Role of MoWR under NHP

Avanish Kant, Sr. Hydrogeologist

14th September, 2015, New Delhi
NHP – Project Background

Achievements of HP-I & HP-II:-

- establishment of hydro-meteorological equipment in the States covered under the Project
- establishing the protocols for water resources data collection, validation, storage and dissemination
- Institutional development & capacity building
- development of various software like WISDOM, GEMS, and now web based e-SWIS, e-GEMS, e-WQIS etc.
- Real-Time Decision Support System (DSS-RT) for flood forecasting & reservoir operations in BBMB & Upper-Krishna & Bhima river basins in Maharashtra. This has resulted in savings of upto Rs 100 crore per year due to floods in these river basins.
NHP – Project Background
Achievements of HP-I & HP-II :-

• Decision Support System for water resources planning (DSS-P) in 13 river sub basins in 9 States. This has resulted in savings of upto Rs 15 crore in some of these basins by better planning (e.g. in Pune & Kerala).

• Development of Hydrological Design Aids (HDA) for designing cost effective irrigation and hydraulic structures.

• Establishment of Real-time Water Quality Monitoring Systems at 13 sites in Ganga river basin. Extensively used during the Kumbh mela in Allahabad in 2013.

• Application of advanced geophysical surveys, including Heliborne survey for aquifer mapping for the first time in the country.
Automatic Rain Gauge Replaced manual rain gauge in Odisha during HP-II project
Outside the Box

- INSAT Antennae
- Sensors
- Earthing Rod
- Solar panel

[Image of outdoor equipment with labeled components]
Inside the Box (NEMA BOX)

Transmitter

Data logger

Connection to Antennae

Connection to Sensors

Solar Charger

Sealed Battery
Dish on Rooftop

Raw Data Module

Data Decoding Module

DAS Server

Database and backup Server
Wind Direction and Velocity

Solar Radiation

Temperature and Humidity Sensor

Pressure Sensor inside Box

Rain Gauge

Solar Radiation
Maharashtra
Real Time Hydro-met 237 stations, 46 reservoirs

[Image of a map showing hydro-met stations in Maharashtra]

www.rtsfros/krishna/source/krishna.htm
NHP – the river basins...!
## NHP – The Structure

Nodal Implementing Ministry – MoWR, RD & GR

<table>
<thead>
<tr>
<th>Central Organisations</th>
<th>(MoWR)</th>
<th>(Others)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central Water Commission (CWC),</td>
<td>Bhakra Beas Management Board (BBMB),</td>
</tr>
<tr>
<td></td>
<td>Central Ground water Board (CGWB),</td>
<td>Damodar Valley Corporation (DVC)</td>
</tr>
<tr>
<td></td>
<td>National Institute of Hydrology (NIH),</td>
<td>Survey of India (SoI),</td>
</tr>
<tr>
<td></td>
<td>Central Water and Power Research Station (CWPRS),</td>
<td>National Remote Sensing Centre (NRSC),</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Central Pollution Control Board (CPCB),</td>
</tr>
</tbody>
</table>
NHP – The Structure

Nodal Implementing Organisation – MoWR, RD & GR

<table>
<thead>
<tr>
<th>State organisations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SW</strong></td>
<td><strong>GW</strong></td>
</tr>
<tr>
<td>• Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Kerala, Maharashtra, Karnataka, Odisha, Telangana, Uttar Pradesh, West Bengal</td>
<td>• Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Kerala, Maharashtra, Odisha, Telangana, Uttar Pradesh, West Bengal</td>
</tr>
<tr>
<td><strong>SW + GW</strong></td>
<td></td>
</tr>
<tr>
<td>• Assam, Goa, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Delhi, Puducherry</td>
<td></td>
</tr>
</tbody>
</table>
Role of MoWR in NHP

MoWR is the Project Implementation Ministry:

• Overall Project Monitoring & Evaluation, Administration, Coordination, Technical oversight and budget allocation.
• Financial Management: quarterly Financial Report; consolidate disbursement claims to CAAA; Fund flows under the project, Audit Agency.
• Facilitate MOUs among central and state agencies in regards to data sharing.
• Put in place the Technical and Management Consultancy (TAMC).
• Prepare MOU for collaboration with national and international research institutes.
• Prepare data sharing protocol of classified and non-classified with states and centre.
• Any other matter related to the Project
Role of MoWR in NHP

How shall MoWR implement NHP?

• Technical and Management Consultancy
  – Technical and Program Management assistance for Project Implementation
  – Support to all implementing agencies to assist with project planning, procurement, technical developments, training and capacity building
  – support for project reporting and monitoring project progress (financial and physical) through MIS
  – For entire project duration
    – based in Delhi with small regional offices

• Financial Consultancy for auditing
• MoUs with National and International organisations
• Strengthen National Water Informatics Centre
Role of MoWR in NHP

Support through organisations under MoWR

CWC

- Facilitate real-time data acquisition system through Earth Receiving Station
- Web-based Database management system (eSWIS)
- Accessibility to real time and integrated River Basin information - DEM, ET, Weather forecast, historical database.
- Software and support for development of State-WRIS.
- Provision of linkage with States’ Data Centres
- Regional River Basin modelling Tools
- Flood forecasting and early warning system coupled with weather forecast
- Water Resources Assessment at River basin scale.
Role of MoWR in NHP

Support through organisations under MoWR

CGWB

- Standardization of structure for data storage by the State agencies
- up-gradation of eGEMS
- Optimization of network for monitoring of water levels & water quality in consultation with States
- Ground water modeling
- Preparation of basin management plan along with CWC for selected basins
- Knowledge Sharing through trainings, meetings & reports
- Technical assistance to State Agencies on any specific requests
Role of MoWR in NHP

Support through organisations under MoWR

NIH

- Co-ordinate & Provide trainings and capacity building on various aspect of water management to Implementing Agencies.
- Lead R & D (including PDS) initiatives envisaged under NHP.
- Develop Generic DSS for Water Planning & Management.
- Develop annual training program/ calendar
- Collaborate with potential National/ International research Institutions to extend the training and courses and strengthen Hydro-informatics expertise in the country.
- Technical assistance to State Agencies on any specific requests
Expectations from States

- Data integration and improving accessibility through India-WRIS
- Design of hydromet network in consultation with MoWR
- CWC/CGWB/NIH shall develop Macro Models. The States need to ensure
  - a State PMU with staff
  - adequate staff to work along with central organisations
  - capacity building of staff
  - develop micro level models
  - the models to be developed by States need to be in sync with the macro models
Thank You