Regional exchange on IWRM experiences in the Mekong River Basin
15-16 & 17 October 2014 - Lao Plaza Hotel, Vientiane, Lao PDR

Water Resources Data-Information Management of Lao PDR

Phaylin BOUAKEO
Department of Water Resources
16 Oct 2014

Outline

Introduction

Work plan on water resources data-information management

Implementation on water resources data-information
The Department of Water Resources, abbreviated as DWR, is a department under the organizational structure of the Ministry Natural Resources and Environment (MoNRE). The DWR has a mandate as advisory body to the MoNRE for management, development, conservation, rehabilitation, monitoring and settlement of the problems on water resources throughout the country.

Survey and coordinate the monitoring of water quality, inventory and categorize river basins and rivers and develop National Water Quality Standards and submit to the Government for approval;

Compile and manage database for water resource management;

Coordinate with other parties on survey, evaluation and monitor surface and underground water quality and utilization;
Data Collection

- Dept of Meteorology and Hydrology (DMH)
- Dept of Irrigation (DoI)
- Natural Resources and Environment Instituted (NREI)
- Center for Environmental Health and Rural Water
- Water Supply Authority (WASA)
- Dept of Policy and Energy Planning
- Etc

Data Collection

- Provinces of Natural Resources and Environment (PoNRE)
- Water Sector
- Meteorology and Hydrology Sector
- Water Use: Irrigation, Energy, Fishery, Land management and etc.
- Sent data to DWR
Data Collection

- Agencies
- Provinces
- Districts
- Villages

- Districts of Natural Resources and Environment (DoNRE)
  - Water Unit
  - Meteorology and Hydrology Unit
- Water Use: Irrigation, Energy, Fishery, Land management and etc.
- Sent data to PoNRE

Data Collection

- Agencies
- Provinces
- Districts
- Villages

- Survey and collection data as such: Water level, Water Quality …
- Sent data to DoNRE
Outline

- Work plan on water resources data-information management

National Water Resource Strategy from now until 2020

**Objective**: The overall objectives of the National Water Resource Strategy from now until 2020 is the utilization and integrated development of water resources for the utmost benefits and sustainability, while ensuring environment protection, effective climate change adaptation and livelihood improvement.

**Targets:**
- **Develop coordination** mechanism for effective and efficient water resource management and development.
- **Ensure faire water use allocation and arrangement** for all sectors at national, basin and sub-basin levels.
- **Improve water resource management** to meet water needs both in terms of quantity and quality in river basin and increase measures to protect drought, flood, erosion and subside in river basin areas.
Water Resources Data-Information Strategy

Program 5: Collection, analysis and management of water resource data and information

- Action 1: Strengthen water resource data and information management and system
- Action 2: Strengthening water resource data and information management capacity
- Action 3: The national water resource assessment, analysis and monitoring
- Action 4: Establish water resource information exchanging mechanism

Activities 2014

- Water Resources Inventory Guideline
  - Surface water, Ground water, Water Quality and Water Use
- Data Base System
  - Collection Data
  - Data Base of Water Resources
- Capacity Building
  - GIS for River Basin Management
- Water Resources Data-Information Management Agreement
  - Draft on Water Resources Data and Information Assessment
  - Draft on Water Resources and Information Agreement
Water Resources Inventory Guideline

- **Sucre water**: River Body, Wetland and Reservoir
- **Water Quality**: Sucre Water and Ground water (pH, BOD, COD, Temperature)
- **Ground Water**: Ground water access point, aquifer, Ground water use and etc.
- **Water Use**: Hydropower, Irrigation, Water Supply, Fishery, Navigation and etc.

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Water Resources Inventory Guideline

**Surface Water Inventory Guideline**

- River Basin Atlas of the Lao PDR
- Water Quantity of Surface Water
River Basin Atlas of the Lao PDR
<table>
<thead>
<tr>
<th>ID</th>
<th>Name of River Basin</th>
<th>Currency</th>
<th>Area (Km²)</th>
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</table>
Water Quantity of Surface Water

Nam Xong Sub-River Basin

Xe Bang Fai River Basin

Xe Bang Hieng River Basin

Data Base System
Data Need

Collection Data
Survey Ground water
Water Quality Monitoring

Flood and Damage
Hydrological Network

Conventional Staff Gauge

Hydro-station 123
Rain fall stations 117
Discharges stations 59

Slope Gauge

Associated rain Gauge

Hydrology Data network (Automatic System)

Cambodia 12
Lao PDR 12
Thailand 11
Vietnam 12
China 2
Total 49

MRC Hydro-met Network (2010)
### Mekong-HYCOS Achievement and Progress

#### 2.10 Installation of Equipment in Lao PDR (12 stations)

- **Mahaxay**
- **Phienluang**
- **Nape**
- **Se Bangfai**
- **Sopnam**
- **Kengdon**
- **Pakse (AHNeP)**
- **Mixay**
- **Vientiane KM4**
- **Veunkhen**
- **Munong Ngoy**

### Monitoring and Forecasting

**1. Water Level (daily)**

**2. Focusing Water Level**

**3. Water Level at Mean River Basin in Laos**

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<tr>
<th>No.</th>
<th>Station/Location</th>
<th>Recent (cm)</th>
<th>View (cm)</th>
<th>wordpress</th>
<th>Recent</th>
<th>View</th>
<th>Foreseen 1 wk</th>
<th>Foreseen 1 m</th>
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<td>15.61</td>
<td>10.66</td>
<td>15.61</td>
</tr>
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<td>8</td>
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<td>15.61</td>
<td>10.66</td>
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<tr>
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<td>Nong Ngeon (AHNeP)</td>
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<td>10.66</td>
<td>15.61</td>
<td>10.66</td>
<td>15.61</td>
</tr>
</tbody>
</table>

Remark: Date of Issue
Historical data of flood

- 1966 Flooding in Vientiane capital
- 2005 all countries
- 2008 Mekong river (Vientiane)
- 2009 Typhoon Ketsana (attapue, sekong)
- 2011 Mekong River at Pakse, Flash flood in small river and main tributaries of Mekong

Another year are normal year.
- Dry year 1998, …2010

TD RAMMASUN n° 9 (18-22 July 2014)
TD RAMMASUN report 18 July 2014

Capacity Building

Application on GIS for River Basin:
- Nam Xong Sub-River Basin, Houy Nam Sai Sub-River Basin
- Staff of Louang Nam Tha Province of Natural Resources and Environment
Water Resources
Data Information Management Agreement

- Draft on Water Resources Data and Information Assessment
- Draft on Water Resources and Information Agreement

Process:
- Setup Working Group
- Review any document
- Discussion among water resources sector

Work Plan 2015

Inventory
- Surface water and Wetland: Testing and apply
- Water Quality and Ground Water

DataBase
- Develop Database
- Metadata and Data Directory

Data-Information Agreement
- Develop water resources data-information assessment
- Develop water resources data-information agreement
Issue of Data Information Management

Human | Budget | Equipment | Cooperation | Data Sharing

Conclusion

Inventory Guideline

Data Base System

Capacity Building

Data-Information Agreement
Thank you

Phaylin BOUAKEO
Department of Water Resources, Lao PDR
Email: msphaylinbouakeo@qamil.com; phaylinbouakeo@yahoo.com
Cell phone: 856 2022201990
Office Telephone: 856 21 241 7444