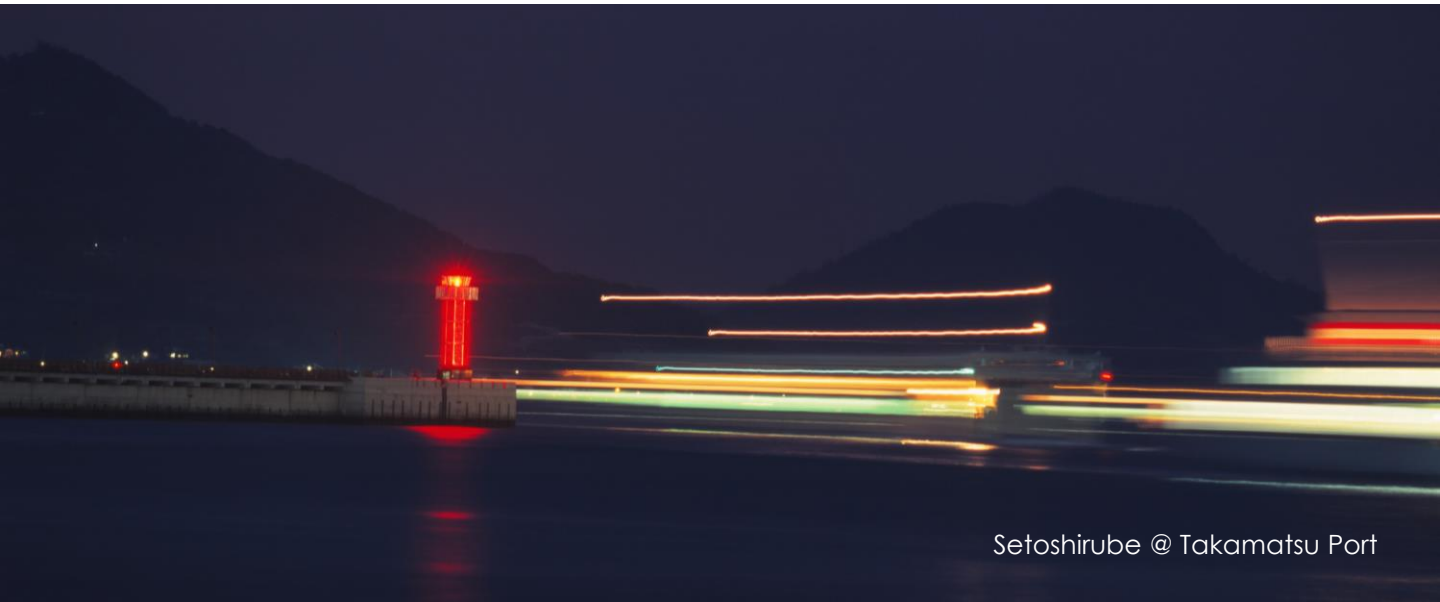
Water Associations Meeting

2017 in Takamatsu

Thursday, 26 October, 2017
Meeting room no.55, Sunport Hall Takamatsu

Program Overview

Time	Speaker & Association	Title
09:30-09:35	**Mr. Takamasa ICHIMURA** Japan Water Works Association (JWWA)	Opening Remarks
09:35-09:50	**Mr. Masao SHIBUYA** Japan Water Works Association (JWWA)	Activities of JWWA
09:50-10:05	**Mr. Yang-Long WU** Chinese Taiwan Water Works Association (CTWWA)	The Issues and Challenges of CTWWA
10:05-10:20	**Mr. Dayanand PANSE** Indian Water Works Association (IWWA)	Challenges and Opportunities in India's Water Sector and Role of IWWA
10:20-10:35	**Mr. Tae-Yong CHOI** Korea Water and Wastewater Works Association (KWWA)	Water Research Fund for Water Utilities
10:35-10:50	**Dato' Ir. Noor Azahari bin Zainal Abidin** Malaysian Water Association (MWA)	Water Associations Meeting
10:50-11:05	**Coffee Break**	
11:05-11:20	**Mr. Erlan HIDAYAT** PERPAMSI (Indonesia Water Supply Association)	
11:20-11:35	**Mr. Chompol CHOKEPONGUEDOMCHAI** Thai Waterworks Association (TWA)	Thai Waterworks Association (TWA)
11:35-11:50	**Mr. Carl RADFORD** Water Services Association of Australia (WSAA)	Water Associations Meeting
11:50-12:05	**Ms. Sushmita MANDAL** International Water Association (IWA)	



Setoshirube @ Takamatsu Port

JWWA Annual Conference (Takamatsu City)
Association Meeting

October 26th, 2017

Activities of JWWA

Masao SHIBUYA
Director of International Division, Training & International Dep. ,
Japan Water Works Association

★Agenda★

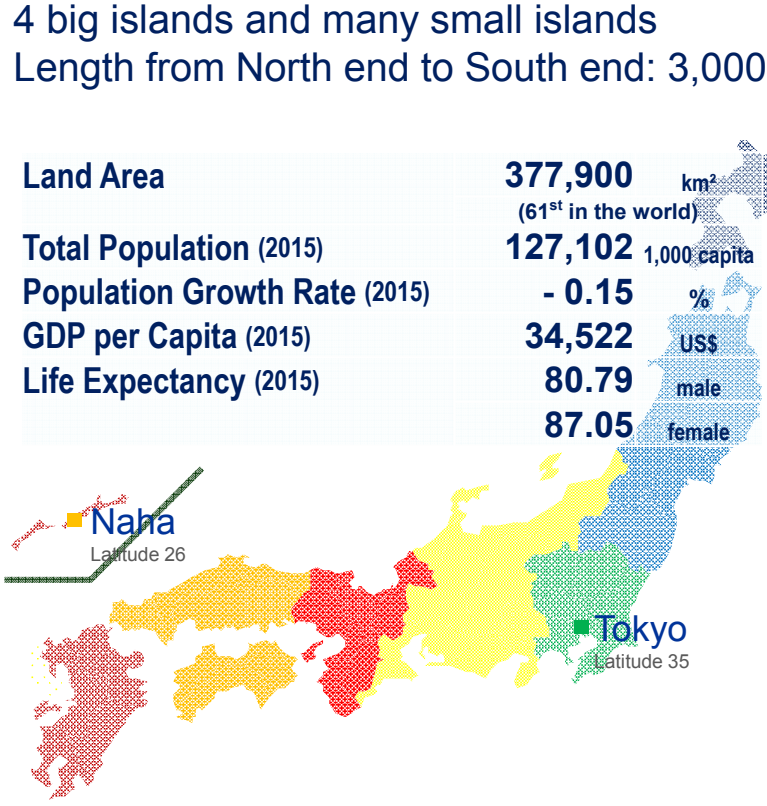
1. Water Supply in Japan
2. Activities of JWWA
3. Proposals at IWA World Water Congress

Water Supply in Japan

General Information

4 big islands and many small islands
Length from North end to South end: 3,000km

Land Area	**377,900** (61st in the world)	km²
Total Population (2015)	**127,102**	1,000 capita
Population Growth Rate (2015)	**- 0.15**	%
GDP per Capita (2015)	**34,522**	US$
Life Expectancy (2015)	**80.79**	male
	87.05	female



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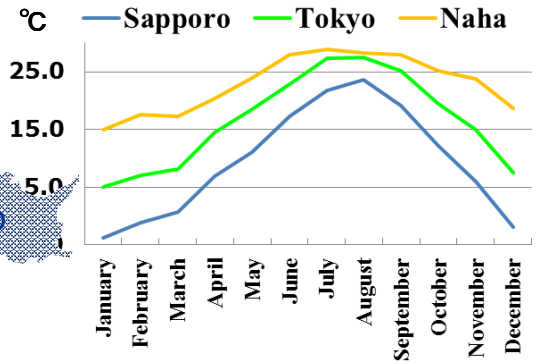

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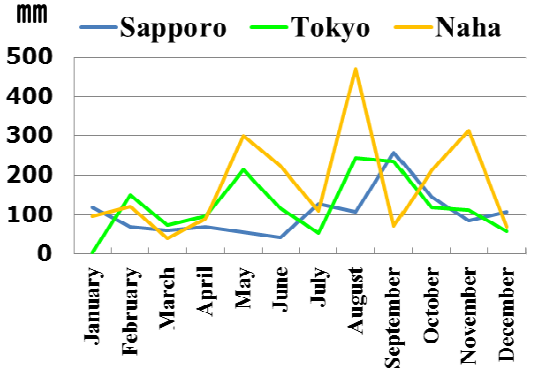
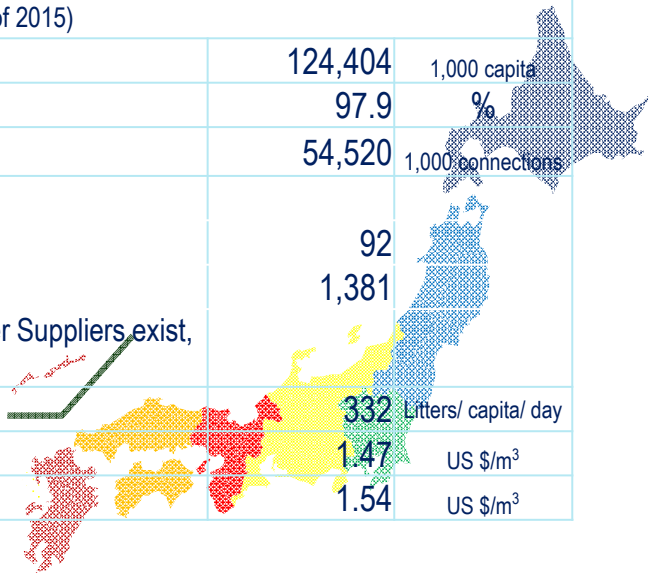


Water Supply in Japan

- Water Supplier: Local Governments
- Regulator: Central Governments
  Ministry of Health, Labour and Welfare approve the license to supply water and regulate water utilities by Waterworks Law.
  Other ministries also regulate water utilities by water related law.
- Water tariffs are determined in the councils of Local Governments.

Basic Statistics (as of 2015)		
Water Supply Population	124,404	1,000 capita
Coverage Ratio	97.9	%
Service Connections	54,520	1,000 connections
Number of Water Utilities (Local Governments)		
Bulk Water Suppliers	92	
Water Suppliers	1,381	
In addition to above utilities, 5,629 Small Scale Public Water Suppliers exist, supply populations of which are less than 5001.		
Average Water Consumption（including industrial use）	332	Litters/ capita/ day
Average unit cost per cubic meter	1.47	US $/m^3
Average unit tariff per cubic meter	1.54	US $/m^3



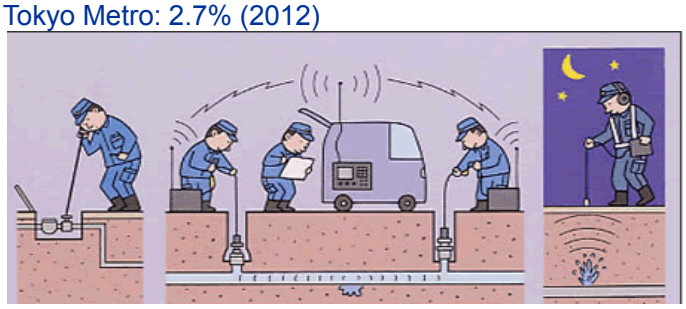
Strengths of Water Utilities in Japan

High-level Water Quality

Drinkable Tap Water

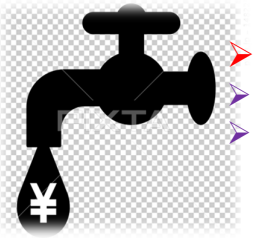
Efficient Water Distribution System

Water Leakage Ratio: 7.36% (Japanese Average)
Tokyo Metro: 2.7% (2012)

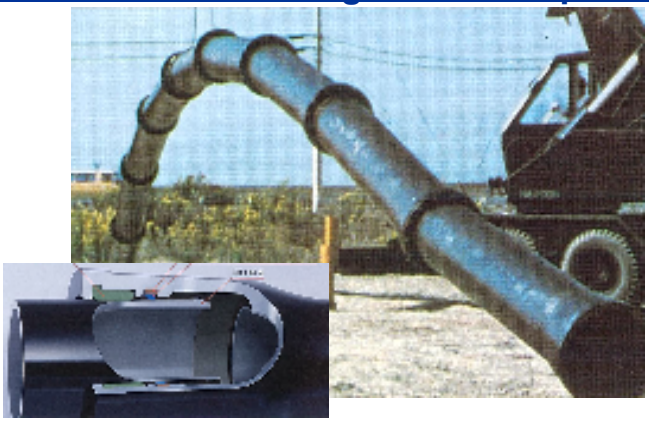


Reasonable Price

- Average of monthly consumption expenditure in a household: 296,336 JPY (2,641.24 US$)
- Average of monthly water tariff in a household 1,993 JPY (17.77 US$)
- **Affordability: 0.7%**
- Electric: 9,472 JPY (84.43 US$)
- Gas: 4,972 JPY (44.32 US$)



Resilient Facilities against Earthquake



Issues of Water Utilities in Japan

■ Financial Deterioration (Revenue Reduction)

Population declining
Decrease of Water Consumption per Capita
Decrease of Grants from Central Government

■ Aging Pipes, Aging Facilities

Pipeline renewal ratio is decreasing because of the financial deterioration

Rust of Aging Pipe

■ Earthquake resistance

Rate of the earthquake-resistant facilities is only about 30%

■ Decreasing of Highly Skilled Workforce

Decrease in the number of staff because of Financial deterioration of municipal government
Retirement of highly skilled workforce
Bad-balance of population pyramid

Water Leakage by the Earthquake

■ Vulnerability of Small Scale Water Utilities

70% is Small Scale Water Utility.
Vulnerabilities of Finance and Personnel

Association Meeting
October 26th, 2017

Activities of JWWA

What's JWWA?

- Established by Water Utilities in 1904
- Over 100 years History
- Non-profit corporation to contribute to public health

Memberships

- **Cooperate Members (1,355)**
  - Water Supply Utilities
  - 95% of Japanese Water utilities
- **Individual Members (395)**
  - Professors, Researchers, Utility Staffs etc.
- **Associate Members (563)**
  - Private Companies (Manufacturer, Consultants etc.)

Activities of JWWA

■ **Improvement of the Environment Surrounding Water Supply**
Lobbying Activities against Central Governments and members of the Diet
Public Relations to the nation to inform the seriousness of aging facilities, etc.

■ **Improve the Level & Quality of Water Supply**
Publishing Various guidelines
Standardization, Inspection & Certification Services
Capacity Building (Training Course)

■ **Information Gathering and Transmission**
JWWA Journal
Various Report
Statistics on Water Supply
International Activities

Recent Topics of JWWA Activities to Solve Issues of Water Utilities

- **Lobbying Activities**
  To Expand Budgetary Frame, etc. against Central Governments
- **Publishing "Guideline for Tariff Revision"**
  Not only the method to calculate tariff level and tariff table, but also the measure against city council which decide tariff
- **Promotion of Consolidations and Public-Private Partnerships**
  Launched "Consolidation & PPP Platform"
  Transferring Experience & Knowledge of consolidation or PPP from advanced utilities to considering utilities
- **Nationwide Emergency Response Drill**
  Verification of "JWWA Mutual Assistance System in Case of Disaster (based on JWWA Branch System)"
- **IWA World Water Congress & Exhibition**
  Working as secretariat of Host Country Committee

Association Meeting
October 26th, 2017

Proposals at IWA World Water Congress

IWA World Water Congress & Exhibition 2018

Shaping Our Water Future

16-21 SEPTEMBER 2018, TOKYO, JAPAN

Host Country Committee (HCC)

Japan Society on Water Environment
Bureau of Waterworks Tokyo Metropolitan Government
Bureau of Sewerage Tokyo Metropolitan Government
Japan Water Works Association
Japan Sewage Works Association

IWA World Water Congress & Exhibition 2018

Period: 16-21 September 2018 **Venue: Tokyo Big Site**

Expected Participants: 6000

Number of Abstract Submission: 1,600 (As of 13 October)

25% of themes are "Water Utility Management"

Proposal plan of HCC

- **HCC Forum Theme**
  - Disaster Countermeasure
  - Resilience
- **Huge Japan Pavilion**
  - Approx. 1000 m^2
  - More than 60 companies
- **Other Side Events**

Call for Participation of Water Professionals

Proposals at IWA WWC&E 2018 by JWWA

1. **Two Workshops on Water Utility Management**
   - Invite speakers from your Associations
     (AWWA, CTWWA, IWWA, KWWA, MWA, PERPAMSI, PWWA, TWA, WSAA, IWA, JWWA)
   - Cover the Speaker's Registration Fee of IWA WWC&E
     (1 speakers from each association)
2. **Association Meeting**
   - Continue face-to-face relationships
   - Enhance Collaboration
     Construct the Relationship to Exchange Basic Information
     (Statistical data, etc.)
   - Association Dinner after Meeting

Workshop Outline Proposal (A)

Improvement of Service Level of Water Supply and Appropriate Water Tariff Level
- Towards Sustainable Water Supply -

Appropriate tariff settings and tariff collection are fundamental to achieve the sustainable water supply. The achievement of both enable reinvestment in the facilities and construct the sustainable cycle.

In this workshop, we will introduce the measures to secure appropriate tariff levels and measures taken to improve the collection rate in each country, and provide the information to the countries with similar problems

Workshop Outline Proposal (B)

Efficient Management of Water Supply by Introducing Public-Private Partnership

Improving efficiency of water supply management is an essential issue for sustainable water supply. By pursuing efficiency, we will be able to provide high quality water service with reasonable cost.

In this Workshop, we explore the efficient management patterns according to the circumstances from case studies of Public-Private Partnerships in each country.

Please give us your opinion

IWA Workshop

- Possibility of Participation by your Association (Country)
- Workshop that wishes to participate
- Opinion about Planning Proposal

Association Meeting

- Possibility of Participation by your Association

Information Exchange on Statistics

- Items of Statistics

Thank you for your time.

Masao SHIBUYA
Director of International Division, Training & International Dep.
shibuya@jwwa.or.jp

The Issues and Challenges of CTWWA

Yang-Long Wu
Secretary General
Chinese Taiwan Water Works Association

outline

- Fund support from government
- Try-out DIP with NS joint in Taipei
- New Testing and Inspection Laboratory
- JWWA/WRF/CTWWA Water System Seismic Conference
- International Activity

Fund support from government (1)

- Government budgets (2017-2024) :
  - US$80 billions on mitigation and adaptation strategy for climate change.
- The Projects includes:
  1. Water policy reforms e.g. Pricing mechanisms
  2. Building smart water supply systems
  3. Efficient water use and water conservation
  4. Rainwater harvesting
  5. Integrated river management
  6. Construction of storage
  7. Recycling of wastewater
  8. Building desalination plants, etc.
- CTWWA do as an advisor to provide the expert opinions and to assist in the review

Fund support from government (2)

Water Resources Agency, Ministry of Economic Affairs support US$ 6.7 millions (2017-2020) to 4 water utilities to improve or build the following systems up toward Smart Water Systems

- GIS
- SCADA
- AMR
- Smart meters
- Remote control systems, etc.

- CTWWA also do as an advisor to provide the expert opinions and to assist in the review

Try-out DIP with NS joint in Taipei

- Preventing liquefaction making the water supply system damaged when earthquakes.
- Taipei Water Department will try out DIP with NS joint (NS-DIP) when changing aged pipes in ease-liquefaction area.
- The materials and technology of NS-DIP will be imported from Japan.
- TSS do as a consultant on this project to review it and train the local contractors and technical staffs of TWD

New Testing and Inspection Laboratory

- The Testing and Inspection Laboratory of CTWWA is certificated by Taiwan Accreditation Foundation.
- For providing the best services for water industries and develop the testing and inspection business, the laboratory should expand the site and increase the equipment.
- New Testing and Inspection Laboratory with 611m^2 base area and 625m^2 usable house area that will be opening in 2018.

JWWA/WRF/CTWWA Water System Seismic Conference

- The 10th JWWA/WRF/CTWWA Water System Seismic Conference was held on 18th -20th, Oct, at National Center for Research on Earthquake Engineering In Tainan, TAIWAN
- 3 keynotes
- More than 30 papers from US, JAPAN and TAIWAN
- More than 120 participants

International Activity

- Attend 2017 IWA-ASPIRE Conference and Exhibition on 11th-15th, Sep. in Kuala Lumpur, Malaysia.
- Declaring to apply 2021 IWA-ASPIRE conference and exhibition in Kaohsiung, Taiwan
- Please give us your support.


Thanks for your listening
CTWWA

Challenges and Opportunities in India's Water Sector and Role of IWWA.

Presented by:
Dayanand Panse
Director, International
Indian Water Works Association.

Water Associations Meeting
JWWA General Assembly and Research Conference
26 October 2017

What is IWWA?

- Founded in 1968
- Purpose was to bring Water Professional together for the purpose of improvem ent of the water and sewerage infrastructure of India,
- work to eliminate water borne diseases, improve water quality, preserve wate r resources
- Today
  - Foremost and only water association in India.
  - Membership and knowledge organization, making it easier for water professionals to excel with confidence
  - Helping decision makers and political Leaders…to cater to citizen's needs of water and sanitation and treatment and management waste water.
  - Education, Conferences, Publications, Advocacy, Standards, Manuals, Net working, Career Advancement.

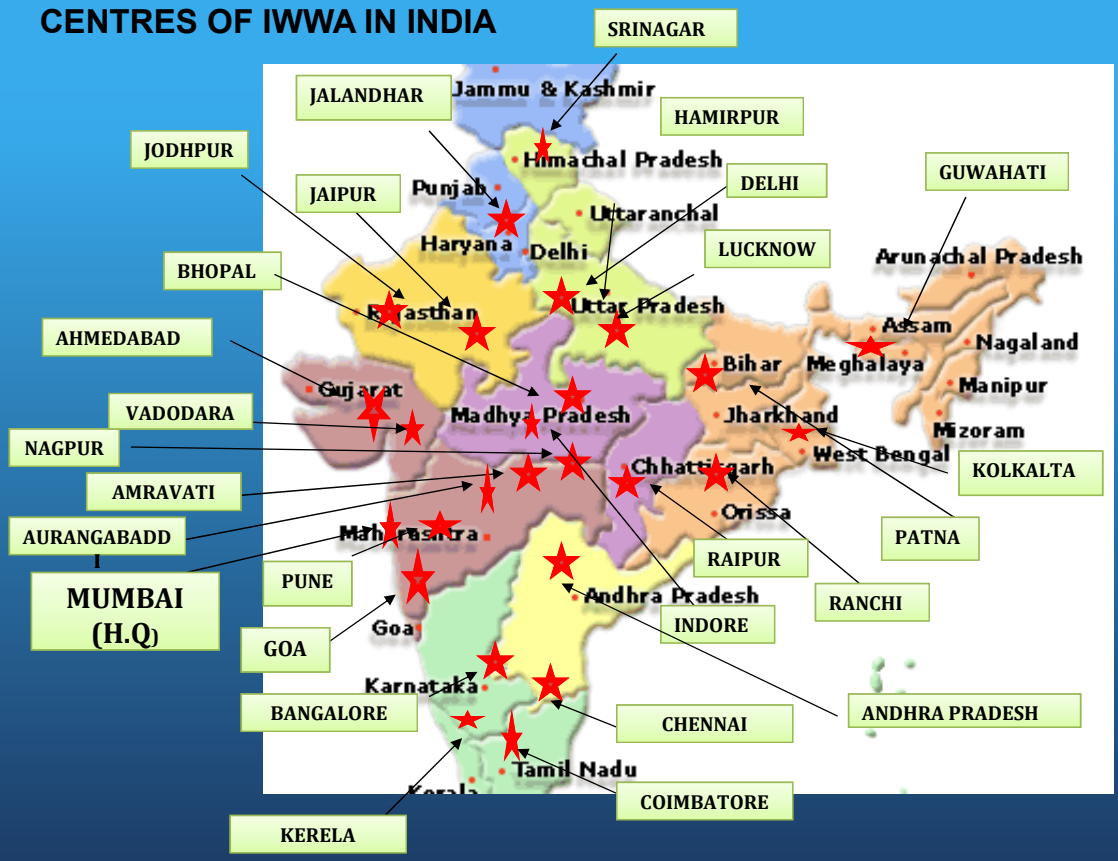
IWWA In brief

- Registered under society's act
- Membership over 10,000
- Special Focus on water, wastewater, reuse and recycle
- Education of professionals and operators
- Representation with policy makers
- Professional networking and growth

IWWA and Organizational Structure

- IWWA has strong council of Management .
- Head Office in Mumbai with 34 centers all over India.
- It is headed by President and have 5 different directorate.
- Technical Journals for research papers .

CENTRES OF IWWA IN INDIA

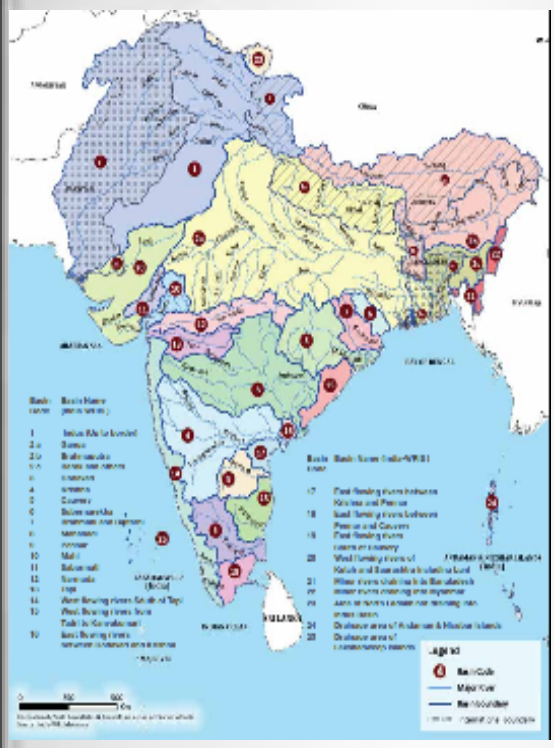


The dissemination of knowledge gained through its common programs, with these organizations, and vide its annual conventions, and with the close proximity with administrators, IWWA has been advocating this cause on continuous basis.

Indian water Works Association (IWWA), is therefore committed to facilitate the pursuance of the common interest of uninterrupted water supply to these three sectors, which is no doubt the “Need of an hour", to maintain the

LIFE CYCLE OF THE WATER....

India: The water can



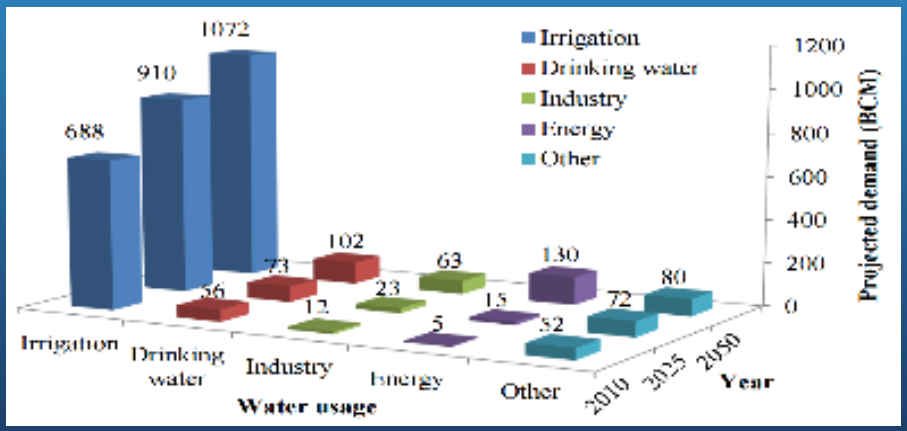
More than 225 rivers, groundwater, 7,500 km long coastline, lakes, ponds and springs

Why then the movement towards water scarcity by 2025?

Future of Water in India

- Domestic and Industry will account for 85% of increased demand by 2050 (IWMI, 2007)
- Demand for water in energy sector will also increase substantially

Sector Wise Projected Water Demand



Source: India Country Report, UN Water, AIS

Challenges Ahead

- Growing concern on availability of freshwater resources is raising many questions pertaining to drinking water availability and economic as well as socioeconomic development of the nation.
- Relentless pressure is mounting on water resources due to population growth, rapid urbanization, large-scale industrialization and environmental concerns in almost everywhere.
- The increased pressure is spilling over the groundwater resources because of the hydrological uncertainty, growing groundwater contamination problems and excessive and unscientific groundwater exploitation.
- The time has come to have a retrospect view on the water use and misuse to take serious viewpoints towards water management

Challenges Ahead

- Water demand for various purposes is significantly increasing because of increased population, urbanization, changing lifestyle and industrial growth.
- Wastewater generation is increasing manifold and managing wastewater is becoming a major challenge as waste disposal is no longer an easy task for industries
- Due to limited availability of freshwater from the river, the dependence on groundwater resources is increasing.
- Urban growth changes population and land use dynamics that often lead to unplanned and exorbitant groundwater exploitation and poor groundwater management, which in turn impacts adversely as evident in terms of declining groundwater level and groundwater quality deterioration.
- Management of groundwater resources becomes further complicated when the hydrological uncertainties, climate change and groundwater contamination are encountered.

FAST GROWING INDIAN CITIES

Category	City
10 Million+ (3)	Greater Mumbai, Kolkata, Delhi
5 – 10 Million (3)	Chennai, Bangalore, Hyderabad
3- 5 Million (2)	Ahmadabad, Pune
2 – 3 Million (5)	Surat, Kanpur, Jaipur, Lucknow, Nagpur
1 – 2 Million (22)	Patna, Indore, Vadodara, Bhopal, Coimbatore, Ludhiana, Kochi, Visakhapatnam, Agra, Varanasi, Madurai, Meerut, Nasik, Jabalpur, Jamshedpur, Asansol, Dhanbad, Faridabad, Allahabad, Amritsar, Vijayawada, Rajkot

35- million plus cities/ urban agglomerations
Almost 800,000 more in cities/week.

Sustainable Technologies for Water Management

- Groundwater recharging through rainwater harvesting
- Groundwater recharge using wastewater
- Groundwater recharge through storm water drainage
- Rehabilitation of existing surface water bodies
- Optimizing river flood plain storage
- Exploring new groundwater storages in flood plains of rivers and their canal commands
- Integrated water resources management
- Utilization of recycled wastewater
- Utilization of construction dewatered draft
- Water conservation and recharging lagoons
- Groundwater remediation

Initiatives by IWWA.

- Sensitization of ULBs for
  - Asset Management.
  - Rehabilitation of old pipelines
  - Advance techniques for leak detection
  - Reuse and recycle of treated water
  - Natural treatment processes

  Capacity Building.

  Publication of case studies on best practices.

  Manuals on Waster water and water treatment technologies.

Possible areas of Co-operation :

- Exchange of Knowledge for
  - Reliable meters of AMR type.
  - 24x7 water supply and NRW.
  - Advance GIS mapping
  - Public sanitation systems.
  - Waste Water Treatment systems.
  - Joint Organization of technical trainings.


Thank You

Water Research Fund for Water Utilities

Choi Tae-Yong, Ph.D
Korea Water & Wastewater Works Association

CONTENTS

Step.1 Background and Necessity

Focus on commercialization technology development

Limited execution of practical research tasks

Study of water treatment in progress

Inefficiency, e.g., redundant research tasks

- Necessity for research to investigate current problems and to lead revision of water act
- Joint operation system required for using accumulated technology of each utility
- Necessity for objective, continuous and practical result

Step.2 Effect of Project

Maximized synergy effect

Practical water charges

Competitive water supply business

Improved institution and reducing budget

Step.3 Joint Research Association

- **Fund Rasing Members : 11 authorities**

Seven special metropolitan city facilities

One special island government

Three public institutions

Step.3 Joint Research Association

- Annual budget : 500 million won (US$ 0.5 million)
  proportionally revenue water ratio

Project discovery and selection : discover projects by collecting opinions of participants in the Association.

Step.3 Joint Research Association

○ Function of Each Authority

Joint Research Association

- Specify direction of research tasks
- Discover research subject
- Participate in advisory committee for each research task
- Examine and review details of discussion about research
- Secure research project cost

KWWA

- Operate Research Association
- Manage research tasks
- Execute budgets
- Host meetings.
- Create and distribute reports

Research Team

- Execute research tasks
- Create research result report

* Organize research teams depending on tasks

Step.4 Current Research Tasks

○ Among 22 tasks, 9 manuals created, 8 related policy proposal in progress

Category	Tasks (including redundant tasks)	Remarks
Post on homepage and distribution	17	Homepage of KWWA
Report	17	-
Manual	9	-
Policy proposal and application	8	Act, notice, water facility design standard (revised in 2017) (including those in progress)
Seminars, and programs	2	Develop programs for assessing performance of water supply pipe network

Step.5 Research Task List

- Among 22 tasks, 17 tasks completed and 5 in progress

(unit : USD)

Category	Research Tasks	Cost
2013	Create master plan for improving water supply facilities and manual for improving water supply pipeline.	177,000
	Create manual for washing water supply pipeline and manual for managing cleaning water.	89,000
	Study method for evaluating activated carbon and creation of manual.	45,000
	Study drinking water quality appropriate for Korea.	18,000
2014	Study socio-economic effect of executing emission trading system in water supply sector.	59,000
	Study method for removing dissolved ozone in advanced water treatment.	25,400
	Create manual for inspecting water supply facilities.	42,000
	Study guideline for building uninterrupted water supply system.	83,400

Step.5 Research Task List

- Among 22 tasks, 17 tasks completed and 5 in progress

(unit : USD)

Category	Research Tasks	Cost
2015	Study method for creating guideline for direct connection of water distribution system, and improving regulations.	79,550
	Study guideline for disposing unused water supply pipe, and political direction.	42,000
	Study regulations, design, operation and management guideline for optimized management of effluent treatment facility in wastewater treatment plants.	86,600
	Study creation of manual for maintaining valves for water supply.	83,100
2016	Study creation of manual for basic investigation of pipeline and guidelines for old pipe rehabilitation technique.	167,850
	Study method for calculating and managing economic quantity of water flow.	67,200
	Study creation of manual for coping with droughts, e.g., water supply adjusted in each step for minimum quantity of water supply in emergency.	58,800
	Study method for maintaining efficient block system.	75,600
	Study method for improving polluter-pay-principle system.	42,000
	Study method for securing human resources specialized in water supply.	42,000

Step.5 Research Task List

- Among 22 tasks, 17 tasks completed and 5 in progress

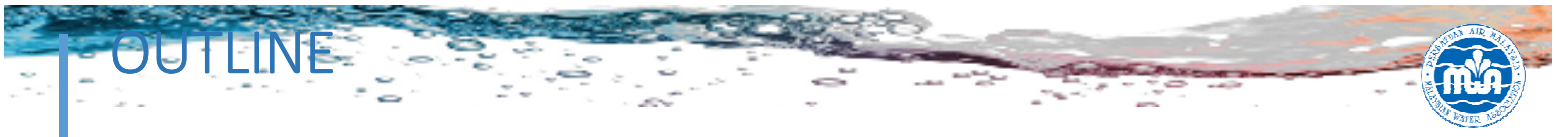
(unit : thousand, USD)

Category	Research Tasks	Cost
2017	Study method for efficient management by improving total cost in local water supply facility.	84,000
	Develop WSP appropriate for Korea to propagate water safety management technique, and study method for national regulations.	88,300
	Water treatment system to comply with allowed discharge guideline in effluent treatment facilities. Study method for creating management guideline.	86,600
	Improve regulations and develop technology for equalizing dissolved chlorine in indoor pipes for customers.	155,800

Thank you

WATER ASSOCIATIONS MEETING

By
Dato' Ir. Noor Azahari bin Zainal Abidin
Deputy President, The Malaysian Water Association



OUTLINE

- Non Governmental Organization (NGO) in Malaysia and its' roles.
- The Malaysian Water Association (MWA)
- MWA Roles With the Water Operators/Public

Non Governmental Organization (NGO)

Non-governmental Organization (NGO)

Broad definition of NGOs and their roles

N
G
O

Non-profit entities

NGOs, are generally defined as non-profit entities independent of governmental influence

Environmental, Social & Human Rights

NGO activities include, but are not limited to, environmental, social, advocacy and human rights work

Promote sustainable change

NGOs work to promote social or political change on a broad scale or very locally and always aimed at promoting a sustainable environment despite having limited resources

Improve community's participation

NGOs play a critical part in developing society, improving communities, and promoting citizen participation

Non-governmental Organization (NGO)

NGOs in Malaysia's Water Industry

1. **Malaysian Water Association (MWA),**
2. **SWAN,** AWER, **Malaysian Nature Society (MNS),**
3. **Environmental Protection Society of Malaysia (EPSM**),
4. World Wide Fund for Nature (WWF),
5. **Sahabat Alam Malaysia (SAM),**
6. ENSEARCH, **Penang Water Watch,** Forum Air Malaysia**,**
7. **MyWP**, Global Environmental Centre (GEC),
8. **Malaysian Society of Marine Sciences (MSMS),**
9. Sabah Wetland Conservartion Society,
10. **Sustainable Develeopment Network Malaysia (SUSDEN),**
11. Wetlands International (Malaysia). etc

MALAYSIA WATER ASSOCIATION

MALAYSIAN WATER ASSOCIATION

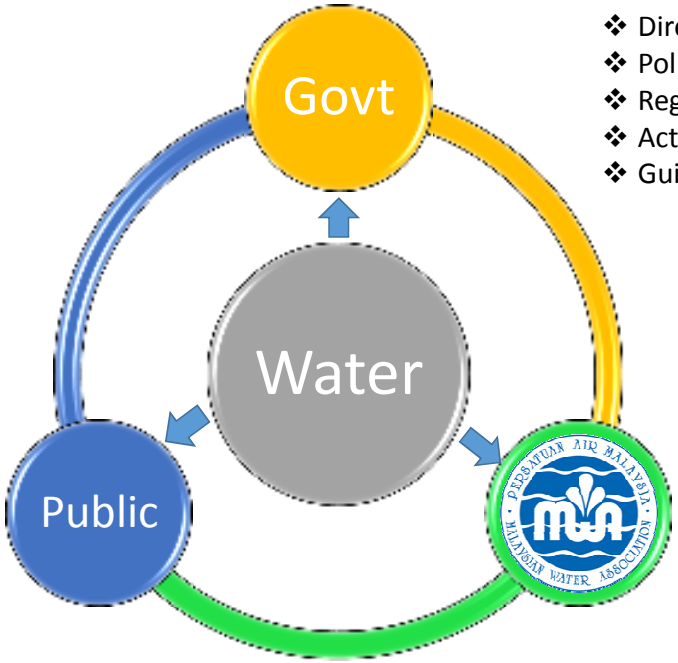
ACTIVITIES

- General informative and interactive sessions on water issues
- Social and networking events
- Mentoring and leadership opportunities
- Presentation/public speaking opportunities and career development sessions
- Access to volunteer and community outreach programmes
- Conference, Seminar and Workshop
- Joint events and links to other organisations

Malaysian Water Association is founded in 1988
Managed by an elected Council on an entirely voluntary, non-profit basis consisting professionals with experiences in the water and wastewater sector

MALAYSIAN WATER ASSOCIATION

The roles MWA plays with the Public and the Government



- Directions
- Policy
- Regulation
- Act
- Guideline

- Reliability
- Quantity
- Quality
- Efficiency
- Reasonable Tariff

- Professional Inputs
- Public Awareness
- Value Management
- Fair Cost of Water
- Check and Balance

MWA's role with the Water Operators / Public

Water Supply Operational Issues:

Pollution
Its Impact

Source of Raw Water
Example of Issues / Challenges

State's Responsibility in Managing Raw Water Source

- Federal has the role in managing treated water but very much still depending on state's role in managing the source
- State need to mitigate problems at source

Contaminated River

Resulting in closure of water treatment plants and disruption of supply

Unprotected Catchment

Leads to poor dam quality

Roles of all Parties:

1. MWA: Awareness, Develop Policies
2. State Government: Enforcement and Regulation
3. Public: Alert

Source of Raw Water

Example of Issues /Challenges Johor

The series of photographs shows the reduction of water stock in Linggiu reservoir. With the changes surrounding the catchment, weather changes likely to occur. The prolong draught can reoccur again

The photograph depicts the massive deforestation taking place around the Linggiu Reservoir, photograph taken in 2016 (Source is Google Map)

Source of Raw Water

Example of Issues / Challenges - Johor

Sg. Johor

- Mining Activities
- Discharge of psticides without control

Sembrong Dam

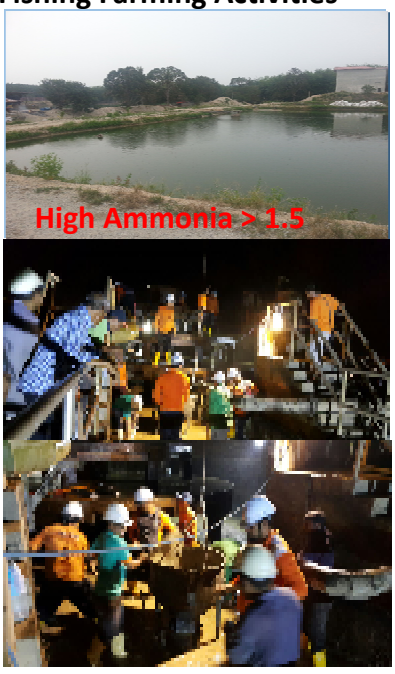
- Discharge from Pig Farms
- Activities within catchment area , pesticides have created algae issues to the existing water treatment plant leading to closure and increase in treatment cost with the frequent need to back wash and higher chemical consumption. This has also lead to injection of improvement works that uses fund- finally for public to incur through the full cost recovery is not fair.

Source of Raw Water

Example of Issues / Challenges - Melaka

Mining Activities

Fishing Farming Activities



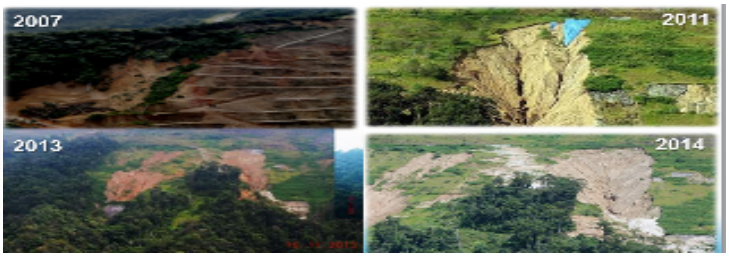
Agricultural Activities

Source of Raw Water

Example of Issues / Challenges - Perak

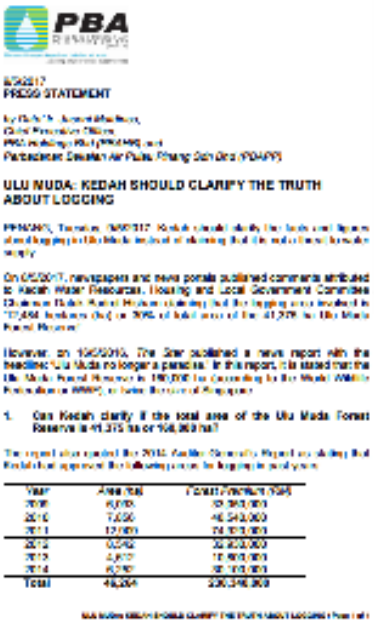
Sg. Perak & Sg Kinta

Quality affected due to uncontrolled developments resulting in river water quality averaging 80-100 NTU



Source of Raw Water

Example of issues / Challenges – Penang: Ulu Muda



PBA

PRESS STATEMENT

ULU MUDA: KEDAH SHOULD CLARIFY THE TRUTH ABOUT LOGGING

1. Can Kedah clarify if the total area of the Ulu Muda Forest Reserve is 41,375 ha or 106,863 ha?

'Come clean on logging in forest reserve'

Penang urging Kedah to clear the air over discovery of new trail near Muda Dam

Fresh logging at Ulu Muda water catchment area

Cutting off our water supply

17

Source of Raw Water

Example of Issues / Challenges - Pahang

Sg. Bilut

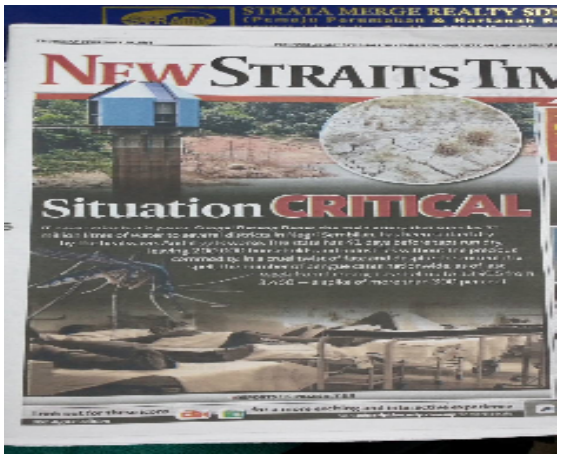
Sg Tras

Sg. Klau

18

Source of Raw Water

Example of Issues / Challenges - Kelantan



Sustaining Water Resources – Pollutants of Concern

Point Source Pollution

Regulated under EQA 1974, Effective?

Non-Point Source Pollution

New Legislation?
New Innovative technologies and controls?

Emerging Pollutants

Research Needed?

MWA Bridges Technology Providers with Water and Sewerage operator for better operating efficiency

1. Technology Talks
2. Technology Visits
3. Asia Water
4. Malaysia Water
5. Pilot Projects
6. IWA Aspire Conference.
7. Awareness Programmes

Concluding on MWA's role as a the Prime NGO for the Water Industry

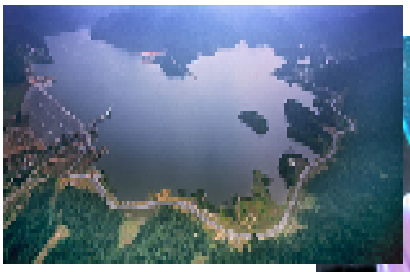
Contribution of MWA's Role

- MWA has contributed significantly to the water sector by undertaking research, conferences, forums, dialogues, trainings and publication on water, environment and development related issues and bringing them to the forefront of policy makers and the public.
- MWA has provided much needed institutional support to government specific to the local needs such as leading initiatives to establishment of the regulatory framework, supporting partner in the pilot project on the IWRM on Sg Selangor in early 2000's, Save Water Campaign with KeTTHA and Span, input to KETTHA on the Water Blueprint, on WDM with Akademi Sains Malaysia, SDG preliminary dialogue with KETTHA,
- Besides training, MWA had in various times also promote discussion, debate, advocacy and awareness about environmental issues (Sludge Disposal), natural resource conservation (views on Catchment protection) and the restoration of ecosystems.
- MWA had played some role in sensitize policy makers about the local needs and priorities and promote eco-friendly practices.
- Fostering youths with sustainability information as they are the future leaders.

Collaboration With Asian Water Associations

Possible Collaboration

- Sharing experience, knowledge, skill and synergise of expertise
- Business networking and institutional strengthening
- Capacity building and training



THANK YOU

SUSTAINABILITY THROUGH ZERO MANAGEMENT CONCEPT FOR TOTAL RECYCLE AND ENERGY SAVINGS

Break(15 min)

PERPAMSI
INDONESIA WATER SUPPLY ASSOCIATION
TIRTA DHARMA

ON THE JOB TRAINING PROGRAM
helping performance improvement of Indonesian water utilities

Water Associations Meeting
JWWA General Assembly and Research Conference
Takamatsu City, 25-27 October 2017

PERPAMSI
Indonesia Water Supply Association

- **Founded on April 8, 1972**

Members (majority) → PDAMs (Perusahaan Daerah Air Minum), water company owned by the local government.

The background of the establishment was mainly to join forces and work together in addressing common issues and challenges faced by PDAMs. In 1972, there were only 54 PDAMs.

PERPAMSI's MEMBERS (2016)

436

water utilities

391 PDAMs

27 Private operators

18 Public service unit

16 PDAM over 100 thousands connections
215 PDAM less than 10 thousands connections

Total national customers
Number of connections (2016)

11,3 million

Total manpower
53,906 people

PERFORMANCE OF PDAMs (2016)

Source: BPPSPAM

The focus of performance improvement programs carried out by the government

However, due to limited budget and resources, not all of the non-performing PDAMs can be included in the governments program at the same time.

PERPAMSI's Initiative

- PERPAMSI took the initiative to take care of PDAMs which have not been included into the government program
- Performance improvement requires the manpower to have sufficient knowledge and skills to do their job (competence) through relevant and effective trainings.
- Small non-performing PDAMs should be given more opportunities to access available training courses. They also need financial support.
- PERPAMSI is able to mobilize its members to help one another based on the solidarity spirit (Water Operators' Partnerships mechanism).
- The initiative to be implemented regionally.

ON THE JOB TRAINING (OJT) PROGRAM

is designed for the staff of LESS-HEALTHY and UNHEALTHY PDAMs to work within HEALTHY PDAM for one full month in order to learn best practices, attain knowledge, skills and experiences that can be applied when return to their PDAMs of origin

FACILITATOR: PERPAMSI

TRAINERS, (HOST OF OJT): HEALTHY PDAMS

TRAINEES: LESS HEALTHY /UNHEALTHY PDAMS

OBJECTIVES

Human resources working for PDAMs possess adequate knowledge and skills to do the job professionally (comply with standard) → COMPETENCE

Knowledge and skills attained from OJT are adopted and adjusted by trainees with the situation in their PDAMs → SOP

Staff who attended OJT doing the job better contribute to the improvement of PDAM's performance → HEALTHY PDAM

OJT PHASES

Preparation

- Approval of program work plan and budget by board of PERPAMSI's annual meeting
- Identify the target (non-performing PDAMs), needs, expectations, availability, constraints, etc.
- Identify the performing PDAMs in the region as the center of excellence to host the OJT, proven best practices, readiness to host, availability of trainers, constraints, etc.

implementation

- Participating PDAMs dispatch staff to PDAM where the OJT takes place
- OJT in one full month, trainees are treated like employees of host PDAMs
- Output: draft SOP

Monitoring and Evaluation

- Report on the adoption of SOP and its implementation
- Evaluation of PDAMs performance improvement

SUBJECTS OF OJT
demand driven

Technical
- Water production
- Water distribution
- NRW management
- Energy efficiency
- GIS developmentc

Non-Technical
- Financial management
- Human resources management
- Business plan development

COST SHARING ARRANGEMENT

- PERPAMSI covers the costs of accomodation for trainees during OJT in the host city
- Host PDAM covers the costs of training, meals, activities
- Participating PDAMs covers the travel costs and daily allowances of their staff.

Statistics 2014 – 2017

108 staff from **45** PDAMs participated in OJT 2014 – 2017

13 Healthy PDAMs hosted OJT

Medan, Batam, Palembang, Pontianak, Samarinda, Banjarmasin, Ternate, Makassar, Palopo, Gowa, Kab. Kupang, Mataram, Surabaya

OJT 2014 contributes to performance improvement in 2015:

10 PDAMs have increased their performance values (scores)

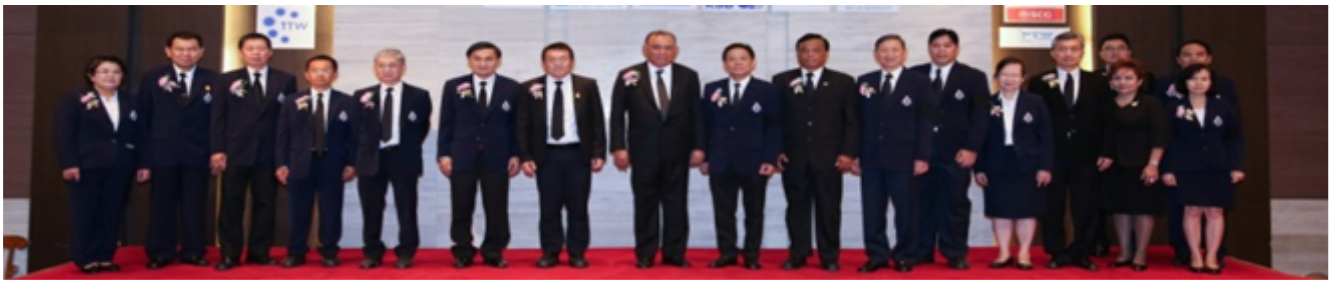
3 PDAMs moved to Healthy category, mostly due to availability of SOP that didn't exist before

Idea for water association partnership

- PERPAMSI and JWWA continue the exchange program that has been halted recently with new arrangement, adopting OJT scheme. PERPAMSI sends participants to attend OJT in Japan and vice versa.
- Other water associations attending this meeting are also encouraged to establish OJT cooperation with one another.


Terima kasih
Arigato gozaimasu

Thai Waterworks Association (TWA)



Outline

- Background
- Vision
- Mission
- Achievements
- Challenges

Background

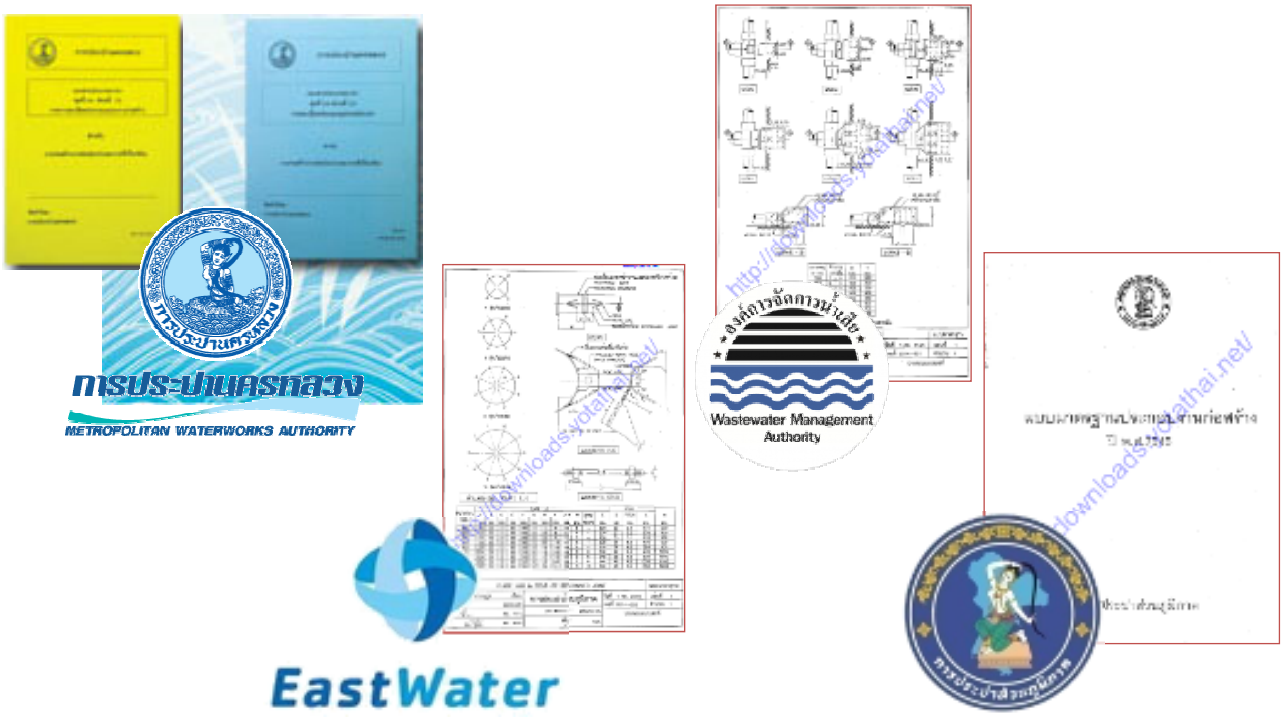
- TWA was established in 1971 by a group of engineers who worked in water supply services.
- A non-profit organization
- Not involved in politics.
- Executive Committee is elected by its members to run TWA on a two - years term basis.

TWA

Background

- Most members of TWA executive committee work for :
  - Metropolitan Waterworks Authority
  - Provincial Waterworks Authority
  - Wastewater Management Authority
- TWA executive committee is on voluntary basis with no-pay.

Background



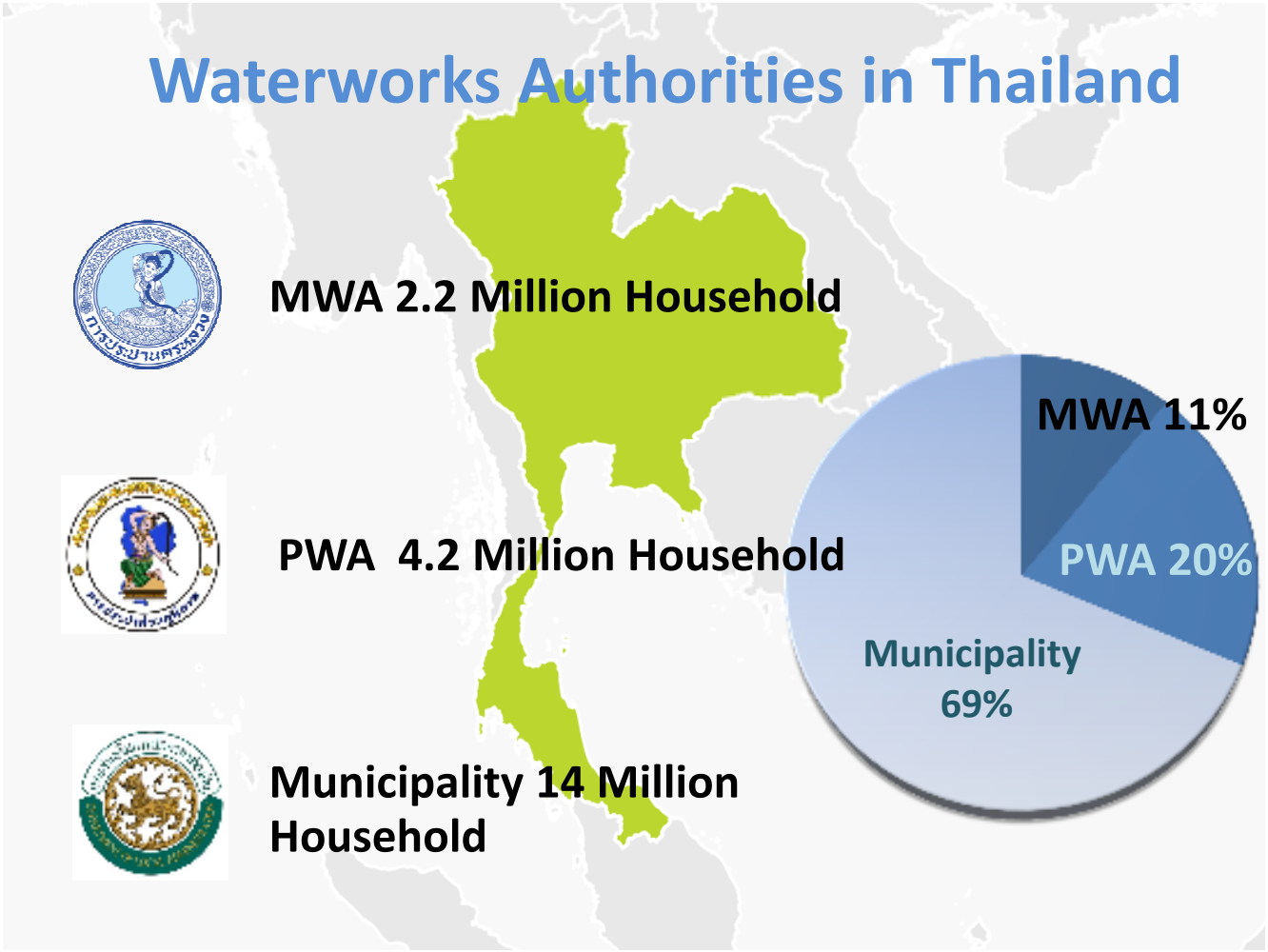
Vision

Improve Waterworks standard for Thai people's quality of life.

Missions

- Center for promoting water supply occupation in Thailand
- Conduct research and disseminate water supply information and technology for safety and welfare of the public
- Support and provide consultation in determination of water supply material and equipment standard.
- Exchange know-how and experiences among members.
- Provide training to those who engaged in water supply occupation.

Waterworks Authorities in Thailand



MWA 2.2 Million Household

PWA 4.2 Million Household

Municipality 14 Million Household

Overview of Past Thai Waterworks Activities

Achievements

TWA Standard

TWA

Water Quality Standard

Primary Standard

Secondary Standard

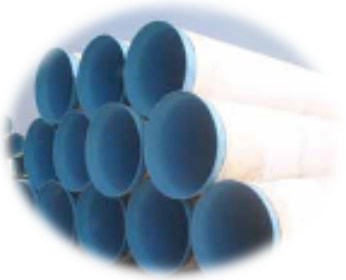
TWA

Pipe and Fitting Standard

Pipe and Fitting Standard

PVC
⌀ 100-600
mm.

HDPE
⌀ 110-630
mm.



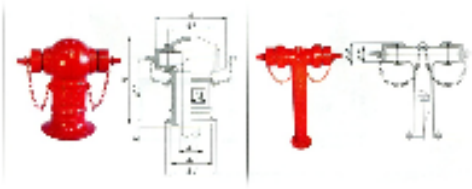
ST
⌀ 100-600
mm.

TWA

Pipe and Fitting Standard

Gate Valve ⌀ 100-600 มม.

Fitting ⌀ 100-600 มม.

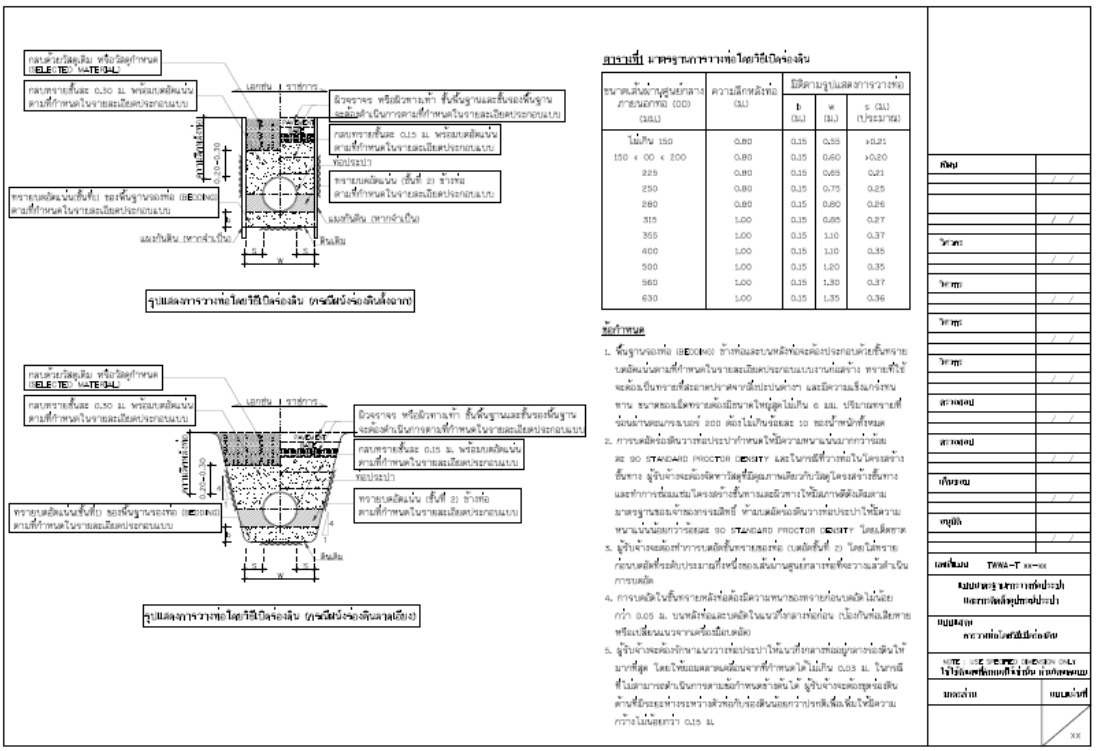


Fire Hydrant ⌀ 100-150 มม.

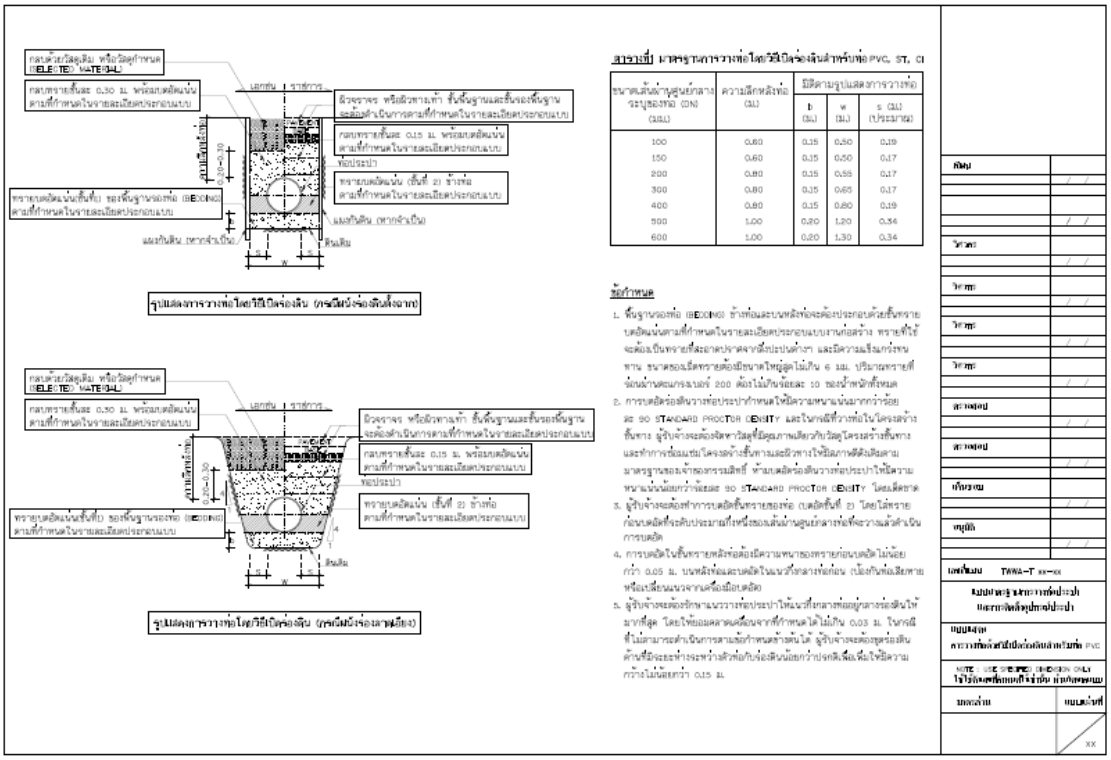
Pipeline and Fitting Installation Standard

TWA

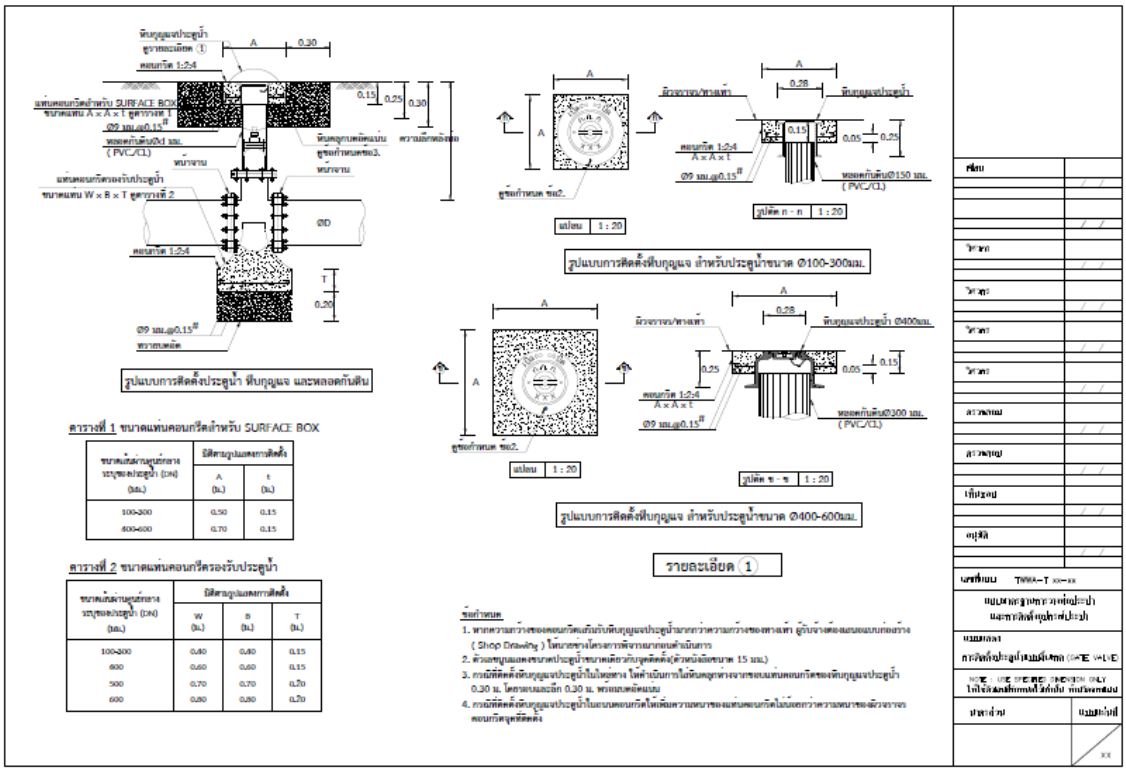
Trenching Standard for HDPE



Trenching Standard for PVC, Steel, Cast Iron



Fire Hydrant Installation Standard



Challenges

Together,
moving forward

8 Waterworks Associations Establish Asian Water Academy (AWA)

Asian Institute of Technology
Thai Hydra 2008
The Federation of Thai Industries
Wastewater Management Authority
Thai Hydrogeology Association
Department of Water Resource
Environmental Engineering Association of Thailand
Thailand Waterworks Association

One of the committee in Water Resource Act

Local Administrative must be convinced to use TWA guideline and Handbook.

WATER SERVICES ASSOCIATION OF AUSTRALIA

Water Associations Meeting

Carl Radford, Water Services Association of Australia

October 2017

What is WSAA?

- Peak body for water utilities
- Members provide services to over 20 million Australians (around 80-90% of population)
- Members have annual revenue over $15 billion
- Members manage over $150 billion in assets

WSAA Members

WSAA Utility Members

NT
Power and Water Corporation

WA
Water Corporation
Aqwest

SA
SA Water

VIC
Barwon Water
Central Highlands Water
City West Water
Coliban Water
Gippsland Water
Goulburn Valley Water
Melbourne Water
South East Water
Western Water
Yarra Valley Water
Westernport Water
East Gippsland Water
Goulburn Murray Water
GWM Water
North East Water
Wannon Water
Lower Murray Water
South Gippsland Water

TAS
Taswater

ACT
Iconwater

NSW
Gosford City Council
Goldenfields Water
Hunter Water
Shoalhaven Water
Sydney Water
WaterNSW
Queanbeyan Regional Council
Byron Shire Council
Lithgow City Council
Eurobodalla Shire Council
Lismore City Council
MidCoast Water
Port Maquarie-Hastings Council
Tweed Shire Council

QLD
Queensland Urban Utilities
City of Gold Coast
Gladstone Area Board
Logan City Council
Redland City Council
Seqwater
SunWater
City of Townsville
Toowoomba Regional Council
Unitywater
Banana Regional Council
Isaac Regional Council
Mackay Regional Council
Mount Isa Water Board
Southern Downs Regional Council
Wide Bay Water
Whitsunday Regional Council
Cairns Water
Western Downs Regional Council

NZ
Watercare Services
Wellington Water

WSAA'S central functions

1. Collaboration

- Between members information sharing and problem solving
- On projects that are too big or expensive to do alone

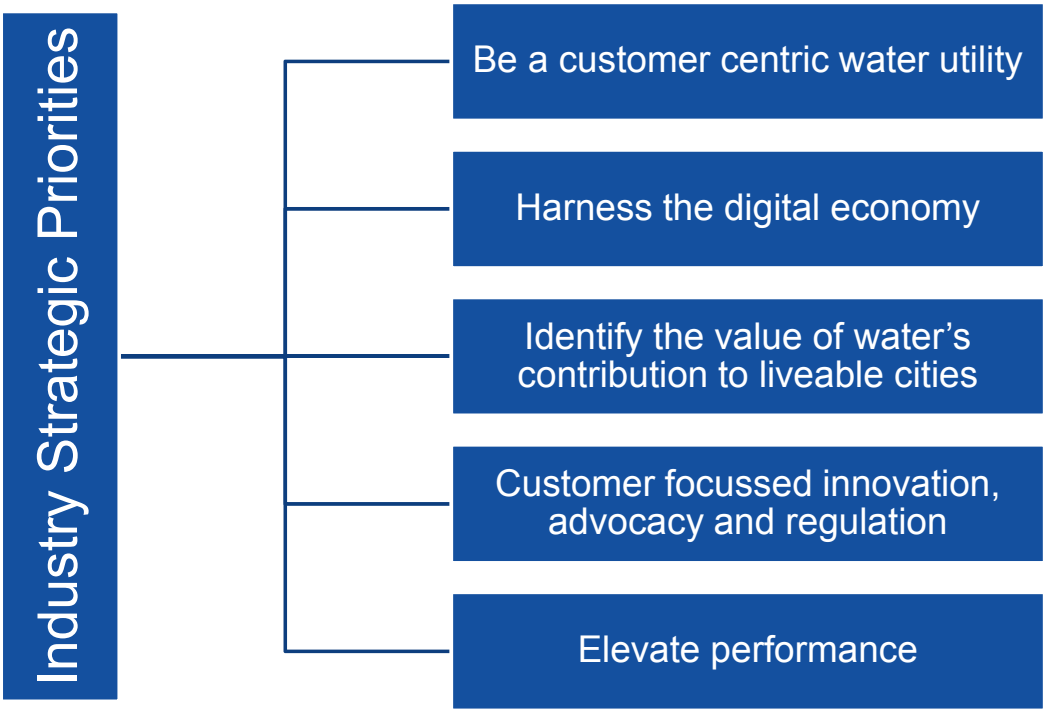
2. Advocacy

- Representing industry interests in Canberra
- Influencing policy
- International representation

3. Innovation

- A filtering point for latest technology
- Introducing new ideas from Australia and overseas
- Benchmarking

Strategic priorities



Strategic priorities

Be a customer centric water utility

- Understanding Customer Value
- Customer Engagement

Strategic priorities

Harness the digital economy

- Internet of everything
- Digital utilities
- Big data

Strategic priorities

Identify the value of water's contribution to liveable cities

- Next Gen Urban Water: The role of urban water in vibrant and prosperous communities
- Global Goals for Local Communities: Urban water advancing the UN Sustainable Development Goals

Next Gen Urban Water

Collaboration for broader community benefit

Case study – Melbourne water utilities

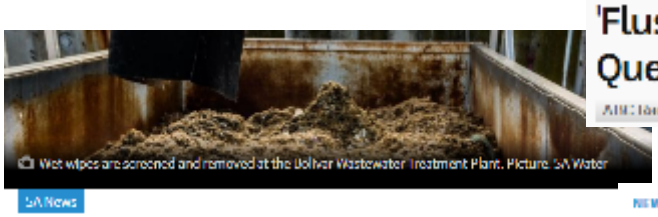
- 21 organisations, lead by City West Water
- 25% increase in alternative water for green space by 2030
- Double tree canopy cover in west by 2050
- Green space increased 25% by 2030
- Example - benefit to community estimated to be 1–8% increased property value within 500m of the creek ($2.3–$18.2M)

Strategic priorities

Customer focussed innovation, advocacy and regulation

- Urban water cost chain
- Urban water reform
- Wet wipes/flushable products
- Technology adoption and fostering innovation

Flushable Products – Scope of the problem



'Flushable' wipes causing blockages in Queensland's sewage systems

SA News

SA Water urges customers to rethink the use of wet wipes that are creating fatbergs

NEW ZEALAND

Sewage leak caused by wet wipes being flushed down toilet turns Glen Innes' Omaru Creek black, kills fish and eels

ACCC takes court action on 'flushable' wipes

12 December 2016

The Australian Competition and Consumer Commission has instituted p
against Kimberly-Clark Australia Pty Ltd (Kimberly-Clark) and separately
Products Pty Ltd (together, Pental) alleging that they each made false or
relation to 'flushable' wipes they marketed and supplied in Australia.

The ACCC alleges that, by labelling these products as "flushable", consumers were led to believe that the products had similar characteristics to toilet paper, would break up or disintegrate in a timeframe and manner similar to toilet paper, and were suitable to be flushed down the toilet, when this was not the case.

NSW

SYDNEY WATER REVEALS SICKENING PHOTOGRAPHIC EVIDENCE OF WET WIPES' IMPACT ON SEWER SYSTEM

Flushable Products – efforts

- International Water Sector Flushability Group (IWSFG) founded between Australia, US, Canada, Spain & Japan
- Joint international statement on products labelled 'flushable' with 300 signatories
- International and Australian Standards development
- Utility research
- Customer and social media campaigns

Strategic priorities

Elevate performance

- Benchmarking
- Tapping the Power of Inclusion and Diversity in Urban Water
- Codes and appaisals

How to find us

Twitter
@admlovell
@wsaa_water

LinkedIn
Water Services Association of Australia

Web
www.wsaa.asn.au

Questions

Any QUESTIONS???

IWA in Asia-Pacific

Sushmita Mandal

Water Associations Meeting, JWWA, Takamatsu Oct 2017

THE REGION

CENTURYASIAN ECONOMYBOOMING CITIESBUZZING PEOPLEUPBEAT WATERWEALTH?

Can this current economic boom be sustained?

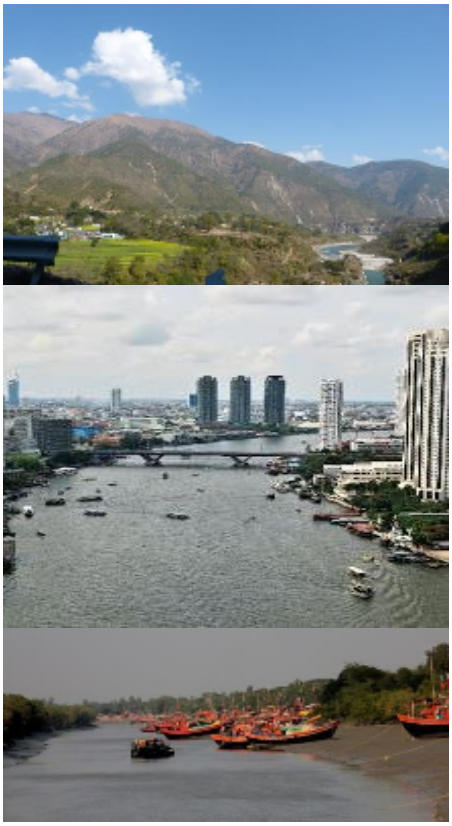
Yes it can, if we can manage one of the basic pillars supporting this growth :

WATER

IWA IN ASIA-PACIFIC

How we organise vis-à-vis the region

- Trans Himalaya (Pakistan, India, Nepal, Bangladesh)
- India, Bangladesh, Bhutan, Sri-Lanka
- Myanmar, Thailand, Lao, Cambodia and Vietnam
- Philippines, Indonesia, Malaysia
- Japan, Korea, Singapore, New-Zealand, Australia
- Pacific islands



Delivering on IWA Strategic Plan in Asia-Pacific

IWA IN ASIA-PACIFIC
supporting implementation of global projects

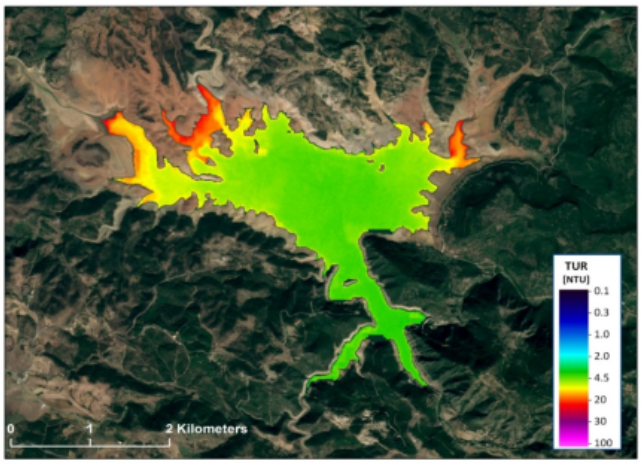
- Flood and Drought Management Tools
- WSP Asia Pacific Network

FLOOD AND DROUGHT MANAGEMENT TOOLS

- Developing online tools to provide decision support in planning from the **transboundary basin to water utility level** by including better information on floods and droughts. http://fdmt.iwlearn.org/en
- Working in three pilot basins including Chao Phraya Basin in Thailand
- Partners are:
  - Hydro and Agro Informatics Institute
  - Metropolitan Waterworks Authority
  - Provincial Waterworks Authority

SPACE-O

- **Problem:** Lack of data for managing water quality and supply, and optimizing performance
- **Solution:** SPACE-O developing products and services using satellite data to complement in-situ monitoring, and provide tools to analyse and apply information for the response, planning and optimization of water utilities
- EU project but looking at expanding applications to Asia
- Singapore International Water Week
  - Proposed Hot Topic - use of Earth Observation products (e.g. satellite data) in improving water management
  - Exhibition
  - Focused meeting with Asian utilities



Satellite derived turbidity in the Mulargia Reservoir, Sardinia, Italy (Reservoir opreated by ENAS, data source: Sentinel-2A recorded on 2016-10-16 © ESA, processed with EOMAP MIP-EWS)

HILSA AND RIVERSCAPES PROJECT

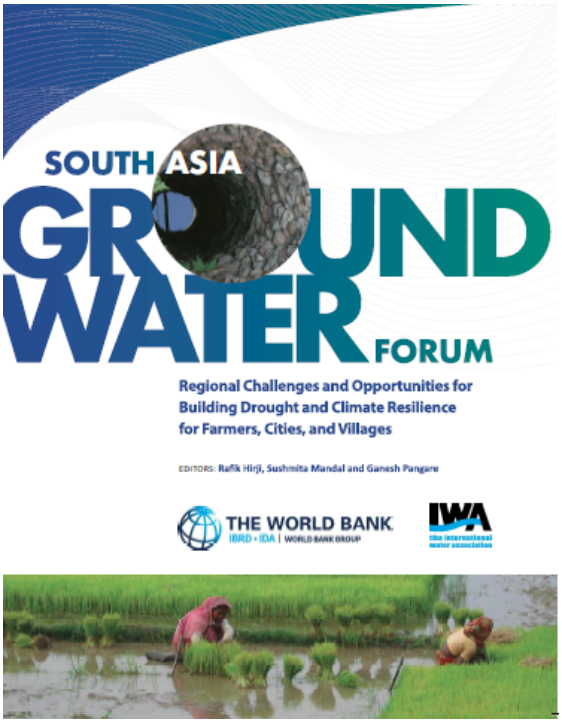
- **Problem:** Over-fishing, siltation in river beds, decrease in water flow and fragmentation of rivers in dry season has caused a decline in *Hilsa* over the last 30 years in India-Bangladesh
- **Impacts:** project is working towards developing trans-boundary deliberative mechanisms, creating common ground for agreements while building confidence between the two countries.
  - ✓ Functioning dynamic mechanisms in place for dialogue between fisheries federations and other CSOs across the countries;
  - ✓ Regional understanding on linkages between sustainable livelihoods, Hilsa conservation and water management.

JOINT BANGLADESH-INDIA SUNDARBAN MANAGEMENT

- Consensus Building and Development of Action Plans for joint management of Sundarban a shared mangrove ecosystem between India and Bangladesh. Sundarban is one of the seven most important wetlands of the world.
- Working with South Asia Water Initiative of World Bank.
- Key activities
  - ✓ Joint Landscape Narrative
  - ✓ Platform meetings
  - ✓ Five Stand alone Proposals

SOUTH ASIA GROUNDWATER FORUM (SAGF)

- IWA organised SAGF on 03-05 June 2016 in Jaipur, India
- Attended by 130 delegates from 15 countries
- Historic : first time Government representatives of 8 countries, viz., Afghanistan, Pakistan, India, Nepal, Bhutan, China, Bangladesh and Sri Lanka came on one platform
- Provided platform to discuss strategies for elevating, at the policy level, the vital role groundwater plays in the water sector
- Explore opportunities for local, national and regional action to achieve sustainable groundwater use and build drought and climate resilience in South Asia

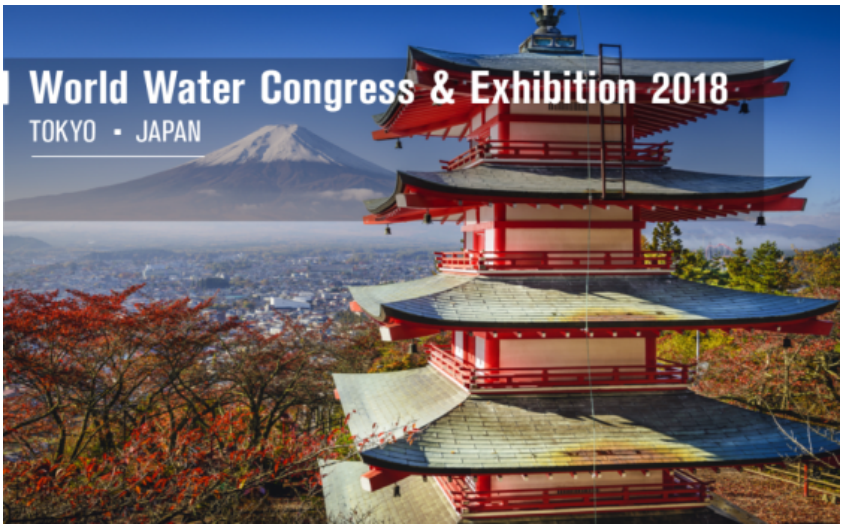


EVENTS: IWA organized/participated/facilitated

- Regional Seminar & Training Program on Lisbon Charter & Aquarating, Bangkok, Thailand.
- Global Water Safety Conference, Palawan, Philippines.
- IWA Water Loss Conference, Bengaluru, India.
- Pacific Water and Waste Water Association meeting, AWP
- 1st Korea International Water Week
- Paris COP 21 and Marrakesh COP 22
- World Water Day Technical Conference, Myanmar organised by the National Water Resources Committee, Government of Myanmar.
- 18th Int. River Symposium in Brisbane, Australia and 19th in Delhi, India
- 4th International Fecal Sludge Management Conference, Chennai, India
- 6th International Conference on Water and Flood Management (ICWFM 2017) Dhaka, Bangladesh
- VietWater, Myanmar Water, Smart Cities and Water India, etc.

CONGRESSES & OTHER BIG EVENTS IN THE REGION

- 2017 ASPIRE conference in Malaysia
- Busan Global Water Forum, 2017
- 2018 IWA Congress & Exhibition (Tokyo)
- SIWW 2018



Reflections…

- Implementable projects have helped build IWA credibility in the region, thus able to leverage better on membership.
- Asia Pacific team works both on projects and plays representation role for IWA in the region
- Continued drive to strengthen membership and engage meaningfully with members is the key focus this year
- Regional complexities need to be understood and strategized for better engagement
- Explore synergies for collaboration with Water Associations in the region working towards a water-wise world.

Cover: Yashima
Back Cover: Sanuki Takamatsu Festival

JWWA

Japan Water Works Association

4-8-9, Kudan-Minami, Chiyoda-ku, Tokyo 102-0074, JAPAN
TEL +81-3-3264-2307 Email kokusai@jwwa.or.jp