National Hydrology Project

Jal Manthan

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Pre Hydrology Projects

NHP – Moving Forward

HP-I (1995-2003)

HP-II (2006-2014)

NHP

Hydrology Project –II (2006-2014)

For the first time in the country

- **DSS for water resources assessment and planning** in 13 river sub basins, (Rs 15 crore saved for Pune water supply scheme, several crore of Rs saved in another scheme in Kerala, etc.
- Real-Time **DSS for flood forecasting & reservoir operations** in Bhakra & Upper-Krishna & Bhima river basins. (Rs 100 crore per year saved from crop and other damages)
- **Real-time Water Quality Monitoring Systems** at 13 sites in Ganga river basin.
- **Pilot Project on Aquifer Mapping** through Advanced geophysical surveys (Heliborne survey)
- Development of **web-based database management software for surface, ground and Water quality eliminating AMC for states.**

Learnings from HP-I & II

- **There is a need to:**
  - **Extend reliable and timely data management**
  - **Integrate and provide seamless exchange of data through centralized database.**
  - **Cover entire country for benefits to reach all.**

Need for change in current Strategy through:

- **Adoption of River basin approach for**
  - Resources assessment, flood management, reservoir operations, ground water management, drought management etc.
- **State-of-the-art technology – Real Time** systems, **SCADA** systems, **Remote Sensing** tools particularly for the basins scarce with physical data.

National Hydrology Project (NHP)

Objectives of NHP:

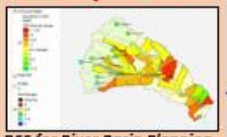
1. **Establish system for timely & reliable water resources data creation and management**
2. **Provide tools/systems for informed decision making for water resources assessment, planning and management.**
3. **Capacity building of the States and Central organisations in Water resources management**

MoWR, RD&GR has proposed NHP as Central Sector Scheme with external support

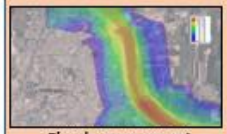
Vision

Better Basin Planning and Operational Decisions in Water Management

C: Water Resources Planning and Operation

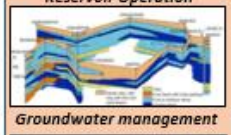


DSS for River Basin Planning



Flood management

Reservoir Operation

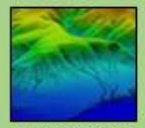


Groundwater management

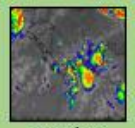
Irrigation management

B: Water Resources Information System

GIS Layers



High Resolution DEM



Weather Forecast

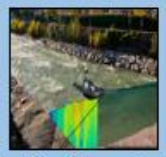
Generic Hydrological Products

Remote Sense Imageries

States-WRIS | Maharashtra | Karnataka | AP | Telangana | Krishna Basin WRIS

A: Water Data Acquisition System

Meteorological Monitoring



River/Reservoir Monitoring

Groundwater Monitoring

Water Quality Monitoring

SCADA for canal/ reservoir

Community monitoring/ crowd sourcing

State Data Centers

D. Institutional Strengthening and Capacity Building

Centre of Excellence

Collaboration with National/ International Institutes

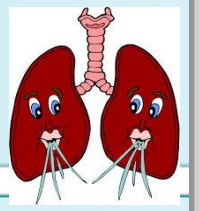
Capacity Building

Outreach and Awareness

NHP- Implementation

Beyond Project

Within Project



Inform Act

Integrate Analyze

Collate Aggregate

Measure Monitor

Economic, Social and Environmental Benefits

Better Planning and Operational Decisions in Water Management

Decision Making Capacity and Institutions; Stakeholder Consultation

Water Information Products

Data/Information Management Systems and Modelling Tools

Water Data Collection and Collation

Technical Capacity and Institutions

Expected Benefits & Outcome

Improvement in the following areas are envisaged:

- **River basin assessment & planning** for both surface and groundwater.
- **Flood management** for early warnings and flood risk maps.
- **Reservoir Operations** with advance stream flow forecast
- **Groundwater Management** through Information tools
- **Drought management** to improve monitoring, forecasting, communications, planning
- **Agricultural services** for irrigation development in rain-fed and management in irrigated agriculture.
- **Water Sector investment planning** including for storages, irrigation, hydropower, groundwater recharge,

Role of MoWR, RD & GR in NHP

Central Support MoWR shall provide following:

- National Water Informatics Centre with
  - Accessibility to real time and integrated River Basin information (neatly 100 layers) including high resolution DEM, ET, Weather forecast, historical database.
  - Software and support for development of State-WRIS.
- Sharing of data through CWC's Earth Receiving Station
- CWC's & CGWB's Web-based Database management system
  - with cloud storage hence no financial burden to States
  - Provision of linkage with States' Data Centres
- Regional River Basin modelling Tools through CWC :
  - Flood forecasting and early warning system coupled with weather forecast
  - Water Resources Assessment at River basin scale.

Role of MoWR, RD & GR in NHP

Central Support MoWR shall also provide the following:

- Technical and Management Support (through (TAMC/CWC/CGWB)
  - Finalisation of specifications and Terms of reference of consultancies, Preparation and evaluation of bids etc.
  - Technical support on project implementation
- Training program through NIH/NWA/RGI
  - Training program development in all the aspects of project along with academia and R&D institutes across India.
  - Provide trainings
- MIS for project monitoring (financial and physical)
- Regular Auditing
- MoUs with National and International organisations

Role of States

States need to work in close coordination with MoWR and amongst each other & central agencies.

- Dedicated team for project implementation
- Sharing of data on Central database
- Timely submission of PIP, AWP and APP
- Design of hydromet network in consultation with MoWR, RD &GR, CWC, and CGWB
- States' Data integration and improving accessibility through India-WRIS
- River Basin Models for flood forecasting, flash floods and inundation in the affected areas in greater details
- Improved assessment of their basin (or sub-basin) wise water resources.

Thank You