

# Water Safety Plans

**– An effective risk-based management tool for managing drinking water supplies**

**6<sup>th</sup> IWA-JWWA Workshop on  
Promotion of Tap Water Drinking and  
Public Relation Practices in Water Utilities**

**21 January 2011**

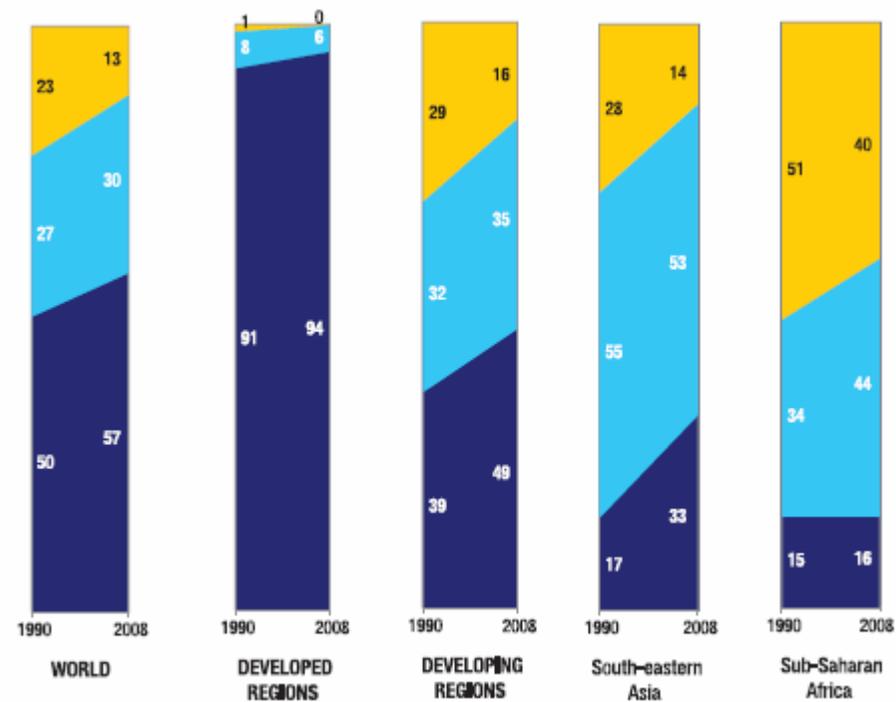


**International  
Water Association**

- **Global DWQ and progress towards MDG's**
- **Overview of WSPs**
- **Global and Regional WSP activities**
- **Summary**



# Latest report on progress towards MDG's



Source: JMP report, 2010

- Over half of the global population have access to drinking water through piped supplies
- South and South-East Asia and Africa have lowest populations with 'unimproved' supplies
- Whilst progress is being made on *accessibility*, what does this tell us about water *quality*?

- Significant risks associated with water safety delivered through piped supplies
- Diarrheal disease accounts for approx 4.1% of the total global burden of disease and 1.8 million deaths per year
- 88% of burden is attributable to unsafe water supply, sanitation and hygiene

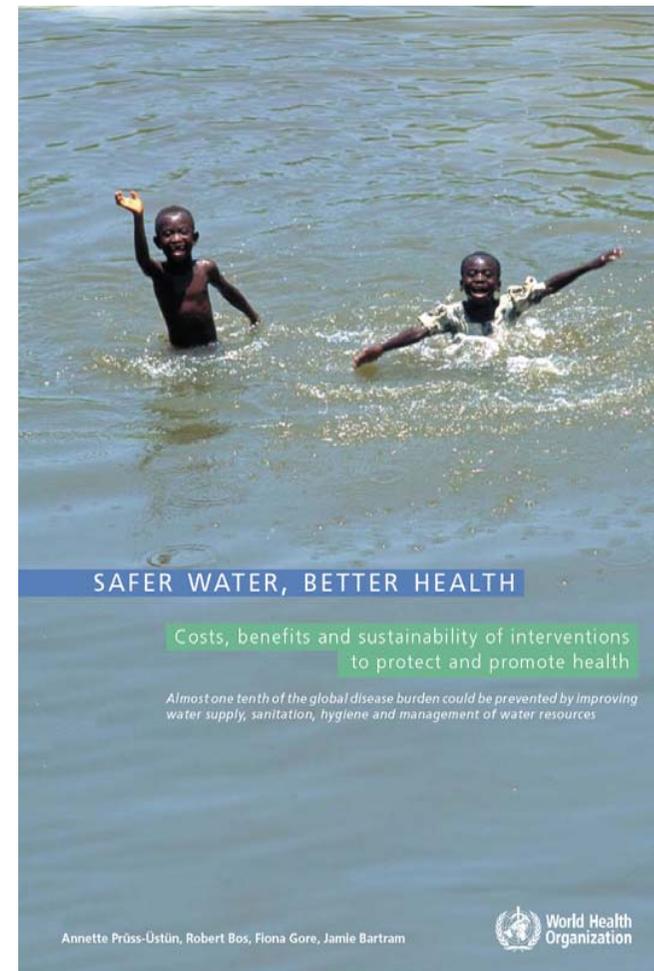
**Q: How much disease could be prevented by better managing water, sanitation and health ?**

**A: 10%**

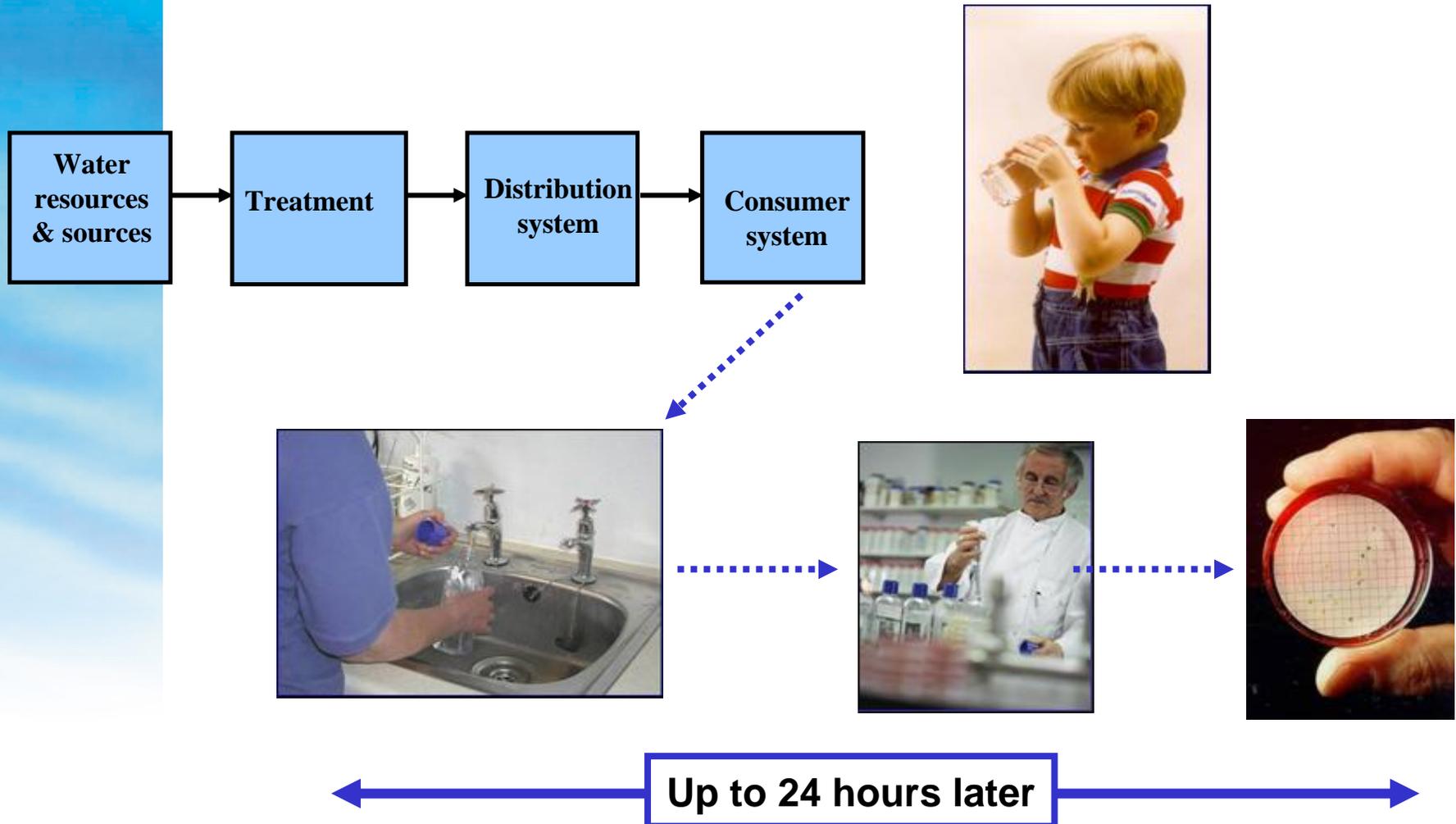
*"Almost one tenth of the global disease burden could be prevented by improving water supply, sanitation, hygiene and management of water resources"*

**WHO Report 2008:**

**"Safer water, better health"**

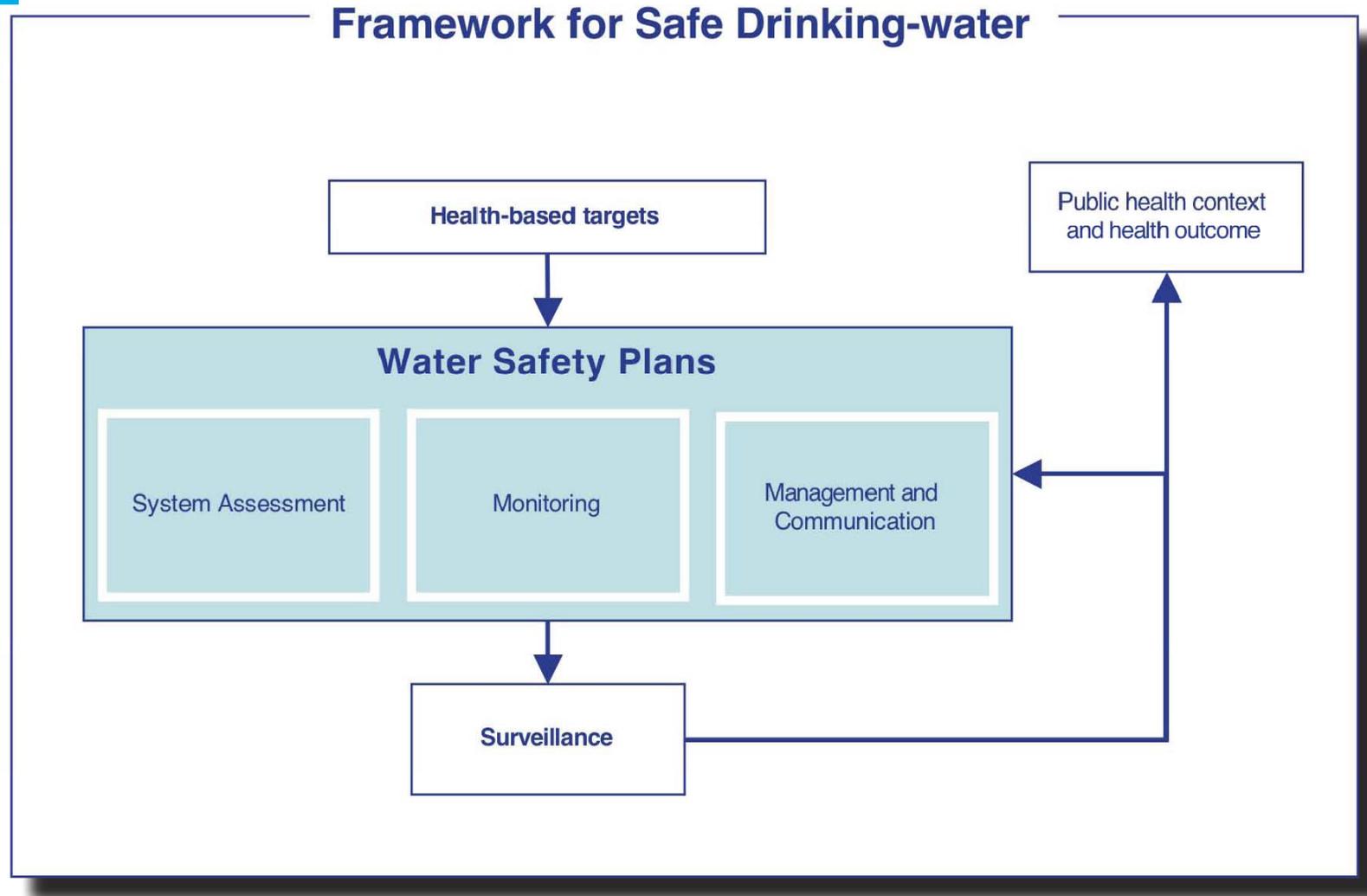


# Traditional approaches are inadequate



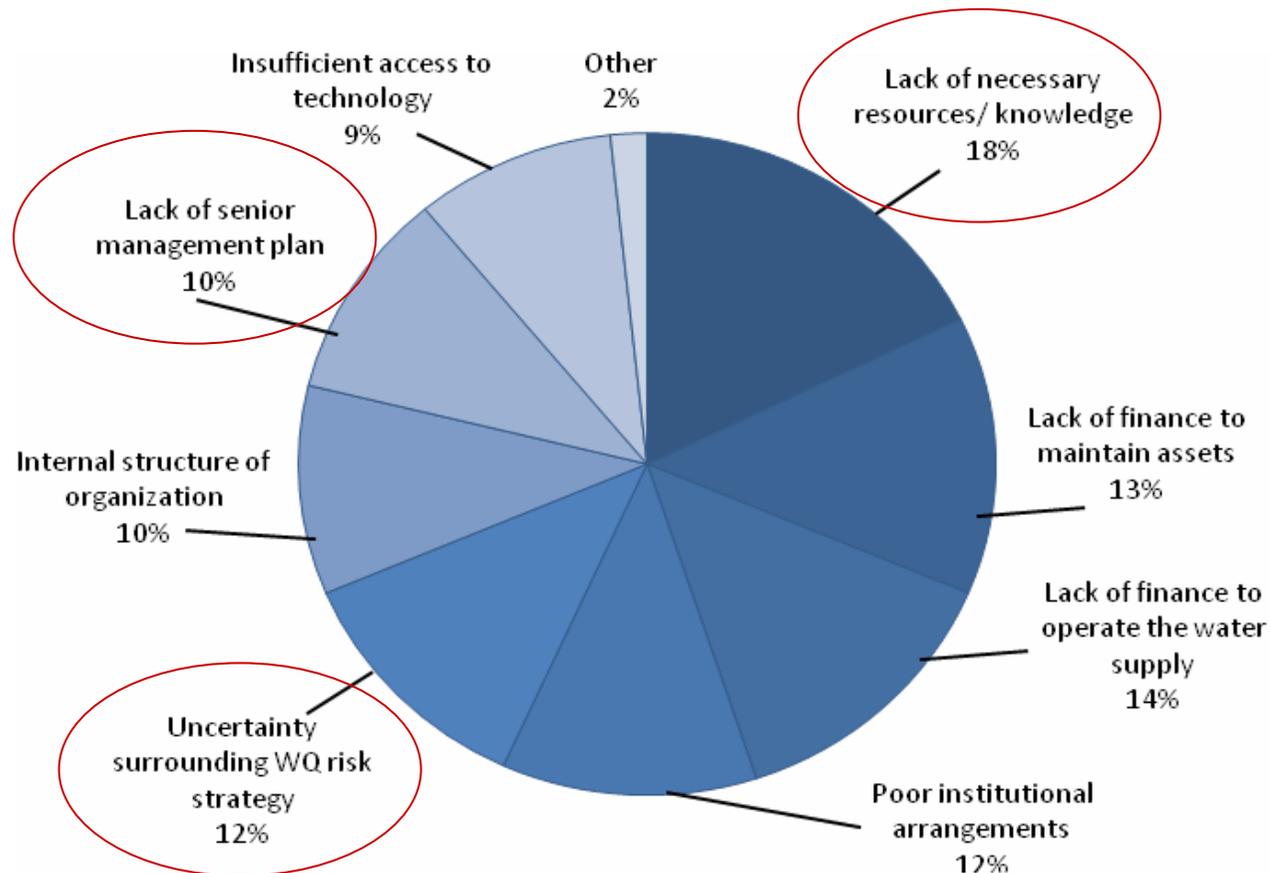
- **Preventative, risk-based approach to managing water supplies (built on HACCP principles)**
- **Catchment-to-consumer risk assessment and management**
- **Water utilities pivotal in the implementation of WSPs**
- **Improves service delivery and drinking water quality**

# Framework for safe drinking water



# Lack of capacity and resources

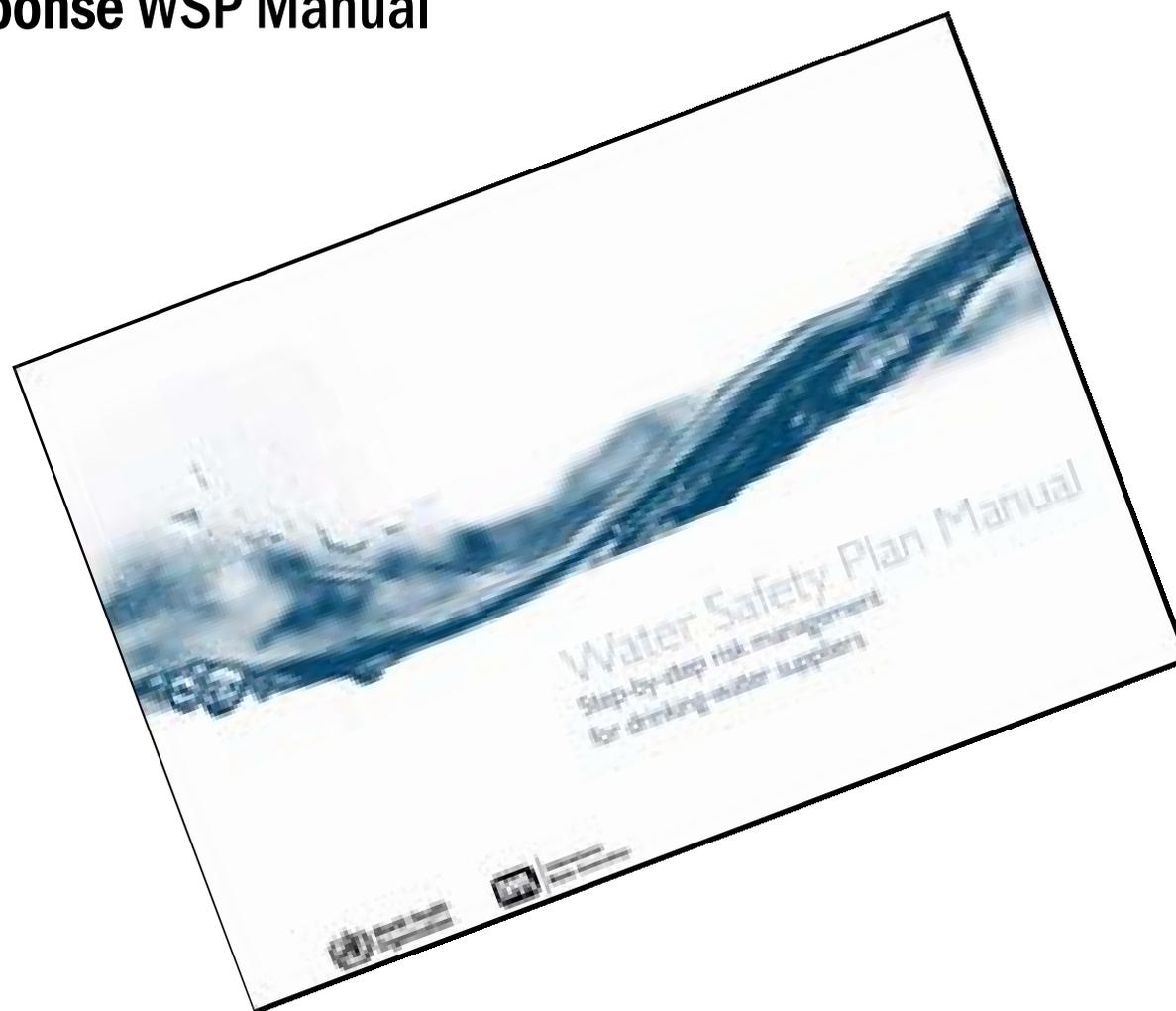
Significant challenge to risk management in practice is lack of awareness and capacity



*IWA utilities survey (2008): 'What is the most significant barrier to implementing risk management strategies?'*



**Demand** Step-by-step guidance for WSP implementation  
**Response** WSP Manual



Demand Resources in non-English languages

Response Translated WSP manual



# Water safety portal

Demand More readily accessible tools and case studies  
Response Web based toolbox for tools and case-studies

[www.wsportal.org](http://www.wsportal.org)

The screenshot displays the Water Safety Portal interface. At the top, it features the logos for the World Health Organization and the International Water Association (IWA). The main header reads "Water Safety Portal". Below the header is a navigation menu with links for Home, Login, and Tools. A search bar is also present. The central content area is titled "How to develop and implement a Water Safety Plan" and describes a "step-by-step approach using 11 learning modules".

The core of the page is a flowchart illustrating the process:

- Preparation:** 1. Develop the WSP team.
- System Assessment:**
  - 2. Develop the water supply system.
  - 3. Identify hazards and potential water quality risks.
  - 4. Assess and control water treatment, storage and distribution risks.
  - 5. Develop, implement, and monitor an operational monitoring system.
  - 6. Assess capability of the water system.
  - 7. Validate effectiveness of the WSP.
- Upgrade:** 8. Monitor and improve the WSP.
- Management and Communication:**
  - 9. Develop management systems.
  - 10. Develop training programmes.
- Feedback:** 11. Plan and implement periodic review of the WSP.

At the bottom of the page, there are icons for "Catchment", "Treatment", "Distribution", and "Consumer", along with a footer containing "IWA homepage", "WHO homepage", "Services", "Disclaimer", and "FAQ".



# WSP quality assurance tool

## Demand Assess progress of WSP implementation Response WSP assessment tool

WSP Assessment Tool Part 2

STATUS: Not Started

Table 4 should be filled out for each water supply system

User Name:

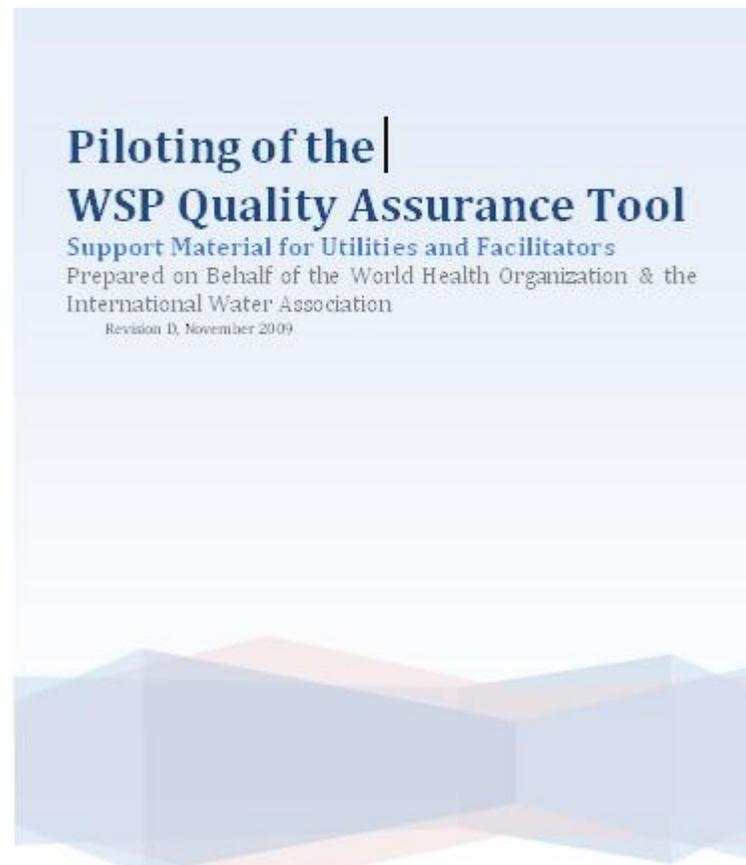
Job Title:

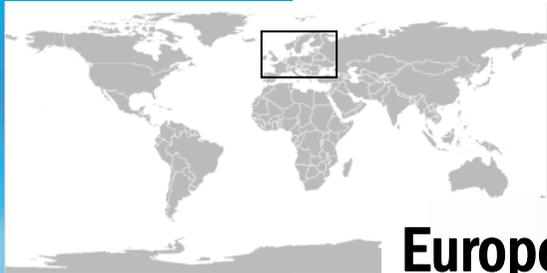
Date:

**Table 4**  
**Description of Water Supply System**

**Guidance on how to score each question:** For each question, definitions are provided on each possible score. Additionally, specific guidance is given on what would score 4 points. To score a 4, the step must also be fully documented and evidence should be readily available demonstrating that the action is complete and is effective, as appropriate. When scoring a 3 or 2, please enter in the comment field (grey cell below), why that score was given.

WSP Steps	Score	Module Ref #	Guidance
4.1 Has the water supply system been described from catchment to tap?		2	<b>4 = The water supply system has been completely described from catchment to tap, includes water quality targets and is dated; 3 = Substantially completed; 2 = Partially completed; 1 = Just started; 0 = Not started.</b> The text in bold provides definitions on the possible scores listed in the drop down menu of the yellow cell. The non-bolded text gives details on the WSP step and lists where additional information can be found. There should be a detailed description of the water supply system from catchment to tap. Flow diagrams and schematics should be included which capture all elements of the water supply system in sufficient detail where the system is vulnerable to hazards and where existing controls are sited. As a minimum, it should include abstraction points, treatment sites, treatment streams, service reservoirs, pumping stations, connections to other water supply systems and any special arrangements for users and uses of the water supply system. The description should also include the water quality targets and be dated. Refer to Module 2 of the WSP Manual for more details.





## Europe

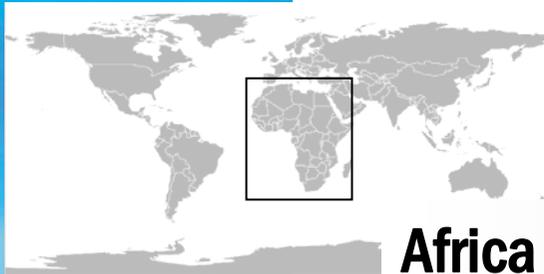
- **Inclusion of risk management requirement as part of EU DWD**
- **Region-wide research**
  - Concluding (TECHNEAU 19m Euros)
  - Commencing (number of FP7 calls)



## Latin America and Caribbean

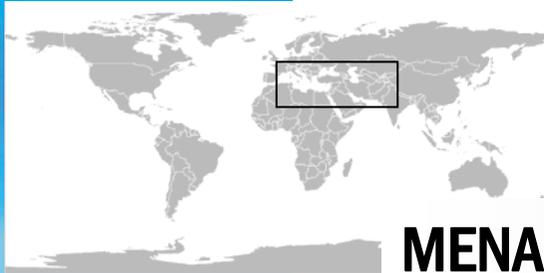
- **Latin America and Caribbean WSP Network**
  - 300+ Members
  - 25 Countries
- **Declaration of Lima**
  - ‘Competent authorities should incorporate health standards and reliability in the regulatory regime...These will be based on the best scientific evidence available...’
  - ‘WSPs are a potential tool for effective management, which allows the operators to provide a safe supply of drinking water and to allow surveillance by the authorities.’
- **Regional Conference 2011**





- **Capacity building for utilities (UN-Habitat, CAP-NET, IWA)**
  - CEO Sensitisation and operational training
    - Anglophone (RSA September 2009)
    - Francophone (Morocco May 2010)
    - Lusophone (Angola June 2010)
  - Twinning between utilities (WOPs)
  - Training of Trainers workshops
- **USEPA 5-year funded programme for WSP upscale in E-Africa**





**MENA**

- **Statement of Amman**
  - Current DWQ management practices are reactive and not appropriate
  - WSPs are *the* practice for drinking water management
  - Utilities and regulators need to work together
- **Regional Conference (Oman, May 2011)**





## Asia / Pacific

- **WHO/AUSAID Water Quality Partnership for Health**
  - Capacity building and piloting of WSPs from 2005 – 2009 (Phase 1)
  - Countries include Bangladesh, Bhutan, Nepal, Lao PDR, Philippines and Vietnam





## Asia / Pacific

- **WSP Curricula integration**
  - ASEAN University Network on Southeast Asia Engineering Education Development Network (AUNSEED Net) develop long-term strategies for integrating WSP concepts into engineering curricula and research activities in universities around the region
- **Global IWA-WHO Conference November 2-4 2010 (Malaysia)**
- **Asia-Pacific WSP Network (to be launched in 2011)**



## Objectives

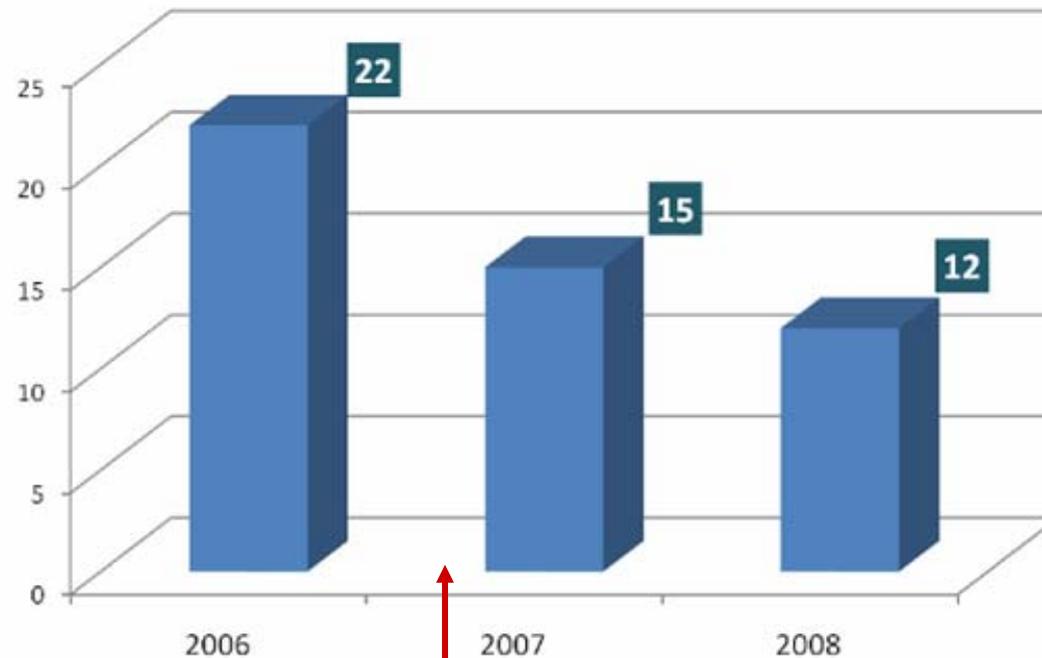
- *Advocacy* - promote the WSP approach as part of national water strategies and for implementation
- *Communication* - be a forum to exchange information and knowledge about the implementation of WSPs
- *Research* - promote and support the evaluation of the impact of WSPs on the supply of safe drinking water
- *Implementation* - support WSP implementation through facilitating partnerships, resources sharing, knowledge sharing and support for capacity building



**CASE STUDY**

## Total Non-Compliances in Water Quality *constant volume of supplied water*

Operational and Legal Monitoring



WSP Implementation



# Reduce operational costs

**CASE STUDY**

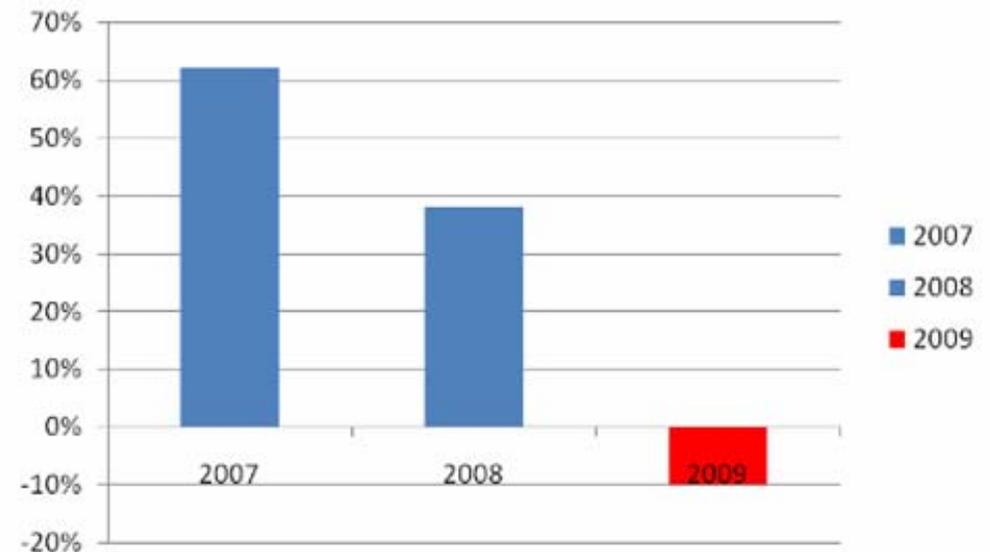
## Human Resources Costs – Internal and External

Item	Costs
WSP Implementation	73.500 euro (~105.000 USD) - <b>2007</b>
Keeping WSP	43.500 euro (~62.000 USD) - <b>2009</b>

Reference year: 2006

### Operational Costs:

- Water quality operational monitoring
- On-line critical water quality instruments



# Summary

- Increasing population being served by piped supplies – sharper focus on managing these systems
- There is a significant potential for reducing disease burden through widespread implementation of WSPs
- Wide range of practical tools available to support WSP implementation
- Greater cooperation within regions – donors, multilateral agencies, membership associations
- Benefits (operational, economical) being realised – need to present them more clearly





Try our NYC tap water—  
it's refreshing! Delicious! Healthy!

 Drinking tap water helps our environment, because about four of five plastic water bottles end up in the dump. You can fill your reusable bottle here.

 At a fraction of a cent per gallon, New York City tap water is one of the best bargains around. And like most public water supplies, it's constantly tested for safety.

 Shipping water—like shipping anything—uses fossil fuels and creates air pollution. If you can get it from a tap, why haul it in a truck?



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1000000000



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# Thank You

Ryan Yuen  
Director, East Asia & Pacific  
International Water Association  
*ryan.yuen@iwahq.org*

