

**NATIONAL INSTITUTE OF HYDROLOGY  
ROORKEE**

**KEY ACHIEVEMENTS DURING 2012-2013**

**A. RESEARCH/ STUDIES**

**I. INTERNALLY FUNDED STUDIES (Completed)**

1. Quantification of Impact of Rainwater Harvesting on Groundwater Availability in Aravelli Hills – Part II; Mathematical Modeling
2. Hydrological Instrumentation and Data Monitoring Planning for Integrated Water Resources Management (IWRM) of the Bina River Pilot Basin
3. Estimation of Snow and Glacier Melt Contribution in Melt Water of Gangotri Glacier at Gaumukh using Isotopic Techniques
4. Hydro-geological Assessment of Ghar Area for Artificial Recharge and Water Management Planning
5. Assessment of Radon Concentration in Waters and Identification of Paleo-Groundwater in Punjab State
6. Snowmelt Runoff Modeling and Study of the Impact of Climate Change in part of Brahmaputra River Basin
7. Impact of Climate Change on Glaciers and Glacial Lakes: Case Study on GLOF in Tista basin
8. Climatic Scenarios Generation for Satluj Basin using Statistical Downscaling Techniques
9. Mathematical representation of Elevation-Area-Capacity curves for Indian reservoirs
10. Event-based rainfall runoff modeling using soft computing techniques
11. Analysis of water management scenarios in Tapi river basin using MIKE basin software
12. Web GIS based snow cover information system for Himalayas
13. Software for frequency analysis in Hydrology

**II. SPONSORED PROJECTS**

1. National Program on Isotope Fingerprinting of Waters of India (IWIN) (Ongoing)
2. Impact Assessment of Landuse on the Hydrologic Regime in the Selected Micro-Watersheds in Lesser Himalayas, Uttarakhand (Completed)
3. Glaciological studies of Phuque Glacier, Ladakh Range, India (Ongoing)
4. Development of Spring Sanctuaries in an Urban and a Rural watershed in District Pauri Garhwal, Uttarakhand (Completed)
5. Decision Support System for Enhancing Productivity in Irrigated Saline Environment using Remote Sensing, Modelling and GIS (Ongoing)
6. The Structure and Dynamics of Groundwater Systems in Northwestern India under Past, Present and Future Climates (Ongoing)

**III. CONSULTANCY PROJECTS (Completed)**

1. Hydro-geological Studies of Jhamarkotra Mines, Udaipur, Rajasthan
2. Hydrographical Area Drainage study for 2x660 MW coal based Super Thermal Power Project Khurja
3. Area Drainage Study for Rourkela Expansion Power Project
4. Evaluation of GOLF hazard & mitigation plan for Lachung basin, Sikkim
5. Snowline estimation snowmelt runoff study and Glacial Lake Outburst Flood Study for Kuri Gongri H.E. Project in Bhutan
6. Hydrological assessment of ungauged catchments

**IV. INTERNATIONAL PROJECTS**

**Hydrology Project (HP-II)**

1. Storm water management in Otteri nullah sub basin, Chennai Corporation, Chennai, Tamil Nadu (Ongoing)
2. Water availability study and supply-demand analysis in Kharun sub-basin of Seonath basin in Chhattisgarh state (Completed)

3. Study of reservoir sedimentation, impact assessment and development of catchment treatment plan for Kodar reservoir in Chhattisgarh state (Completed)
4. Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat. (Ongoing)
5. Groundwater Dynamics of Bist-Doab Area, Punjab using Isotopes (Ongoing)
6. Groundwater Management in Over-Exploited Blocks of Chitradurga and Tumkur Districts of Karnataka (Ongoing)
7. Integrated approach for snowmelt runoff studies and effect of anthropogenic activities in Beas basin (Ongoing)
8. Assessment of effects of sedimentation on the capacity/life of Bhakra reservoir (Gobind Sagar) on river Satluj and Pong reservoir on river Beas (Ongoing)
9. A Comprehensive Assessment of Water Quality Status of Kerala State (Ongoing)
10. Hydrological assessment of ungauged catchments (small catchments) (Ongoing)

**European Union Funded “SAPH PANI” Project- “Enhancement of natural water systems and treatment methods for safe and sustainable water supply in India”**

1. Flow and Contaminant Transport Modeling of Riverbank Filtration (Saph Pani Project-Ongoing)
2. Management of Aquifer Recharge (MAR) and Aquifer Storage Recovery (ASR) (Saph Pani Project-Ongoing)

**IAEA Funded Projects**

1. The Use of Environmental Isotopes to Assess Sustainability of Intensively Exploited Aquifer Systems in North Eastern Parts of Punjab, India (Ongoing)
2. Assessment of Baseflow and its Impact on Water Quality in the Part of Satluj River in India using Environmental Isotopes and Age Dating Techniques (Ongoing)

**BGS-UK (under DFID) Project**

1. Review of Groundwater Resources in the Indo-Gangetic Basin: A Case Study on Resilience of Groundwater in the Punjab to Withdrawal and Environmental Change (Ongoing)

**B. TRAINING COURSES/PROGRAMS**

S N	Training Courses and Workshops organised	Period	Venue
1.	Bank filtration for sustainable drinking water supply in India	April 13, 2012	New Delhi
2.	Hydrology Online	May 18-19, 2012	Roorkee
3.	Training course on using scripting and dashboard in DSS- Planning	June 4-8, 2012	Pune
4.	Using the Dashboard Manager for making scripts in the DSS	June 4-8, 2012	Pune
5.	Workshop on ‘Use of official language in administrative work’	August 24, 2012	Roorkee
6.	Hydrological Investigation Techniques for Water Resource Development & Management	August 27-31, 2012	Roorkee
7.	DSS(P) Sustainability- Issues and Future Plan	August 29, 2012	New Delhi
8.	Training Workshop on “Application of Remote Sensing and GIS in Hydrology”	September 11-13, 2012	Belgaum
9.	Hydrologic modeling using RS/GIS with Special reference to climate change	September 24-28, 2012	Roorkee
10.	Training course on “Storm water management in urban areas” under PDS (HPIL)	September 27-28, 2012	Kakinada
11.	Regionalization of Watershed Response in Ungauged Basins: Special Reference to Flood Estimation	October 15-19, 2012	Roorkee

12.	Hands on Advanced Instruments of Water Quality Testing	November 19-23, 2012	Roorkee
13.	Managed Aquifer Recharge: Methods, Hydrogeological Requirements, Post and Pre-treatment Systems	December 13-14, 2012	Chennai
14.	Hydrological Investigations for Conservation and Management of Lakes	January 15-18, 2013	Roorkee
15.	Training Workshop on "Environmental Hydrology with Special Emphasis on Surface and Groundwater Quality"	January 29-31, 2013	Belgaum
16.	Training course on NIH_ReSyP Software	February 4-8, 2013	Roorkee
17.	Remote sensing and GIS in water resources sectors	February 18-22 2013	WALMI, Anand
18.	Training course on "Application of Remote Sensing & GIS in Water Resources Sector" 18-22 February, 2013 at WALMI Anand.	February 18-22, 2013	WALMI, Anand
19.	Surface Water Data Processing And Its Validation Using HYMOS Software	February 25-March 1, 2013	WALMI, Anand, Gujarat
20.	Three Day Training Course on Hydrological Data Entry & Processing Using SWDES.	February 26-28, 2013	Jammu
21.	Coastal Groundwater Monitoring, Assessment & Management	March 4-8, 2013	Rajkot, Gujarat
22.	Training course on Web based Hydrological Tools	March 12-15, 2013	Roorkee
23.	Rainfall-Runoff Modeling	March 11-13, 2013	Roorkee
24.	Groundwater Investigations and Management in Hard Rock Areas	March 18-22, 2013	DMG, Bangalore
25.	Training program on "Mathematical modeling of embankment breach"	March 19-21, 2013.	CFMS,NIH, Patna

### C. PAPERS PUBLISHED

S.No.	Item	Published
1.	International Journal	42
2.	National Journal	26
3.	International Conference/Seminar/ Symposium	50
4.	National Conference/Seminar/ Symposium	63
5.	Books	03
6.	Chapters in Books	21
	<b>Total</b>	<b>205</b>

### D. SYMPOSIUM/CONFERENCE/WORKSHOP ORGANIZED

1.	Celebration of World Water Day on the theme "Water Cooperation"	March 22, 2013	Dharwad
2.	Brainstorming Session on Stakeholders Cooperation and Participation in Developing IWRM Action Plan	March 21-22, 2013	New Delhi
3.	Regional Workshop on "Water Quality Assessment and Management of Kerala State"	5-6 Feb 2013	Thiruvananthapuram
4.	Presentation workshop on SPSS & ANALUO	January 10, 2013	Roorkee
5.	Stakeholders' Meeting for Pilot Basin Studies	December 21,	Patna

	(IWRM) in Mahi Basin	2012	
6.	Brainstorming session on “Pilot Basin Studies for Integrated Water Resources Management (IWRM) in Bina River Basin”	November 29, 2012	Bhopal
7.	Brain Storming Session on “Pilot Basin Studies”	November 27, 2012	Panaji
8.	National Water Conservation day Celebration	November 19, 2012	Belgaum
9.	Advance Soft Computing Techniques & Hydrological Applications’ (ASCTHA-2012)	October 29 to 2 November, 2012	Roorkee
10.	DSS(P) Applications	October 4, 2012	New Delhi
11.	Stakeholders’ Meeting for PBS on Tawi River	September 5, 2012	Jammu
12.	IWRM Brain Storming Session on ‘IWRM in Yerrakalva Basin’, A.P	August 30, 2012	Eluru
13.	Brain Storming Session on “Hydrological Problems of Hard Rock Areas”	August 2, 2012	Belgaum

#### E. MASS AWARENESS PROGRAMMES

S.No.	Activities	Organised by & Date
1.	World Water Day	IE(I), Roorkee May 9, 2012
2.	Hindi Mas	NIH, Roorkee Aug.15-Sept.14, 2012
3.	Vigilance Awareness Week	NIH, Roorkee Oct.29-Nov.2, 2012
4.	Water Conservation	DRC, Kakinada Nov., 2012
5.	Water Conservation & Water Quality	Roorkee, Nov.19, 2012
6.	Water Conservation & Water Quality	Vill. Sultanpur, Feb.8, 2013
7.	Water Conservation & Water Quality	Vill. Ibrahimpur, Feb.9, 2013

#### F. OUTREACH PUBLICATIONS

1. Thematic calendar on “Integrated Water Resources Management (IWRM)
2. Booklet on “Providing solutions to water problems”
3. Brochure on “Integrated Water Resources Management (IWRM) based Pilot Basin Studies”
4. Technical Magazine (in Hindi) “Jal Chetna”
5. Magazine (in Hindi) “Pravahini”
6. Newsletter “Hydrology for People”

#### G. TRAINING OF PERSONNEL

S.N.	Category	Numbers
1.	Scientists	18
2.	S&T Staff	6

#### H. ANY OTHER

1. NIH obtained ISO 9001:2008 certification on December 13, 2012.