

Role of MoWR under NHP

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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.

Automation



**Automatic
Rain gauge**

**Manual
Rain gauge**

Automatic Rain Gauge Replaced manual rain gauge in Odisha during HP-II project

Rain and Snow Gauge



22/05/2014

Outside the Box

INSAT Antennae

Sensors

Earthing Rod

Solar panel

22/05/2014



Inside the Box (NEMA BOX)

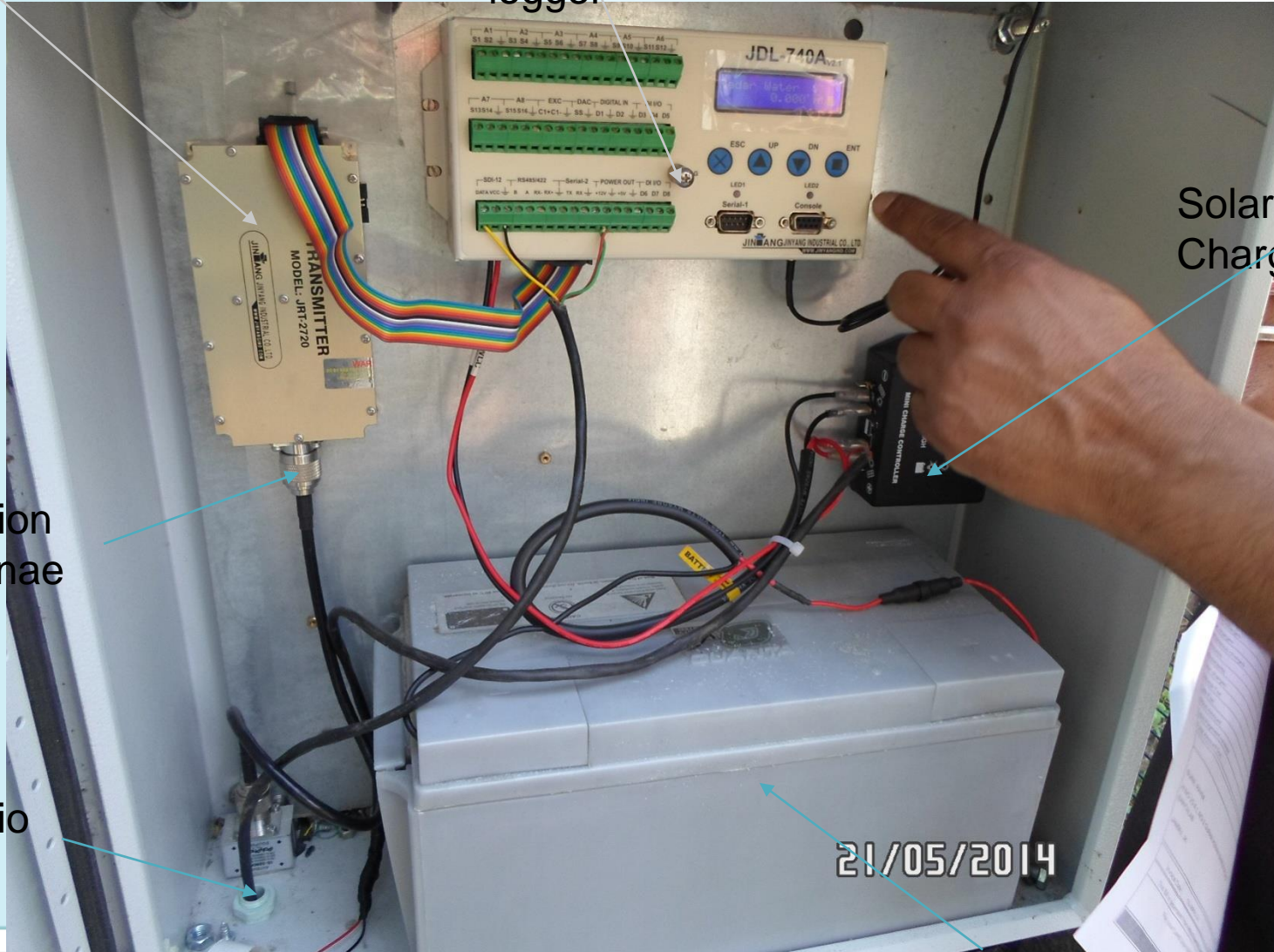
Transmitter

Data logger

Solar Charger

Connection to Antennae

Connection to Sensors



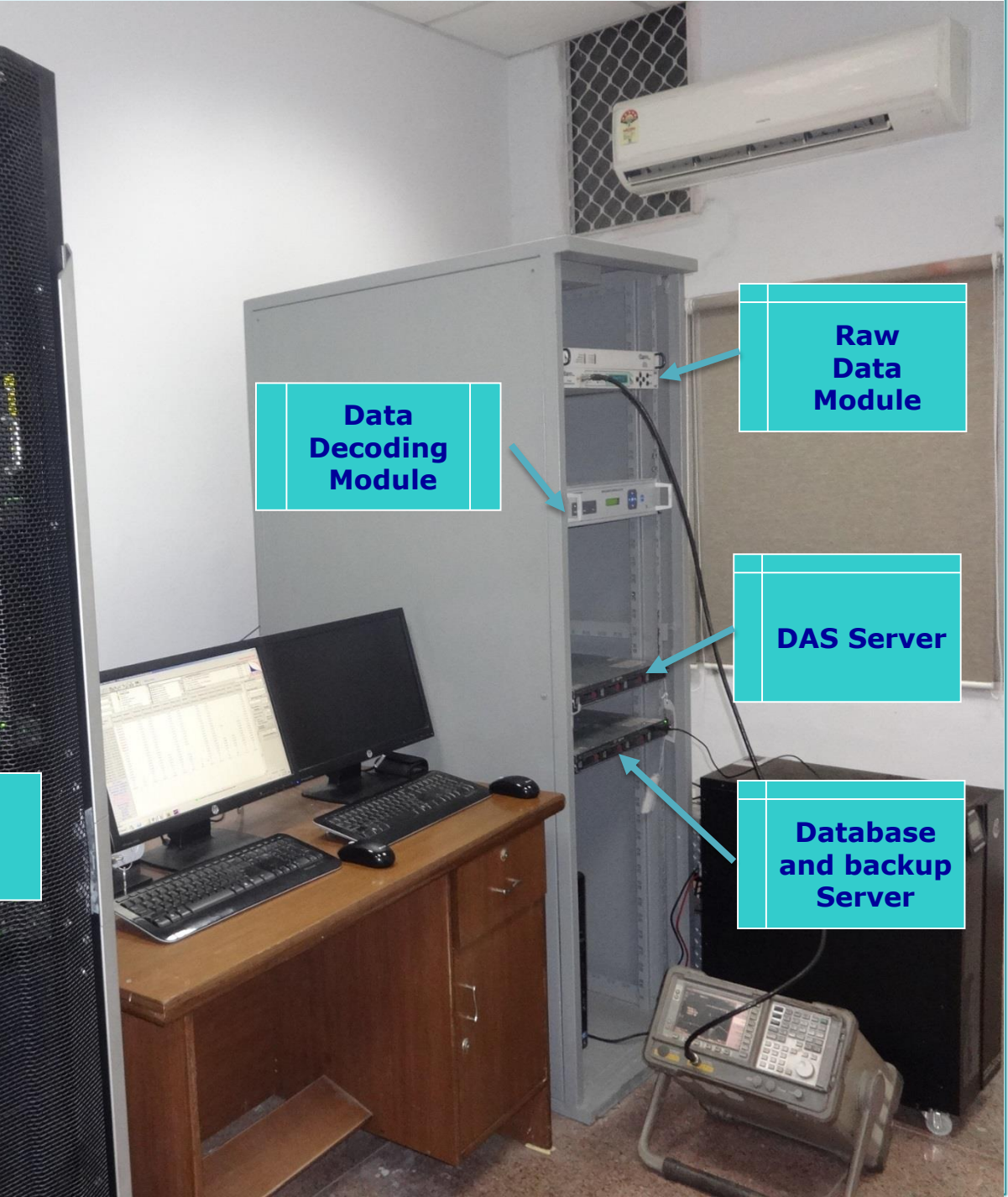
Sealed Battery







Dish on Rooftop

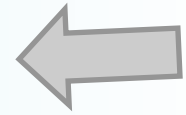


Data Decoding Module

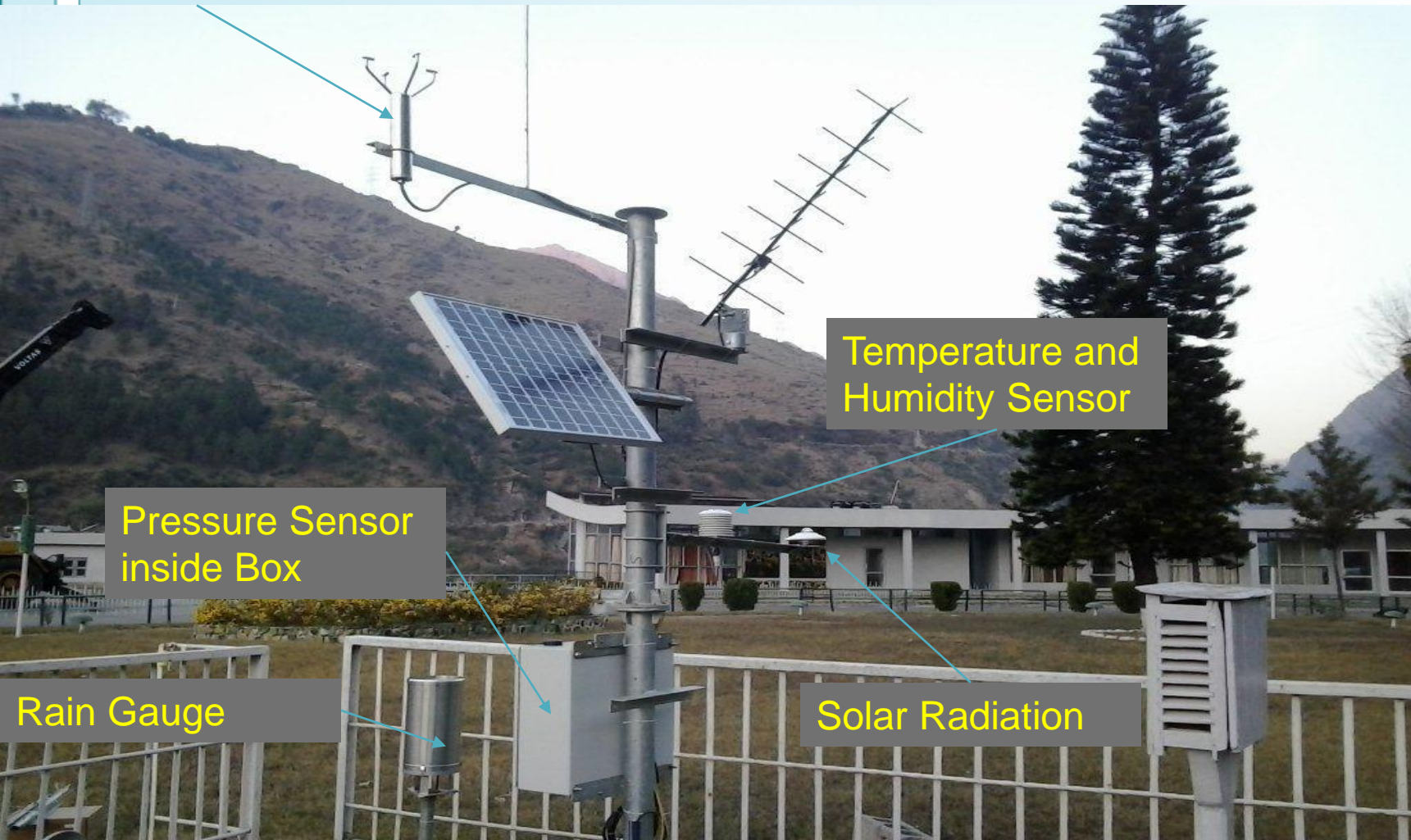
Raw Data Module

DAS Server

Database and backup Server



Wind Direction
and Velocity



Temperature and
Humidity Sensor

Pressure Sensor
inside Box

Rain Gauge

Solar Radiation



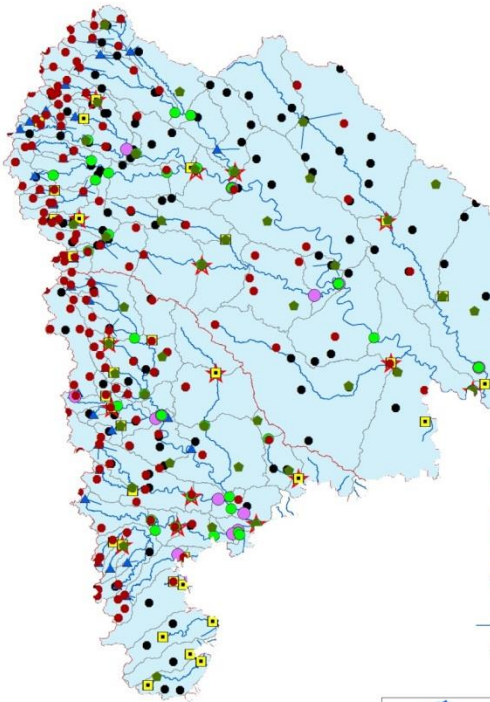
Maharashtra

Real Time Hydro-met 237 stations, 46 reservoirs

Real Time Data Acquisition System for Krishna And Bhima Basin

RTSF & ROS for Krishna & Bhima Basins in Maharashtra

NAM Catchments with Hydro-met Stations



Real Time Data Acquisition System for Krishna And Bhima Basin

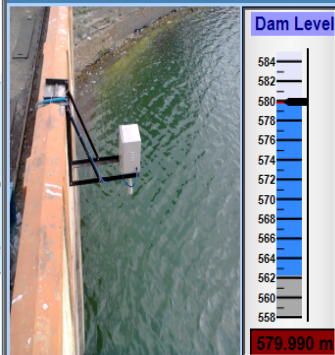
File View History Data View Basin Data Entry Setting Login Logout

Automated Measurements of Gate Opening Details

Time : 23/09/2013 13:04:42

Select Basin : Bhima Select Location : Vir Taluka : Purandhar District : Pune Longitude : 74°05'48" Latitude : 18°07'20"

CURRENT DATA



Discharge Rate : 0.00000 Cumecs

Irrigation Outlet Disch. Rate : 0.00000 Cumecs

Power Outlet Disch. Rate : 0.00000 Cumecs

LAST UPDATED TIME 23/09/2013 14:00:00

ALARMS

ACK. EVENTS HISTORY CLOSE

CURRENT GATE OPENING



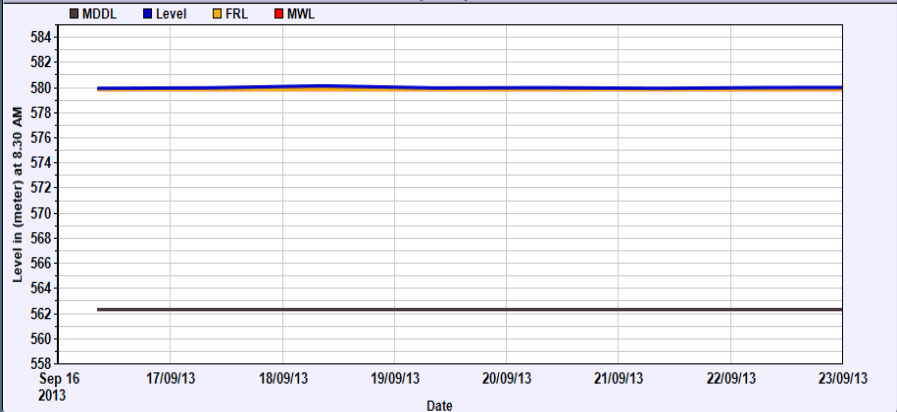
HYDRAULIC DATA

Gross Contents :	239.145 McuM	MDDL :	562.32 mtr
Live Contents :	236.006 McuM	MWL :	579.85 mtr
% Contents :	100.000 %	FRL :	579.85 mtr
Type of Sensor :	Radar	HFL :	579.85 mtr

Graphical Last 7 Days's Data Tabular Last 7 Days's Data

Level Discharge Rate

Last 7 Day's Daily Dam Level



Note : Reservoir Level in mtr

Tabular Data

NHP – the river basins...!



NHP – The Structure

Nodal Implementing Ministry – MoWR, RD & GR

Central Organisations

(MoWR)

- Central Water Commission (CWC),
- Central Ground water Board (CGWB),
- National Institute of Hydrology (NIH),
- Central Water and Power Research Station (CWPRS),

(Others)

- Bhakra Beas Management Board (BBMB),
- Damodar Valley Corporation (DVC)
- Survey of India (SoI),
- National Remote Sensing Centre (NRSC),
- Central Pollution Control Board (CPCB),

NHP – The Structure

Nodal Implementing Organisation – MoWR, RD & GR

State organisations

SW

- Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Kerala, Maharashtra, Karnataka, Odisha, Telangana, Uttar Pradesh, West Bengal

GW

- Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Kerala, Maharashtra, Odisha, Telangana, Uttar Pradesh, West Bengal

SW + GW

- Assam, Goa, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Delhi, Puducherry

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