Approach for WRMS Development

For Irrigation System

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I. Basic Process of System Development

Planning Stage

Identification of Frameworks
- Organization structures
- Legislations
- Policies and Strategies

Preparation of Development Plan
- Determine system scale considering purpose and conditions
- Roadmap, Finance, etc.

Coordination Meeting

Preparation of O&M Plan
- Re-structuring for system O&M
- Securing manpower
- Calibration of Model

Implementation
- Share all information one and the others

Design Stage

Assessment of Current Situation
- Water Resources
- IT (Existing S/W, server)
- Monitoring equipment (sensors, gauges, etc.)

Conceptualization of WRM System
- Customized model development for WRM
- Monitoring system
II. Planning Stage

**Business Process Re-engineering & Information Strategy Plan**

- To build systematic and consistent information system
- To accomplish the business objectives in linkage with IT strategy and business process

![Integration View of Master plan, BPR, and ISP](image)

- Analyze business process to innovate and improve efficiency
- Establish detailed ICT implementation plan for each system
- Prevent of duplicate and excessive investment
III. Design Stage

Example of WRMS Configuration

Measuring Data
- Water Level
- CCTV
- Rainfall Data
- Soil Moisture

Water Resource Management System

<table>
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<tr>
<th>Facility</th>
<th>Monitoring</th>
<th>Data Base</th>
<th>Water Supply</th>
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<td>Information</td>
<td>Water Level</td>
<td>Measuring Data</td>
<td>Analysis of supply capacity</td>
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<td>Safety</td>
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<td>GIS Data</td>
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<tr>
<td>Record</td>
<td>Soil Moisture</td>
<td>Rainfall data</td>
<td>Water supply plan</td>
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GIS / Modeling
- Establishment of GIS DB
- Network Modeling
- Irrigation System, basin, etc.
- Analysis of water use efficiency

Information (Web / Mobile)
- Network Status
- Water supply state
- Facility
- Supply Plan
- Cyber Call Center
- Field info. input (Mobile)

WRMS DB
- GIS
- Facility
- Measuring Equipment
- Supply State
- Supply Plan
- System link with Relevant Organizations
III. Design Stage

- Set up WRMS Development Team *(Exclusive Team for WRMS)*
- Back-up from Strong Leadership

Water Resources Sector

IT Sector (System S/W)

Monitoring Equipment Sector

Complementary Cooperation & Knowledge Sharing
Modelling for Water Management

- Detailed design of basin model and schematic plan for downstream of Water Resources
- Select appropriate simulation and optimization models in consultation with users
- Design customized algorithm (water allocation, flood management, etc.)
- Provide alternative scenarios of water resources utilization reflecting irrigation practices
- Define necessary system components for WRMS

Why to monitor?
- To find out water distribution
- To find out balance between demands and available water

Where to monitor?
- Water distribution points
- Water intersection entrance

How to display?
OUTLOOK for WATER MANAGEMENT
Corresponding to Climate Change

- **Single Channel**
  - Integrate Legacy and New Water Monitoring Equipment

- **Single Window**
  - Develop Integrated Management System and Standard Database

- **Single Plan**
  - Establish Water Management Plan for future