Operation and Maintenance Network

Supporting sustainable infrastructure

Background, objectives, and activities to date

Dr. Mari Asami
Some part of the water supply facilities stopped functioning probably due to lack of appropriate operation and maintenance.
Non-revenue Water in Asian Cities (2001)

Ratio of non-revenue water in several Asian large cities exceeds 50% or more.

(Asian Development Bank, 2003)
Importance of Operation and Maintenance

- 30%-60% of water supply and sanitation services are non-operational
- O&M is essential for:
  - Cost-effective, efficient, and sustainable systems
  - Health and well-being of the community
- O&M needs to be:
  - Planned at an early stage of the project
  - Built into operational programmes
Constrains of Operation and Maintenance

- Low profile and accountability
- Low level of technical support
- Poor design of systems
- Poor management
- Lack of training
- Lack of spare parts
- Lack of finance
Examples of Inappropriate O&M
Key Issues for Improvement of O&M

- Prioritization of maintenance activity
- Stronger stress on non-revenue water (NRW)
- Investment in capacity building
- Monitoring should be continuous
- Improvement of design standards and criteria in relation to ‘Water Safety Plan’
- Improvement of accountability
- Improvement of transparency
- Community empowerment
Rationale for the OMN

- The deterioration of infrastructure assets which represents an enormous financial loss resulting in reduced asset life and premature replacement.
- An increase in the cost of operating facilities and a waste of related natural and financial resources.
- Reduces the serviceability → lowers consumer willingness to pay → lowers utility’s revenue and available budget for O&M
What is Operation and Maintenance Network?

- The World Health Organization (WHO) recognised these many challenges in the 1980s
- Constituted by experienced and knowledgeable volunteers on O&M from developed and developing countries
- Now carried on by triangular agreement among IWA, WHO and NIPH-Japan
- Collaboration between IWA/EOM specialist group
- Funded by Ministry of Health, Labour and Welfare, Japan
Scope of work of the O&M Network

- Establish and maintain a network to exchange experiences, knowledge and information
- Promote and support O&M through organization of or participation in high-level events
- Provide a platform for collection and dissemination of information including support for generating information by resource centers
- Promotion of and support to effective operation and maintenance monitoring
Scope of work of the O&M Network (contd.)

- Revision of existing O&M tools and preparation of new tools where required
- Support adaptation of instruments and tools to specific country needs
- Promotion of **country level policy formulation** for O&M ensuring its sustainability
- Contribute to **capacity building** and training in the different areas of knowledge of operation and maintenance including water safety planning and implementation
Available O&M Tools

- Tools for Assessing the O&M Status of Water Supply and Sanitation in Developing Countries
- Operation and Maintenance of Urban water supply and sanitation systems (A guide for managers).
- Leakage management and control: A best practice training manual
- Upgrading of Water Treatment Plants.
- Linking technology choice with O&M - For Low-Cost Water Supply and Sanitation.
Current Activities of the O&M Network

- O&M knowledge synthesis
- O&M advisory service
- O&M workshop series
- O&M membership, communications, etc.
Upgraded O&M Network webpage with web-based O&M Toolbox

About the O&M network

The Operation and Maintenance Network (O&M) aims to improve information and expertise exchange on the critical subject of operation and maintenance of water supply and sanitation systems. The Network collects and disseminates case studies, reference documents and tools which provide practical guidance to water professionals.

Enter network website

The abstracts of tools and case studies contained within this website are accessible to all. To make the most of the site – to download, upload and rate documents, or to join online discussions – we encourage you to register your details and join the network!
The Guidance Notes document starts with a well documented justification for the implementation of DMAs as a sustainable long-term alternative to control water loss in distribution systems. It goes on providing the conceptual framework on which DMAs are based and provides detailed explanations on how to design and implement DMAs. The author included a useful section on criteria for flowmeter selection, how to prioritize areas for leak detection and leak location, and how to deal with problem areas.
Knowledge available

Operation and maintenance of urban water supply and sanitation: a guide for managers
Author(s): Jone Hueh
The World Health Organisation (WHO)
PUBLICATION DATE: 1994
Click here for the abstract

Tools for assessing the O&M status of water supply and sanitation in developing countries
Author(s): Andrew Cotton
The World Health Organisation (WHO)
PUBLICATION DATE: 2000
Click here for further information

Leakage management and control – a best practice training manual
Author(s): Malcolm Harley
The World Health Organisation (WHO)
PUBLICATION DATE: 2001
Click here for further information
Case Study of Promoting Operation and Maintenance

Capacity Building for Water Supply System in Phnom Penh, Cambodia
Rehabilitation and expansion of water supply capacity in PPWSA

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<thead>
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<th>Year</th>
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<th>2005</th>
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<td>Connections</td>
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<td>Network</td>
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<td>1,230km (new)</td>
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<tr>
<td>Production</td>
<td>65,000m³/d</td>
<td>235,000m³/d</td>
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<tr>
<td>NRW</td>
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<td>11%</td>
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<tr>
<td>Metering</td>
<td>12%</td>
<td>100%</td>
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<tr>
<td>Collection</td>
<td>48%</td>
<td>100%</td>
</tr>
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(Cheea, 2004)
Six Elements for Sustainable O&M

Water Source Management

Monitoring and Review

Appropriate Treatment

Capacity Development

Good Management (incl. finance)

Distribution (water loss management)
NIPH & IWA partnership

- In 2006 NIPH and IWA developed a partnership where IWA would function as the secretariat of OMN
  - IWA’s specialist group on Efficient Operation and Management (EOM) provided technical support to OMN members
  - EOM tools were assessed for applicability in low and middle income countries assessed the applicability of EOM tools
  - Network has and will continue to organize several global, regional and national workshops
  - Provide direct support to water agencies in developing countries
  - Promote the need for effective O&M throughout the sector
Let's Register!

Register Details / Update Profile

By registering your details on the O&M website you become part of a global community of policy-makers, consultants, practitioners, researchers, and any sector professionals interested in operation and maintenance. Registered users can browse, download and rate tools and case studies and make their own submissions through clicking on 'Update Toolbox'. Registered users will also receive regular email updates including the latest submissions for O&M network. Complete your details and submit them. Note that you will need to wait for a confirmation email before you can make full use of the website.

Title:  
Forename(s):  
Surname:  
Date of Birth:  
Company:  
Job Title:  
Emails:  
Username:  
Password:  
Confirm Password:
Thank you for your attention

Feel free to access O&M Network website:
http://www.niph.go.jp/soshiki/suido/omn/index.html
(http://www.operationandmaintenance.net/

E-Mail: omn@niph.go.jp (omn@iwahq.org)