, WaterSHED/University of California at Davis)

This training provided an understanding of the sanitation marketing approach, a critical component of sustainable, local WASH provisions. Tools and tips for strategic planning, product development, partnership building, field implementation, methods for collecting and analysing sanitation market data were shared.

Experiences in sanitation marketing in Cambodia through Lien Aid/WaterSHED and IDE's programs, and Africa (Benin's government-led approach) and elsewhere were presented to illustrate the program development process from market research through to strategy development and design to implementation, monitoring, and scale-up.

**Groundwater: A precious resource, but little understood** (Paul Bolger, GHD)

Groundwater is often identified as a potential water source, although it is not always possible to find suitable groundwater sources to meet emergency or development needs. This training session provided an overview of the difficulties and uncertainties in finding and sustainably developing groundwater in some environments.

**Monitoring and mapping tools for sustainability: Why, what, when & how?** (Erik Harvey, WaterAid UK)

Establishing and managing long-term, viable, sustainability monitoring and visualisation (mapping) systems are valuable components of WASH programs. Existing data collection and visualisation tools were discussed, including WaterAid's WaterPoint Mapper and the related sanitation mapper. The differences with water, sanitation and hygiene monitoring systems were also explored.

**Putting procedural equity into practice: Raising citizens' voice in the regulation of water services** (Dr Laila Smith, AusAID; South Africa)

One of the greatest challenges to sustaining water services is the disconnect between service users and providers. The "Citizen's Voice" model aims to address this challenge, by raising public awareness on water and sanitation services, transforming this public awareness into increased public capacity to play a local monitoring role in services, and to facilitating greater civil society involvement in the strategic planning of water services and in doing so to broaden the decision-making process (procedural equity) in the provision of water (distributive equity).

**The importance of sanitation – how can you bring about change?** (Ben Fawcett, International WaterCentre)

This program explored several key issues relating to accelerated improvement of sanitation, namely: the need to emphasise 'excreta-related disease'; the need to demonstrate the cost-effectiveness of improved sanitation to politicians; the need to emphasise work in poor urban areas; and the need for champions of sanitation.

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**Front cover** - Juthika Howlander, WaterAid. **Pages 3,4** - Marco Betti, WaterAid; **Page 6** - WASH 2011 conference. **Page 7** - Juthika Howlander, WaterAid; **Pages 12, 13** (from right) - Academy for Education Development, Hygiene Improvement Project, Caroline Irby, WaterAid and Juthika Howlander, WaterAid.