Improvement of Water Supply System in Phnom Penh

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- Introduction of Kitakyushu Waterworks
- Dramatic Success in Phnom Penh
- Conclusion

Introduction of Kitakyushu Waterworks

2008

- 1911 Start to water supply
- Water supply capacity: 769,000 m³/day
- Population served: 990,724 capita
- Water resource: 11
- Water treatment plant: 5
- Service reservoir: 47
- Distribution blocks: 86
- Total pipe length: 4,250km

History for International Cooperation

JICA Partnership Program in Dalian, China
2001 ~ 2003
2005 ~ 2007
2008 up to now

Phase 1: 2003 ~ 2006
We are carrying out international cooperation by request of national government and JICA.

Phase 2: 2007 ~ 2011
JICA technical cooperation project in Cambodia

【Accepting】1991 ~ 1997
JICA technical cooperation in Egypt
1993 ~ 1997
1,192 participants from 120 countries
82 JICA experts for 7 countries

Dramatic Success in Phnom Penh

1993
- 22 staffs
- 65,000 Capacity (m³/day)
- 25% Population Served
- 10 hr/d Time of Water Supply
- 0.2 kgf/cm² Ave. pressure
- 26,881 Connections
- 72% NRW rate
- 48% Water tariff payment rate

2006
- 4 staffs
- 235,000 Capacity (m³/day)
- 90% Population Served
- 24 hr/d Time of Water Supply
- 2.5 kgf/cm² Ave. pressure
- 147,000 Connections
- 8% NRW rate
- 99.9% Water tariff payment rate
1. **Facilities**
- Financial assistance of Japan, France, WB, ADB
  - Rehabilitation & expansion of water supply facilities
  - Establishment of customer database system, mapping system and block distribution system

2. **Human resources**
- Dispatching expert (1999~2002, Kitakyushu)
- JICA Partnership Program (2001, Kitakyushu)
- JICA technical cooperation (2003~2006, Kitakyushu & Yokohama)

3. **Governance (PPWSA Identity)**
- Inter compliance
- Measures against non-payment

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**Conclusion**

All of good facilities, good human resources and good governance are necessary to reach for the dramatic success like PPWSA.

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**Block Distribution**

- Block distribution system
- Data Monitoring system on Block distribution system

- Maintain & Analyze Block data (Flow, Pressure, etc)

- Estimate NRW of every Blocks analyzing Block data

- Carry out water leak or illegal connection survey on the worst NRW Block only.  

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**Data Monitoring System on Block Distribution**

**JICA Project**

**PPWSA**

- Central Units
- Sending Data
- Recording Data
- Analyze Data

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**Income from Water Tariff**

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<tr>
<th>Year</th>
<th>NRW 10%</th>
<th>Non-Payment</th>
</tr>
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The difference: 7 times

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**Dramatic Success on PPWSA**

- Non-Revenue Water

- Income from Water Tariff

- NRW 10%

- Non-Payment

- The Difference

- 92%

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**Dramatic Success on PPWSA**

- Non-Revenue Water

- Income from Water Tariff

- NRW 10%

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- 92%

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