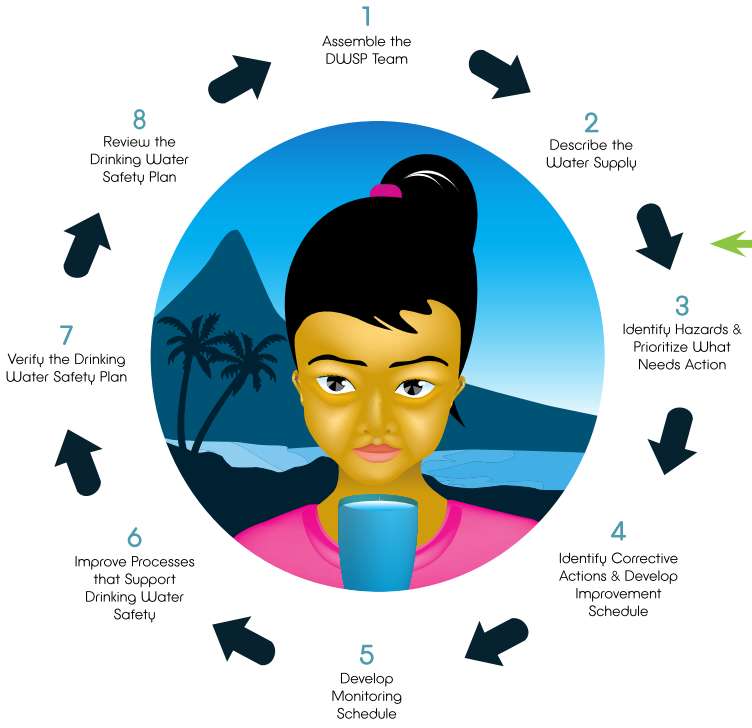
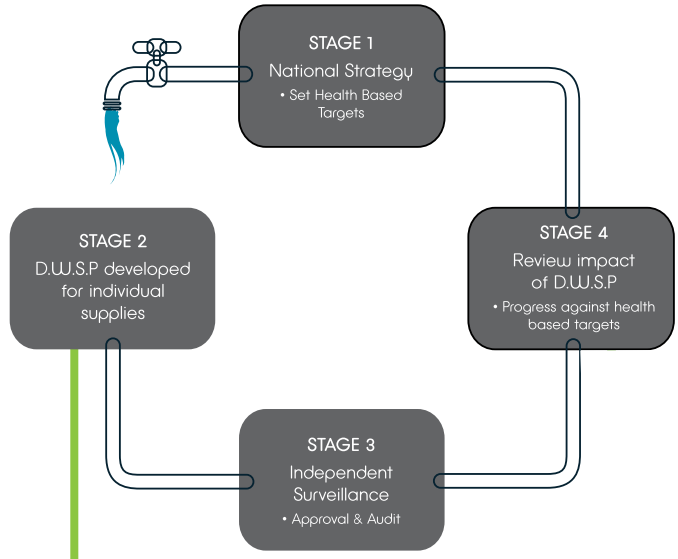
DRINKING WATER SAFETY PLANNING

Managing drinking water quality for better public health

Traditional Approach

Drinking water suppliers are usually required to verify that the quality of water supplied is in compliance with national standards or international guidelines. But, by the time tests are completed and results show that the water quality is not safe, thousands of people may have already consumed the water and become sick. Notification comes too late! Moreover even with frequent testing, the vast majority of water supplied to consumers will never be tested. Therefore an over reliance on end-of-pipe monitoring is both inadequate and can be expensive.





Stages in the Drinking Water Safety Planning (DWSP) process.

Advantages

- Better health of people through reduced risk of water-related disease
- Improved access to safe drinking water supplies
- Improved water quality and water quantity
- Promotes inter-sectoral stakeholder cooperation
- Improved stakeholders' understanding of the complete water supply chain and the risks
- Opportunities for low-cost improvements to operations and management practices identified
- Cost savings through improved efficiency
- Consumer confidence in drinking water supply
- Increased reliance on actual field inspection rather than relying just on water quality testing at laboratory

Implementing the Drinking Water Safety Planning Approach Will Reduce Disease

For the reasons above, the WHO Guidelines now recommend the development and implementation of Drinking Water Safety Plans. A Drinking Water Safety Plan is a holistic, systematic, and integrated management approach used to identify and prioritize potential threats to water quality at each step in a specific system's water supply chain - from catchment to consumer - and implement best practices to mitigate those threats and ensure quality drinking water.

Drinking Water Safety Planning is applicable to all water supply systems, irrespective of their size or complexity. This means it is applicable for large and small, urban and rural water supply systems. Implementation of the approach requires commitment and support from high-level management as there may be some financial and technical implications.

DWSP and Climate Change

"Water and its availability and quality will be the main pressures on, and issues for, societies and the environment under climate change (IPCC, 2008)."

With the increasing threats posed by Climate Change to water supply, there is a need for a methodological approach to mainstream risk management into drinking water supply and wastewater services such as through the framework provided by the Drinking Water Safety Planning concept, as changes in climate will have impacts on water security.

Key Steps

Assemble the DWSP team

Assemble team of professionals with knowledge and experience in all aspects of the water supply system, and with sufficient management authority.

Describe the water supply

A simple flow diagram can be used to describe the components of the supply. A walk through the system will ensure that nothing important is omitted.

Identify hazards and prioritise what needs action

Conduct a systematic assessment of existing and potential hazards or hazardous events. Identify whether these are under control. Prioritise them to identify areas where improvements will have most benefit to safety of supply.

Identify corrective actions and develop an improvement schedule

Identify corrective actions to manage significant risks which are currently not under control. Prepare a list of improvements required by comparing what you should have with what you actually have. Identify everything that can be acted on now (or soon) to improve matters in the meantime until the more expensive or complicated controls can be established (not all improvements need capital investment!).

Develop a monitoring plan

To assess the effectiveness of the existing control measures to verify that the DWSP is working as expected. Monitor things that will tell you when something is going wrong. Do something when the results say something is wrong (corrective actions). Do not monitor parameters you can't do anything about. Record problems and mistakes as well as how they are managed.

Improve processes that support drinking water safety

To strengthen operational, managerial or technical processes which support DWSP. Examples are water operators training, having standard operating procedures and contingency or emergency plans.

Use the Drinking Water Safety Plan

The Plan should be integrated into the day-to-day management and operation of the supply. There is no point developing a PLAN and not implementing or using it.

Review the Drinking Water Safety Plan

Review the Plan based on monitoring results or if new risks to the water supply system become apparent or if risks are no longer applicable and have completely been removed. This can be done annually or more frequently as resources permit.

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Applied Geoscience and Technology Division (SOPAC)

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Implementation in the Pacific

As part of ongoing efforts to improve drinking water safety and health, the SOPAC division of SPC and WHO are implementing the DWSP framework in selected Pacific island countries including Cook Islands, Fiji, Marshall Islands, Niue, Palau, Samoa, Tonga and Vanuatu. DWSPs have been developed for pilot water supply systems in these participating countries. The next steps include implementation and review of the Plans, and efforts to scale up DWSP to all drinking water supplies both in-country and regionally.

Contact

For further assistance or guidance and resources on developing and implementing DWSPs, please visit www.pacificwater.org or e-mail wash@sopac.org

Resources are also available at http://www.who.int/water_sanitation_health/dwq/en/

References

CDC. (2009). *Fact Sheet: Water Safety Plans: CDC's Role.* http://www.cdc.gov/nceh/ehs/Docs/Factsheets/GWASH_WSP_Fact_Sheet.pdf (date accessed: 25 January 2011)

IPCC (2008): Bates et al. (2008). *Climate Change and Water. Technical Paper VI.* Geneva, Switzerland: Intergovernmental Panel on Climate Change.

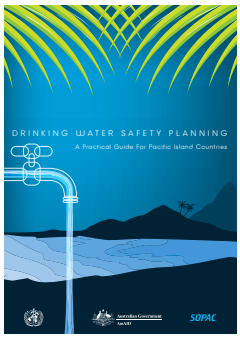
Mudaliar, M.M., Bergin, C. and MacLeod, K. (2008). *Drinking Water Safety Planning: A Practical Guide for Pacific Island Countries.* WHO/SOPAC Joint Contribution Report 193, SOPAC Secretariat, Suva.

Sustainable Sanitation and Water Management (SSWM) website http://www.sswm.info/category/planning-process-tools/programming-and-planning-frameworks/frameworks-and-approaches/wate-1

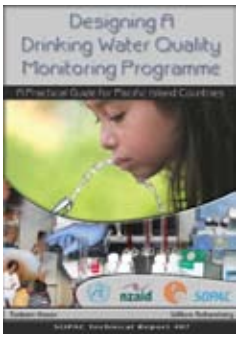
WHO and DFID. (2009). Vision 2030: *The resilience of water supply and sanitation in the face of climate change.* Geneva, Switzerland.

WHO and IWA. (no date). *Water Safety Plans: Managing drinking-water quality for public health.* http://www.who.int/water_sanitation_health/WHS_WWD2010_advocacy_2010_2_en.pdf (date accessed: 25 January 2011)

Keeping your drinking water safe - Community Toolkit



Pacific Drinking Water Safety Planning Guide



Designing A Drinking Water Quality Monitoring Programme