Input & Outcome
the Corporation

Phnom Penh Water Supply Authority
with
Water and Sewer Bureau
City of Kitakyushu

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History of Kitakyushu

City of Kitakyushu

* 1901  the first government-managed steelworks in Japan
* Developed with progressing of heavy industry
* 1960s Seriously polluted city
* 1971 Tackle to control pollution

*Gray City* to *Green City → the World Capital of Sustainable Development*

*One of Green Cities Program of OECD*
Waterworks Bureau

Established in 1911
Production Capacity 769,000m³/D
Fighting with polluted water resource
Fighting with water leakage ← Huge difference of altitude
Technical cooperation and Expansion of Water services to neighboring cities
International Cooperation

- Phnom Penh Water Supply Authority (PPWSA) + 8 cities of Cambodia/
  Haiphong of Vietnam/ Dalian of China
- Technical cooperation with MHLW, JICA/ Consulting services
- O & M of facilities/ NRW reduction/ Human resource management
### PPWSA Now and Then

<table>
<thead>
<tr>
<th>1993</th>
<th>Performance Indicator</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Staff / 1,000 Connections</td>
<td>2.97</td>
</tr>
<tr>
<td>65,000</td>
<td>Production capacity, m³/D</td>
<td>300,000</td>
</tr>
<tr>
<td>Not drinkable</td>
<td>Water Quality</td>
<td>WHO Standard</td>
</tr>
<tr>
<td>20%</td>
<td>Coverage Area</td>
<td>92%</td>
</tr>
<tr>
<td>10 hr/Day</td>
<td>Supply Duration</td>
<td>24hr/Day</td>
</tr>
<tr>
<td>0.02 MPa</td>
<td>Supply Pressure</td>
<td>0.2 MPa</td>
</tr>
<tr>
<td>26,881</td>
<td>Number of Connections</td>
<td>210,000</td>
</tr>
<tr>
<td>72%</td>
<td>No Revenue Water</td>
<td>5.9%</td>
</tr>
<tr>
<td>48%</td>
<td>Collection Efficiency</td>
<td>99.9%</td>
</tr>
<tr>
<td>150%</td>
<td>Operation Ratio</td>
<td>37.1%</td>
</tr>
</tbody>
</table>
History

- 1993 First Expert from Kitakyushu
- 2001-2003 Transfer of Distribution monitoring system
- 2003-2006 Capacity Building Project phase 1 supporting by JICA
  - Kitakyushu → PPWSA
- 2007-2012 Capacity Building Project phase 2 supporting by JICA
  - PPWSA/Kitakyushu → Water Supply Utilities of Provincial towns
- 2012-2017 Capacity Building Project phase 3 supporting by JICA
  - PPWSA/Kitakyushu → Water Supply Utilities of Provincial towns

Contents

- Capacity Building
- Formulation of Standard Operation Procedures
- Reduction of Water Losses
- Carbon Emission Reduction Program
Reduction of Non Revenue Water

- PPWSA made big effort to set up 41 zones in the distribution network
- Kitakyushu supported to use equipment and expertise in setting up zone-monitoring system
Monitoring data of the distribution network

→ Effective information for leakage detection.

Decreasing of NRW → Securing financial sustainability
( Water tariff unchanged since 2001 !!)

→ Helping to the most vulnerable people.
Duration: 2003 ~ 2006

Input

- Total Numbers of Trainees: 514 Trainees Ministry/PPWSA/Provincial Waterworks
- Chief Advisor from JICA
- 15 Experts from Kitakyushu (69.5 Man/Months) → 21 PPWSA Counterparts
- 3 Experts from Yokohama (7.5 Man/Months) → 6 PPWSA Counterparts
- Training course in Japan on 3 PPWSA Counterparts
- Financial Supporting by JICA

Outcome

- Capacity of O&M of counterparts was improved.
- Standard Operation Procedure on operation and maintenance of water treatment plant and water distribution network, securing the sustainability of supply of water for the city.
  - Securing *drinkable water from Tap* to million of people.
  - Effective and efficient operation, keeping the *cost of water low.*
Input and Outcome
Capacity Building Phase 2

Duration: 2007 ~ 2012

Input
- 26 Kitakyushu experts (166 M/M) and 15 PPWSA experts
- 102 Counterparts from 8 provincial waterworks/
  9 Counterparts from Ministry
- Financial Support from JICA

Outcome
- Capacity of the operation and maintenance of 102 staffs from 8 provincial waterworks have been improved.
- 8 provincial waterworks can supply clean water which almost follows the Cambodian Water Quality Standard in 24 hours a day.
- Helping the sustainable growth in financial aspects for enabling the future investment to expanding supply network.
ありがとうございました！

Thank you!