Water Safety Plan and Selected Case Studies

Dr. Genandrialine L. Peralta
Western Pacific Regional Office, Manila
World Health Organization

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Water contaminated by pathogenic microbes and chemicals can transmit disease

Unsafe water, together with inadequate sanitation and hygiene, is the overwhelming contributor to the 4 billion illnesses and 1.8 million deaths caused by diarrhoea every year. Around 90% of this toll is borne by children under five. Every diarrhea episode reduces calorie and nutrient uptake and sets back a child's growth and development.
Water safety can prevent waterborne diseases

- Water safety can be assured through a variety of interventions at the level of households, community, water supplier and regulator, often with an excellent cost-benefit ratio.

- WHO estimates that 94% of diarrhea cases are preventable through modifications to the environment, including increased availability of clean water.
WHO Harmonized Framework

Traditional approach
Curative, reactive

Water Safety Plans
Preventive, proactive
Framework for Safe Drinking-water

- Health-based targets
- Public health context and health outcome

Water Safety Plans
- System Assessment
- Monitoring
- Management & Communication
- Surveillance
Important Modern Concepts of WSPs

- Prevent contamination, don’t wait for it to happen
- Notification comes in time
  - E.g. chlorine residual monitoring on line
  - If residual drops a correction is applied
  - Consumers are protected
  - Same principle applies to all processes
- Risks are managed by control processes
- Use multiple barriers so that if one barrier fails the water stays safe
- Use management systems to make water safety management reliable
- Every improvement is worth it and helps improve public health
Pacific Water Safety Planning

1. Assemble the WSP Team
2. Describe the Water Supply
3. Identify and Prioritize Hazards
4. Identify Corrective Actions & Develop Improvement Schedule
5. Develop Monitoring Programme
6. Develop Supporting Programmes
7. Use the Drinking Water Safety Plan
8. Review the Drinking Water Safety Plan
WSPs Process Control

Watershed → Barrier₁ → Output WQ → Barrier₂ → Output WQ → Barrierₙ → Final Output WQ

Hazards

Consumers

Supplier

World Health Organization
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>STEP</th>
<th>RESPONSIBILITY</th>
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<tbody>
<tr>
<td>Catchment (Angat Dam)</td>
<td></td>
<td>Multiple Stakeholder (NPC, DENR, MWSS, NIA, NWRB)</td>
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<tr>
<td>Natural and Human Activity</td>
<td></td>
<td>DENR, NPC, MWSS, NWRB</td>
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<tr>
<td>Primary Storage</td>
<td></td>
<td>Utility (NPC)</td>
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<tr>
<td>Transport (Gravity flow to Ipo, Bicti and Aqueducts)</td>
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<td>MWSS, MWSI, MWCI, CPF</td>
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<td>Legal and Illegal Connections</td>
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<td>Common Purpose Facilities</td>
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<tr>
<td>Splitting of Raw Water Flow (Portal)</td>
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<td>Water Production, MWSI</td>
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<tr>
<td>Raw Water Transmission from Portal Weir to LP 1&amp;2</td>
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This document was compiled by the Palau Water Safety Plan National Steering Committee on behalf of the Ministry of Lands and Resource Development. The Ministry of Lands and Resource Development is responsible for the implementation and oversight of this plan. This plan is due for revision March 2008.
WSPs Download

Water safety plans: Managing drinking-water quality from catchment to consumer

http://www.who.int/water_sanitation_health/dwq/wsplans/en/

- WHO information products on water, sanitation, hygiene and health can be freely downloaded at:

http://www.who.int/water_sanitation_health/

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