



## JICA Partnership Program with Municipal Government of Kitakyushu City

*Technical and Equipment Transfer  
to Phnom Penh Water Supply Authority*


*Waterworks Bureau of Kitakyushu City*

## Current Situation in Phnom Penh Fine Facilities for Water Supply

- All of them has been equipped in last 10 years
- Good financial condition



### Problem in the future

- Expansion of service area
- Maintenance of the water supply facilities
- Improvement of water quality
- Human resource development




## What is the Required for the Maintenance?

Main work of the maintenance is repair and leakage investigation.

But they are not urgent because of all renewed facilities.

*Rather than them!*



## The data management precedes repair work


To get data as indexes of the maintenance



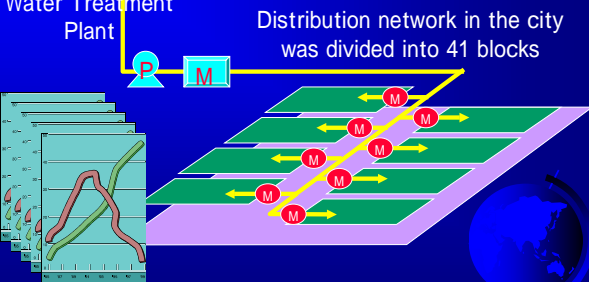

### The data management on distributed water

(Production management)

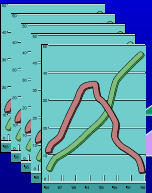
## Completed Water Distribution Block




Water Treatment Plant



Distribution network in the city was divided into 41 blocks



Phnom Penh City had achieved at this stage by themselves



## Problems in Management of the Data

Collecting the Meter-data is collected by manpower.

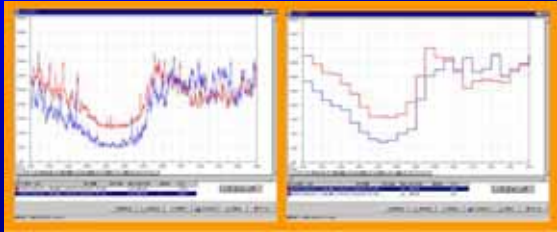


To make data collecting more efficient and precise ...



## Difficulties of the Manpower

- Collecting data once a hour is maximum
- To monitor all of the 41 block everyday is impossible.



## Request for Technical Cooperation to Kitakyusyu City

1999.04 Dispatch JICA Expert to PPWSA

Maintenance and operation on water supply facilities

1999.10 Propose to make distribution block and carry out data management

distribution block : Project aid by ADB

data management : Dispatch JICA Expert

2000.01 General Director of PPWSA visited Japan and made courtesy call to General Director of Kitakyushu Waterworks

"Kitakyusyu City would cooperate with PPWSA within JICA scheme"

2000.05 Dispatch electricity staff to PPWSA as a JICA Expert

2000.12 JICA approved Kitakyusyu City's proposal of telemeters



## Targets and Subjects of This Project

To build up a system and skill to evaluate the condition of the water supply facilities by themselves

Is it necessary to do something for maintenance now?

YES or NO

Because .....!

Evaluation of Facilities

Plan on countermeasures

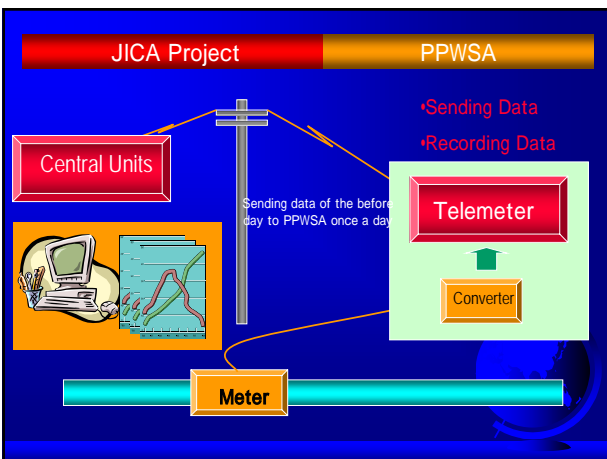
To Prevent

To Repair

## Supporting the Data Management of PPWSA

Solving difficulties on data collecting by manpower

Constructing a system for data collecting by reusing equipment of Kitakyusyu City



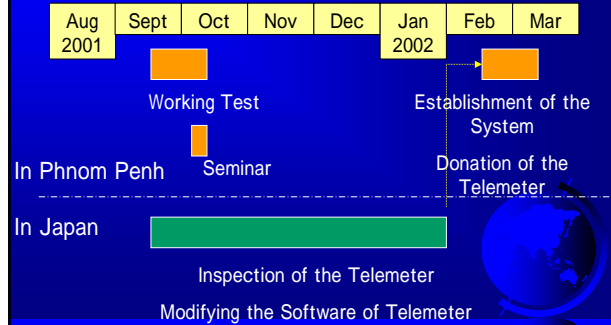
## Activities of the Project

1. Working Test
2. Building up monitoring room
3. Holding a seminar to introduce new system
4. Inspecting and repairing equipment in Japan
5. Translating software into English in Japan
6. Building up central units of the system
7. Donating equipment
8. Transferring skills on the telemeter system

## Dispatched Experts

Project Manager	Mr. Kazumasa Mori	days 9
Chief of Seminar	Mr. Hirotohi Matsuo	9
Assistant Chief of Seminar	Mr. Tetsuya Ueda	9
System Engineer	Mr. Satoshi Kiyama	5 9
Electric Engineer	Mr. Kazuo Takayama	2 2
Project Coordinator	Mr. Kazuya Kubota	5 9

## Process Chart of the Project



## Activities in Phnom Penh

4<sup>th</sup> week Sep 2001

•Interim Report

to JICA

to Embassy of Japan

to General Director of PPWSA



•Seminar

### Contents of the Seminar

- Outline of the Waterworks bureau of Kitakyusyu City
- Block Distribution of Kitakyusyu City
- Data Monitoring System Results of Telemeter Working Test in Phnom Penh



## Fix Locations to Set Up the 5 Panels

Location of 3 panels out of 5 is determined to be around water outlet of three water treatment plant.

To get exact data



## Activities in Phnom Penh Feb 2002

2<sup>nd</sup> Week

Looking for parts

•Designing Inner Local Station

•Making Inner Local Station



## Activities in Phnom Penh Feb 2002

4<sup>th</sup> week

•Working Test of Outer Local Stations

•Establishment of Inner Local Stations



## Targets and Accomplishments

Items	Results	Remarks
Working test	90%	Temperature problems
Communication Test	100%	No problem on current lines
Establishment of Central Units	100%	
Seminar on Introducing the System	100%	
Repair and Domination of equipment	100%	
Establishment of 5 Local Stations	90%	Under the construction of Chruoy Changvar T.P.

## Continuity of the Project Results

- Improvement of the basic skills for operating the telemeter system
- Time to accustom themselves to using the system



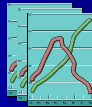
Followed up by Japanese training and JICA experts

Continuous operating the data collecting system will be expected

## Forward Suggestions

Task: Training engineer for analyzing and evaluating data

Data Collecting System



Evaluating Facilities  
↓  
Planning Measures for the Maintenance

To Prevent

To Repair

## Other Problems in Cambodia

Water Stolen



Inexpert Repair



Cause of Leakage



## The Reason for Increasing Stolen Water

Unit : US\$

Items	Cambodia	Thailand	Malaysia	Japan
GDP/capita	299 \$	1993 \$	3,610 \$	39,039 \$
Water Charge	24.3 \$	26.8 \$	37.2 \$	89.3 \$
W.C./GDP %	8.13%	1.34%	1.03%	0.23%

Water charge ;10m<sup>3</sup>/month × 12 months

Water charge in Japan is referred to Kitakyushu city