OVERVIEW OF THE WATER SERVICES INDUSTRY IN MALAYSIA

BY

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14 FEBRUARY 2011
BACKGROUND

- ROLE OF KETTHA FOR THE WATER SECTOR
- ECONOMIC TRANFORMATION PLAN
- MALAYSIA DEVELOPMENT PLAN
- MINISTRY’S STRATEGIC PLAN 2010 – 2015 FOR THE WATER SECTOR
ROLE OF KETTHA (MINISTRY OF ENERGY, GREEN TECHNOLOGY AND WATER)

- Formulation and implementation of national water policy.
- Planning and developing strategic directions.
- Formulating licensing and supervising policy and framework.
- Planning, evaluating and monitoring development projects.
- Create a regulatory system that is dynamic and progressive.
- Ensure a suitable environment for the development of the water service industry
ECONOMIC TRANSFORMATION PROGRAMME

KEY PERFORMANCE INDICATORS

MALAYSIA DEVELOPMENT PLANS

KETTHA’S STRATEGIC PLAN 2010-2015
# WATER SERVICES INDUSTRY ROADMAP

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Stabilization</strong></td>
<td><strong>Consolidation</strong></td>
<td><strong>Towards Efficiency</strong></td>
</tr>
<tr>
<td>- Privatisation and corporatization of state water authorities</td>
<td>- Operationalisation of SPAN</td>
<td>- Tariff setting mechanism to allow full cost recovery to be fully phased in by 2013</td>
</tr>
<tr>
<td>- Planning for restructuring of water services industry</td>
<td>- Enforcement of WSIA 2006</td>
<td>- Integration of water supply and sewerage services</td>
</tr>
<tr>
<td>- Amendments to Federal Constitution</td>
<td>- Transfer of water related assets to PAAB at negotiated value and development of new water infrastructure</td>
<td>- Initial efforts towards introduction of integrated water and sewerage tariffs</td>
</tr>
<tr>
<td></td>
<td>- Service providers become asset light and focus on efficiency and effectiveness</td>
<td></td>
</tr>
</tbody>
</table>
WATER MANAGEMENT IN MALAYSIA – PRE-AMENDMENTS TO THE FEDERAL CONSTITUTION
WATER MANAGEMENT IN MALAYSIA – POST-AMENDMENTS TO THE FEDERAL CONSTITUTION
A) Individual Septic Tank

B) Connected System
### PRINCIPAL ROLE OF FEDERAL AND STATE GOVERNMENTS

<table>
<thead>
<tr>
<th>Body</th>
<th>Area of responsibility</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Federal Government</strong></td>
<td>Policy matters</td>
<td>Development of a holistic water policy for the country by setting policy directions.</td>
</tr>
<tr>
<td><strong>State Government</strong></td>
<td>Water resources matters</td>
<td>Manage existing water basins with the view of protecting the quality of raw water and identifying new water basins when required.</td>
</tr>
<tr>
<td><strong>National Water Resources Council (NWRC)</strong></td>
<td>Governance matters</td>
<td>Ensures coordination with the various State Governments in the management of the water resources.</td>
</tr>
<tr>
<td><strong>Suruhanjaya Perkhidmatan Air Negara (SPAN)</strong></td>
<td>Regulatory matters</td>
<td>Regulate the whole water industry based on the policy directions set out by the Federal Government. Promote an efficiency driven regime</td>
</tr>
</tbody>
</table>
INTRODUCING REGULATORY REGIME

WATER SERVICES INDUSTRY ACT 2006 (WSIA)

NATIONAL WATER SERVICES COMMISSION

PAAB – PENGURUSAN ASET AIR BERHAD - (WATER MANAGEMENT AGENCY)

INDAH WATER KONSORTIUM BERHAD
AREAS OF CONCERN

- Ensure coverage and sustainability of quality water
- High operation and maintenance cost
- High non revenue water (NRW)
- Operational efficiency of the water industry
THE WAY FORWARD

ETP
- Regionalization of treatment plants
- Operation and maintenance
- Waste to wealth
- Non Revenue Water
- Green fees
- Consumer
To create a **holistic** and **viable** water services industry with the proficiency to deliver an **efficient** and **excellent** water and sewerage service
Thank you
SEWERAGE MANAGEMENT IN MALAYSIA

Presentation to PPP Council for Overseas Water Infrastructure
The sewerage technology in Malaysia has improved significantly within a span of over 5 decades.
Domestic Charge of RM2 to month does not cover operating costs:
1. O&M
2. Collection
3. Conveyance RM8 per Equipment Replacements
4. Depreciation
5. Planning
6. Monitoring
7. Administration etc.

1. Poor hygiene
2. Water pollution
3. Water Borne Diseases: 
   - Diarrhea
   - Worm Infections,
   - Cholera
   - Typhoid
   - Stunted Growth
   - Death

1. Conserving the environment
2. Reducing pollution
3. Increase level of health through sanitary standards
4. Mitigate climate change via conservation & limiting waste
5. Sustainable sewerage management
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Merdeka</td>
<td>Mostly Managed by Local Sanitary Board</td>
</tr>
<tr>
<td>After Merdeka</td>
<td>Urban by Municipals &amp; Rural by Ministry of Health</td>
</tr>
<tr>
<td>June-93</td>
<td>Sewerage Act 1993 (Act 518) was passed by Parliament</td>
</tr>
<tr>
<td>December-93</td>
<td>Dept. of Sewerage Services was formed as regulator for sewerage services under the SSA.</td>
</tr>
<tr>
<td>Before 1994</td>
<td>Sewerage Services were managed by 144 Individual Local Authorities</td>
</tr>
<tr>
<td>April-94</td>
<td>Indah Water took over sewerage management in most states in Peninsular Malaysia</td>
</tr>
<tr>
<td>June-00</td>
<td>Govt. Under Minister of Finance Incorporated took over IWK</td>
</tr>
<tr>
<td>June-06</td>
<td>Water Services Industry Act 2006 &amp; SPAN approved by Parliament</td>
</tr>
<tr>
<td>Currently</td>
<td>Indah water provides sewerage services in 88 out of the 144 Local Authorities in Malaysia (<em>however not on holistic manner</em>). Rest of the areas is still managed on Ad-Hoc basic</td>
</tr>
</tbody>
</table>
Governance Structure for Sewerage Services

1. Sewerage Services
2. Operator in 88 Local Authority Areas.
4. Undertakes Refurbishment/Upgrading Projects Funded by Govt.
Areas of IWK Coverage and Resources

- **IWK TOTAL OPERATIONAL AREA AND POPULATION SERVED (As at December 2010)**

<table>
<thead>
<tr>
<th></th>
<th>AREA (Sq. Km)</th>
<th>%</th>
<th>POPULATION EQUIVALENT (PE)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>IWK</td>
<td>68,505.88</td>
<td>51.8</td>
<td>19,134,331</td>
<td>71.7</td>
</tr>
<tr>
<td>NON-IWK</td>
<td>63,769.54</td>
<td>48.2</td>
<td>7,361,729</td>
<td>28.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>132,275.42</strong></td>
<td><strong>100.0</strong></td>
<td><strong>26,695,297</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Exclusive of 2.96 million population utilising primitive (pour flush) systems*

1. No. of Unit Office: 18
2. No. of Reporting Center: 48
3. No. of Laboratory facility: 3
4. No. of Certification Office: 11
5. No. of Regional Planning Office: 4
6. No. of Staff: 2,733
7. No. of Vehicle owned: 559
8. No of Local Authorities Served: 88
**IWK’s Assets and Population Equivalent Served**

### Types of Treatment Plants

- **NETWORK PUMP STATIONS, 790** (8%)
- **COMMUNAL SEPTIC TANK, 3,633** (36%)
- **AERATED LAGOON, 163** (2%)
- **OXIDATION PONDS, 425** (4%)
- **IMHOFF TANK, 741** (7%)
- **MECHANICAL PLANT WITHOUT MEDIA, 4,224** (41%)
- **MECHANICAL PLANTS WITH MEDIA, 215** (2%)

### Population Equivalent Catered By Treatment Plants

- **NETWORK PUMP STATIONS**
  - 3.97 mil PE (15%)
- **AERATED LAGOON**
  - 2.67 mil PE (10%)
- **COMMUNAL SEPTIC TANK**
  - 0.4 mil PE (2%)
- **MECHANICAL PLANT WITHOUT MEDIA**
  - 15.69 mil PE (61%)
- **MECHANICAL PLANTS WITH MEDIA**
  - 0.8 mil PE (3%)
- **OXIDATION PONDS**
  - 1.67 mil PE (7%)
- **IMHOFF TANK**
  - 0.55 mil PE (2%)

### Total Connected Population Equivalent Served by IWK
- **18.7 million** (excluding CSTs & NPSs).

Approx. 1.2 mil Individual Septic Tanks and Population Equivalent Served by IWK is 6.1 mil.
Lack of investment in building large/regional STPs by the Government has resulted in the proliferations of small plants in new developments by developers.

On the average about 300 STPs are built by developers & handed over to IWK to operate and maintain each year. (83% of which are STPs less than 5,000 PE)
Improvements In Sewerage Services Since Federalisation (1994)

Operation & Maintenance (O&M) Improvements
• O&M expertise for varied sewerage systems
• Efficient desludging services and septage management
• Effluent Compliances that contributes to improved water quality.

Sustainable Sewerage Planning & Development for Infrastructure Improvements
• Develop Guidelines and Standards
• Integrated Financing strategy for Sewerage development
• Nationwide Catchments Strategy

Customer Service & Awareness Program for Sustainable Services
• Efficiently address operational complaints
• Improved Level of Service for customers
• Comprehensive Billing & Collection systems
• Communications and public outreach and education

Creating Value For The Sewerage Industry
• R&D for operational improvements & sustainable services
• Training & Accreditation services to develop skilled and knowledgeable workforce
Total Asset Management System

An integrated Financial, Asset, Laboratory, Customer Operations Enquiry & Desludging Management Systems to provide operational efficiency

**Asset Maintenance**
1. Fleet
2. Equipment
3. Fault Report
4. Scheduling
5. Manpower
6. Work Order
7. Preventive Maintenance

**Distribution**
1. Receiving
2. Inventory
3. Purchase Requisition
4. Purchase Order

**Laboratory Mgt Systems**
- Quality Measurement

**Customer Mgt Systems**
- Enquiry, Request & Complaints

**Financial Management**
1. Cash Flow
2. Consolidated Accounts
3. Budget Control
4. Fixed Assets
5. A/C Receivables
6. A/C Payables
7. General Ledger
8. Utility Payables

**Key Performance Indicators (KPI)**

**Business Performance**
Capacity Building Initiative at International Level

- Capacity Building for Urban Environmental Company URENCO, Halong City, Vietnam
- REGIONAL WATER AND SANITATION WORKSHOP AND TRAINING - Developing Comprehensive Septage Management Programs in Asia
- Twinning partnership with Perusahaan Daerah Air Minuman (PDAM) Tirtanadi, Medan, Indonesia
- Waterlinks Forum at Bangkok
- Study visit by NGO bodies from various city of Philippines
  Date Visit: 14 December 2006

- Technical visit from Vietnam Coastal City Environmental Sanitation Project
  Date Visit: 5 – 7 October 2009
- 15th African Water Association Congress at Kampala
  Date: 15 – 18 March 2010
- Study Visit from TAIZ Water & Sanitation Local Corporation, Yemen
  Date Visit: 22-26 January 2007
- Study visit from Oman Wastewater Services Company
  Date Visit: 10-12 September 2007
- Technical Study Visit by Iranian Delegates
  Date Visit: 13 November 2009

- Technical visit by Philippine Department of Environment and Natural Resources
  Southern Mindanao on 20th – 21st July 2010
- Diagnostic visit to Jemshedpur Utilities & Services Company Limited, India on
  7th – 10th December 2010
- Workshop for Philippine Multiple-Recipient Water Operator Partnership on 9th – 11th November 2010
- Twinning Partnership with Maynilad Water Services, Philippines on January-August 2010
- Twinning Partnership with Hai Phong Drainage and Sewerage Company (SADCO), Vietnam on Mac 2010-Sept 2010
## Total Priority CAPEX Required FY 2011 to 2013

<table>
<thead>
<tr>
<th>No</th>
<th>Project Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capex 1</td>
<td>Refurbishment / Upgrading / Rationalisation</td>
</tr>
<tr>
<td>Capex 1a</td>
<td>Refurbishment / Upgrading / Rationalisation to meet Cat 2 and Cat 3 Standards</td>
</tr>
<tr>
<td>Capex 1b</td>
<td>Brickwall Fencing to ensure safety and security</td>
</tr>
<tr>
<td>Capex 1c</td>
<td>Rationalise priority plants identified within the JBIC catchment to increase operational efficiencies</td>
</tr>
<tr>
<td>Capex 2</td>
<td>Rehabilitation of Critical Sewer Network</td>
</tr>
<tr>
<td>Capex 2a</td>
<td>Rehabilitation of Critical Sewer Network / Force Main to solve operational issues</td>
</tr>
<tr>
<td>Capex 2b</td>
<td>Sewer Profiling and Mapping to develop asset management plan</td>
</tr>
<tr>
<td>Capex 3</td>
<td>Sludge Projects to meet current capacity/demand for sludge management*</td>
</tr>
<tr>
<td>Capex 4</td>
<td>Pond Desludging to ensure compliance to Cat 2 requirements</td>
</tr>
</tbody>
</table>
Phase 1 – Priority Needs Capital Expenditure Plan

Focus on Operational Enhancements and Compliance to Standards

- Refurbishment and upgrading of plants to meet new Category 1 standards;
- Sludge treatment facilities;
- Sewer rehabilitation program;
- Regionalisation and rationalisation in priority areas;

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refurbishment and upgrading of STPs to Cat 1 Stds.</td>
<td>4,600 STPs</td>
</tr>
<tr>
<td>Sewer rehabilitation</td>
<td>1,300 km</td>
</tr>
<tr>
<td>Sludge treatment facilities</td>
<td>30 Nos</td>
</tr>
<tr>
<td>Regional sewerage facilities</td>
<td>26 Nos</td>
</tr>
</tbody>
</table>
Long Term Needs Capital Expenditure Plan

Meets all objectives for the Sewerage Industry

- Refurbishment and upgrading of plants to meet new Category 1 standards;
- Rationalisation and regionalisation of plants;
- Sewer rehabilitation program and connection of premises to network;
- Develop new plants and sludge treatment facilities and land acquisition;
- Convert pour flush to ISTs
- Increase sullage connection to sewer network

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure upgrading and rationalisation</td>
<td>7,141 STPs</td>
</tr>
<tr>
<td>Sewer rehabilitation</td>
<td>1,319 km</td>
</tr>
<tr>
<td>Sludge treatment facilities</td>
<td>63 Nos</td>
</tr>
<tr>
<td>Regional sewerage facilities</td>
<td>178 Nos</td>
</tr>
<tr>
<td>Backlog connection (incl. sewer reticulation)</td>
<td>552,244 properties</td>
</tr>
<tr>
<td>Conversion of pour flush to ISTs</td>
<td>836,470 properties</td>
</tr>
<tr>
<td>Sullage Connection</td>
<td>244,034 properties</td>
</tr>
</tbody>
</table>
Sewerage CAPEX Fundings Sources

Current major CAPEX Fundings:

- Malaysia Plan
- Funds via Government-to-Government arrangement

Potential Sources of Financial for CAPEX

- Malaysia Plan
- Government Grant
- Bond
- Sabah Credit Corporation
- Public Private Partnership / Private Finance Initiative
NEW ENACTMENTS

Water Services Industry Act 2006 (WSIA Act 655) and National Water Services Commission Act (SPAN Act 654) recently gazetted for enforcement.

SPAN

New integrated regulator for water and wastewater services (“SPAN”) was officially announced in February 07

WSIA

- WSIA offers resolution to critical issues for the sewerage industry such as billings & collection, refusal for individual septic tank desludging service and maintenance of private sewage treatment plants.
Green Technology For Sewerage Sector

- **Biosolid**
  - Sludge Cake
  - Composting
  - Fertilizer
  - Plant Biomass
  - Soil Conditioner

- **Biogas**
  - Gasification
  - Methane
  - Combustion Engine
  - Electricity
  - Treated Water
  - Effluent
  - Final effluent for Industrial Use

**Future Zero Discharge Vision**
- Sustainability through Zero Waste Management and Waste to Wealth
To ensure a sustainable future, R&D initiatives will need to look beyond:

- **Sewage Treatment & Sludge Disposal**
- **Meeting Regulatory Requirements**
- **Fundamental Research**
- **Bench Scale**
- **Traditional & Institutionalized**
- **Independent Efforts Across Institutional Domains**

**Opportunities of Joint Efforts and Assistance In R&D For Green Technology Towards A Sustainable Future**

- **Recovery of Resources, such as Energy, Water and Nutrient for Reuse**
- **Improved & Cost-efficient Treatment Process**
- **Applied Research**
- **Field Trials and Progressive uptake**
- **Experimental & Innovative Approaches Towards Commercialization**
- **Collaborative Approaches & Network Alliances**
Strategizing R&D Initiatives

**Improve Network & Alliances:**
Policy to promote partnerships & knowledge sharing.
Guidelines & Code of Practice with Model collaborative contracts.
Establish routes & forms for dissemination.

**Optimize Resources:**
Dedicated funds for the wastewater sector’s priority areas.
Government subsidies for Pilot Projects in reuse.
Industry to provide test beds
Institutions to provide quality laboratory and analytical facilities.

**Promote Niche Expertise:**
Academia to lead in Fundamental and Nationwide research.
Industry to actively promote applied, experimental and innovative activities.
Public sector inputs on socio-economics.

**Research Commission:**
Prioritize R&D areas for the sector.
Manage dedicated funds, review proposals and award.
Manage dissemination routes and function as database depository.
Reward system for generation of IPs and Product commercialization.
Moving Towards 1 Water for 1 Malaysia

WATER RESOURCE MANAGEMENT

RIVER BASIN MANAGEMENT

WATER SUPPLY & SEWERAGE

WATER & SANITATION
THANK YOU

For further enquiries kindly contact:

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Indah Water Konsortium Sdn Bhd
Email: akadirmd@iwk.com.my
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A Presentation for the
PPP Council for Overseas Water Infrastructure

by Ramon Alikpala, Chairman
Metropolitan Waterworks and Sewerage System (MWSS)

DEVELOPING NEW WATER SOURCES FOR METRO MANILA
The Metropolitan Waterworks and Sewerage System (MWSS)

- The largest water privatization project in the world
- Services water supply and sewerage requirements of approximately 15 million people
MWSS Priorities for Next 6 Years

1. Development of New Water Sources
2. Development of Replacement Source for Irrigation
1. Development of New Water Sources

- **Angat Dam** - the only present source of water supply for the MWSS service area serving a total of 13 million population out of the total service population of 15 million, or only 87% total service coverage.

- Angat Dam provides a supply volume of 4,000 million liters per day (4,000 mld) out of the present demand of 4,395 mld, or a deficit of 395 mld.

- By 2015, the projected demand is expected to reach 5,054 mld, thus requiring the development of supplementary sources of water to address the increasing demand.
Current Supply – Demand Projections (MLD)
## Potential Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Potential Volume</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaliwa River</td>
<td>550 MLD</td>
<td>US$510 M</td>
</tr>
<tr>
<td>Laiban</td>
<td>1,900 MLD</td>
<td>US$1,450 M</td>
</tr>
<tr>
<td>Kanan River</td>
<td>3,270 MLD</td>
<td>US$1,370 M</td>
</tr>
<tr>
<td>Laguna Rivers</td>
<td>300 MLD</td>
<td>NA</td>
</tr>
<tr>
<td>Wawa River</td>
<td>50 MLD</td>
<td>US$100 M</td>
</tr>
<tr>
<td>Laguna Lake</td>
<td>500 MLD</td>
<td>NA</td>
</tr>
</tbody>
</table>
1. Development of New Water Sources

Current Status

- World Bank has committed to undertake a study for MWSS to:
  - to validate water demand projections
  - to undertake the necessary updating, comparative evaluation and prioritization of the various new water sources identified, in order to come up with a new road map;
  - to prepare the first priority project biddable by 2012.

- For implementation in late 2011 or early 2012
2. Development of Replacement Source for Irrigation

- Angat Dam is a multi-purpose facility serving domestic water supply, power supply and irrigation water.

- MWSS’ present water allocation in the Angat Reservoir:

<table>
<thead>
<tr>
<th>Allocation Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Allocation</td>
<td>22.0 cms</td>
</tr>
<tr>
<td>Conditional Allocation from Irrigation water rights</td>
<td>15.0 cms</td>
</tr>
<tr>
<td>Umiray-Angat Transbasin Tunnel</td>
<td>9.0 cms</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>46.0 cms</strong></td>
</tr>
<tr>
<td>or</td>
<td><strong>4,000 mld</strong></td>
</tr>
</tbody>
</table>

- Due to increasing water use conflicts between water supply and irrigation, a new irrigation source must be developed.
## Potential Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Potential Volume</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apalit-Pampanga River</td>
<td>20 CMS</td>
<td>US$ 110 M</td>
</tr>
<tr>
<td>Pampanga River</td>
<td>20 CMS</td>
<td>US$ 110 M</td>
</tr>
<tr>
<td>Candaba</td>
<td>15 CMS</td>
<td>US$ 220 M</td>
</tr>
<tr>
<td>Balintingon</td>
<td>17 CMS</td>
<td>US$ 440 M</td>
</tr>
</tbody>
</table>
2. Development of Replacement Source for Irrigation

Current Status

☐ Technical Working Group (TWG) composed of MWSS, NIA and the Concessionaires (Maynilad and Manila Water) is preparing a Memorandum of Understanding (MOU) for the joint undertaking of the Project (re: 15 CMS Water Source Development Project);

☐ The TWG will undertake study

☐ to evaluate the most viable and best alternative replacement source;

☐ to prepare the selected source biddable by 2012.
Summary

- **Moratorium**
  - While unsolicited proposals have been received, the MWSS Board recently approved a moratorium on the processing of further proposals.

- **World Bank Study**
  - World Bank is funding a comprehensive study to determine demand requirements. The study is also expected to identify the optimal source based on economic, environmental, social, and demand considerations.

- **New government policy for preference on solicited proposals**
Introduction of the Country:
Geographical area - 64,000 Sq. km

Population - 20 million

Ethnic - Sinhala - 73.9%
Tamil - 18.2%
Muslim - 7.1%
Others - 0.8%

Main Religions - Buddhism, Hindu, Islam & Catholic

GDP - US$ 2365 per capita
**Water Supply Coverage**

- Piped (Total): 37 %
  - NWSDB: 30 %
  - Others: 7 %
- Safe water supply: 80 %

**Water & Sewerage Coverage (Targets)**

<table>
<thead>
<tr>
<th></th>
<th>Actual 2009</th>
<th>NWSDB Target 2011</th>
<th>MDG Target 2015</th>
<th>MDG Target 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Supply Coverage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piped (Total)</td>
<td>37 %</td>
<td>41 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe water supply</td>
<td>80 %</td>
<td>85 %</td>
<td>100 %</td>
<td></td>
</tr>
<tr>
<td><strong>Sewerage Coverage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piped</td>
<td>2.5 %</td>
<td>3 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-site Sanitation</td>
<td>83.2 %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate Sanitation</td>
<td>85.7 %</td>
<td>87 %</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
- Soysapura
- Maligawatte
- Mattegoda
- Jayawadanagama
- Crow-Island
- Maddumagawatte
- Stace Road
RURAL WATER SUPPLY POLICY:

- Water is a basic human need, which warrants for equitable allocation.
- Water has an economic value
- Provision of WSS should be people centred and demand driven.
- Beneficiary Involvement, Decision Making and Participatory Planning
- Women should play a central role in decision making process.

RURAL WATER SUPPLY & SANITATION

- Large-scale community participatory rural water supply projects
- ADB Assisted 3rd Water Supply & Sanitation Sector Project
- Secondary Towns and Community Based Water Supply & Sanitation Project
- More than 3,000 small-scale RWSSs were constructed by various government and non-governmental organizations
- They provide water to about 8% of total population of Sri Lanka.
- NWSDB established 17 RWS units attached to regional offices to provide necessary backup support for communities who run their own WSSs
- Identified another 4 Districts to establish RWS units
- Proposed a mechanism for assets transferring system for RWS schemes
- Identify a Water quality surveillance program for RWS schemes
RURAL WATER SUPPLY COVERAGE

- Rural:
  - Pipe borne - 573,426 people (498 schemes)
  - Individual wells - 110,340 people (22144 wells)
  - Rain water tanks - 70,385 people (12,980 tanks)
  - Common wells - 67,270 people (3,249 wells)
  - HPTW - 49,300 people (1,031 HP)
- Small Towns - 210,561 (47 schemes)

1.08mln rural population !!!

SANITATION & HYGIENE EDUCATION

- Total GNDs covered: 1125
- Toilets completed: 83,000
- Institutional W&S: 237
Ongoing Water Supply / Sewerage Projects

Large-scale Water Supply Projects 22
Large-scale Sewerage Projects 4
Small & Medium Water Supply Projects 38
Reconstruction Tsunami effected Water Supply Project 5
Total 69
No of Foreign Funded Water Supply Projects On Going: 22

Expected Population to be served: 2,628,000

Total Cost: Rs. 174,658 million

Foreign Component: Rs. 123,751 million

Local Component: Rs. 50,907 million
GREATER KANDY WATER SUPPLY PROJECT

GREATER GALLE WATER SUPPLY PROJECT
Kalu Ganga Water Supply Project

Towns North of Colombo Water Supply Project
No of Foreign Funded Sewerage Projects On Going: 4

Expected Population to be served: 1,761,200

Total Cost Rs. 27,715 million

Foreign Component Rs. 20,141 million

Local Component Rs. 7,574 million
**SEWERAGE COVERAGE**

**Sewerage Coverage**

- Piped: 2.5%
- On-site Sanitation: 83.2%
- Adequate Sanitation: 85.7%
Establishment of a Separate Unit to monitor and assess the financial and economic viability of the Project and to monitor the investment and financial forecasting.

This Separate Unit to be assigned to assess the financial implications to the NWSDB of all investments to be undertaken.

The Separate Unit shall analyze and recommend all possible investment alternatives.

Special emphasis to be given towards development of low cost (low per capita investment) solutions to achieve sector targets.

Harnessing private capital to the sector through BOO/BOOT type PPP arrangements.
Thank you!
PUBLIC – PRIVATE PARTNERSHIP
IN THE FIELD OF INFRASTRUCTURE

Dr. Nguyễn Hồng Tiến

Hà Nội, January 2011
Before implementing PPP pilot projects in Vietnam, there have been projects that were implemented by some model such as: BOT, BT or BTO in some areas such as:

1. Transport project:
   - Road way:
     + Hanoi – Hai phong highway (BOT).
     + Hanoi – Thai nguyen.
     + Cau Gie – Phap Van.
     + Nguyen Van Linh Boulevard (BT).
     + An Suong – An Lac Route (BOT).
   - Bridge:
     + Phu My Bridge.
     + Rach Mieu Bridge.
2. Electricity projects:
   + Phu My 2 thremo-electricity
   + Phu My 3 thremo-electricity
   + Can don Hydroelectricity plant

3. Urban technical Infrastructure field: focusing on water supply area:
   + Thu Duc water plant
   + Dong Tam water plant – Tien Giang Province.
Some of remaining and difficulties when implementing BOT, BT projects

1. Most of projects applied form of assigning investors – Therefore reducing competition.
4. Task of repaying clearing the ground does not meet demands.
5. Measurement of mobilizing fund, promoting strength of communities for building up infrastructure basis is limited.
6. The cost, selling and buying price depends on Government’s regulations...
Current difficulties and obstacles on attracting economic backgrounds to invest in water sector:

**Sequence and procedure of investment**: Some State enterprises running ineffectively but being protected caused exclusive rights on managing areas of supplying water – sector service that cause some difficulties to seek and set up investment projects.

**Fund and resource to invest**: Lack of loaned capital; sequence and procedure between Vietnamese Government and Donors….remaining differences; combination amongst Ministries, Organizations, local government is not effective.
The cost of clean water and wastewater tariff: The cost of clean water is decided by the People Province Community (PPC) meanwhile principle of clean water cost has to be counted correctly and accordant with customers’ budget and effort that is not now implemented...Therefore, the government budget has been compensating to ensure the cost for operating, remaining and repairing...

Land policy: unstable, clearing the ground, resettling, varying cost...making total investment cost increase higher than the beginning.
Principles for piloting investment under public-private partnership

1. Achieving the goal of attracting private and foreign investment in infrastructure development to provide public services.

2. Privately-owned capital contribution to the Project shall include the investor’s equity, commercially viable capital funded by domestic and international sources, and any other capital sources to be mobilized subject to the principle that public debts will not occur.
3. Investor’s equity capital must account for at least 30% of the privately-owned investment in the Project. Investor can obtain fundings from commercial loans, and from other sources (without Government guarantee) to the maximum being 70% of the privately-owned investment in the Project.

4. Investors implementing the Project shall be selected on a competitive, fair, transparent, economic efficiency basis, in compliance with Vietnam’s laws and international customs and practices.
Areas of piloting investment under public-private partnership

1. Roads, bridges, tunnels, ferry.
2. Railway, railway bridges, railway tunnels.
4. Airports, seaports, river ports.
5. Water supply system.
8. Environment (Solid waste treatment plants).
9. Other infrastructure development and public services supply projects as decided by the Prime Minister.
Tendering for selection of an investor

1. Based on the approved Feasibility study report, the authorized State body shall organize the preparation of tender invitation dossiers and hold open domestic or international tendering to select the project implementing investors. Tendering shall be in compliance with legal regulations on tendering and in accordance with international practices and customs, ensuring competition, fairness, transparency and economic efficiency.
Tendering for selection of an investor

2. The tender invitation dossier includes details of proposal evaluation criteria, bidding procedures, draft Project Contract, attached with the approved Feasibility study report, the proposed State Contribution in the Project, proposed investment guaranty mechanism of the Project.

3. The Authorized State Agency shall organize appraisal of investor selection result, invite opinions of Ministry of Planning and Investment before approval of investor selection result pursuant to the prevailing regulations.
Water supplying works that were determined in the planning should be called upon to invest following PPP model

1. Decision No 2065/QD-TTg dated 12/11/2010 on approving the water supply plan for key region – Mekong delta area. Water Plants that are planned for serving inter-regions level.

- Song Hau I Water Plant: Capacity of phase 1: 500,000 cubic meter per day-night; phase 2: 500,000 cubic meter per day-night, located in Can Tho city.
- Song Hau II Water Plant: phase 1: 1,000,000 cubic meter per day-night, phase 2: 2,000,000 cubic meter per day-night in Chau Thanh – Long An.
- Song Hau III Water Plant: phase 1: 200,000m3/day-night; phase 2: 500,000m3/day-night in Chau Doc An Giang
2. According to Master Plan of building Hanoi capital:

Song Hong Water Plant: Expecting to be build at Lien trung commune – Dan Phuong district: capacity in 2020: 300,000m³/day-night; 2030 is 450,000m³/day-night (Opacity of Hong River Surface Water is at high level. Therefore, it is necessary to build primary accumulation ponds to deposit sediment and store water).

Water supply scale: for inner-areas of Hanoi and Melinh, Dong Anh districts and a part of urban areas along the Belt 3 and Belt 4
THANK YOU FOR YOUR ATTENTIONS