Progress Reports of C. P. Kumar

Brief Resume of Tasks by C. P. Kumar, Scientist ‘G’
National Institute of Hydrology, Roorkee – 247667 (Uttarakhand), India

Year 2019-2020

[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the following studies and sponsored projects:
   - The Regional Hydrological Impact of Farm-Scale Water Saving Measures in the Gangetic Plains (CSIRO) (August 2019 - July 2020)
   - Study of River - Aquifer Interactions and Groundwater Potential at Selected Sites in the Upper Ganga Basin up to Dabrani (NMSHE) (January 2016 - December 2020)
   - Groundwater Fluctuations and Conductivity Monitoring in Punjab - New Evidence of Groundwater Dynamics in Punjab from High Frequency Groundwater Level and Salinity Measurements (BGS) (December 2017 - November 2020)
   - Assessment of Impacts of Groundwater Salinity on Regional Groundwater Resources, Current and Future Situation in Mewat, Haryana – Possible Remedy and Resilience Building Measures (PDS) (December 2017 - November 2021)
   - Ganges Aquifer Management in the Context of Monsoon Runoff Conservation for Sustainable River Ecosystem Services - A Pilot Study (PDS) (December 2017 - November 2021)
   - Improving our Understanding of the Aquifer Systems in Sunderbans (India-UK Water Centre) (June 2019 - November 2019)

2. Prepared a note on “Rain Water Harvesting” required as a backgrounder brief for Niti Aayog.


4. Studied the WALTA Act, 2002 (Andhra Pradesh Water, Land and Trees Act, 2002) and prepared comments on the letter from Mr. H. R. Kameswara Rao regarding distance to be maintained between bore wells.
5. Examined the draft report on *Groundwater Extraction Guidelines* in compliance of the NGT directions and prepared comments.

6. Examined the draft report on “Detection of Arsenic Contamination in Groundwater of Laksar Area, Haridwar District, Uttarakhand” (Sumant Kumar).

7. Review of 9 technical papers for the following Journals –
   - Journal of the Geological Society of India
   - Current World Environment
   - IWRIS Journal
   - Euro-Mediterranean Journal for Environmental Integration
   - Annals of Ayurvedic Medicine
   - Groundwater for Sustainable Development (Elsevier)
   - Current Trends in Forest Research
   - Journal of Hydrology
   - Journal of the Geological Society of India.

[B] TECHNICAL REPORTS


[C] TECHNICAL PAPERS


[D] BOOK CHAPTER


[E] NATIONAL HYDROLOGY PROJECT (NHP)

1. **Coordinator, Purpose Driven Studies (PDS)** till 31.12.2019
   - Coordination of various activities pertaining to PDS proposals received from Implementing Agencies of National Hydrology Project.
   - Processing of PDS proposals for review, revision and presentation.
   - Compiling and updating the status of PDS proposals.
   - Conducted (as Member Secretary, Sub-Committee on PDS) the Sixth R&D Session on PDS during 8-9 August, 2019 at NIH, Roorkee and undertaken follow-up actions.

2. **NHP Meetings**
Attended the 1st meeting of re-constituted Hydrological Information System Management Group (HISMG) on 3.6.2019 at Central Water Commission, New Delhi.

Attended the “Modellers Meet” during 6-7 December 2019 at New Delhi.


[F] TRANSFER OF TECHNOLOGY

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Training Course</th>
<th>Lecture Delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Orientation Training Course for newly appointed Scientists in NIH, organized by NIH at Roorkee during 27-28 May, 2019</td>
<td>▪ An Overview of NIH Activities</td>
</tr>
</tbody>
</table>
▪ Groundwater Data Requirement and Analysis  
▪ Tutorial on Groundwater Balance |

[G] HEAD, GROUND WATER HYDROLOGY DIVISION

➢ Coordinated technical and administrative activities of Ground Water Hydrology division.

➢ Compilation of time allocation for various projects / Scientists of Ground Water Hydrology division.

➢ Prepared a format for monitoring the progress of major sponsored projects.


➢ Compiled state-wise list of major projects under progress in Ground Water Hydrology division.


[H] EXTERNAL PROJECT MANAGEMENT CELL

➢ Follow-up actions related to Chairman, External Project Management Cell (from 3.1.2020).

➢ Conducted (as Chairman) the meetings of External Project Management Cell on 2.1.2020 and 4.3.2020.
### PERMANENT COMMITTEES

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Chairman/Member</th>
<th>Committee</th>
<th>Meetings</th>
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</table>

### SPECIAL PURPOSE COMMITTEES

<table>
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<tr>
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<th>Chairman/Member</th>
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<th>Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Member</td>
<td>To examine and suggest the disciplines for issuing advertisement to the posts – Scientist F(1), D(1), C(3), B(1)</td>
<td>12.4.2019</td>
</tr>
<tr>
<td>2.</td>
<td>Chairman</td>
<td>To evaluate the technical bids received for the purchase of ‘Triple Quadrupole Gas Chromatograph – Mass Spectrometer’</td>
<td>16.4.2019, 29.4.2019, 15.5.2019</td>
</tr>
<tr>
<td>3.</td>
<td>Chairman</td>
<td>To formulate policy for providing computers, printers etc.</td>
<td>25.4.2019, 6.5.2019</td>
</tr>
<tr>
<td>4.</td>
<td>Chairman</td>
<td>To evaluate the technical bids received for the purchase of Ion Chromatograph (IC)</td>
<td>17.5.2019</td>
</tr>
<tr>
<td>5.</td>
<td>Chairman</td>
<td>To consider the revision of emoluments of existing project staff for two specific projects</td>
<td>17.6.2019</td>
</tr>
<tr>
<td>6.</td>
<td>Chairman</td>
<td>To discuss the complaint and financial bid for the purchase of ‘Triple Quadrupole Gas Chromatograph – Mass Spectrometer’</td>
<td>17.6.2019, 1.7.2019, 22.7.2019</td>
</tr>
<tr>
<td>7.</td>
<td>Chairman</td>
<td>Evaluation Committee for recommendation of awards for work in Hindi</td>
<td>25.7.2019, 1.8.2019</td>
</tr>
<tr>
<td>8.</td>
<td>Chairman</td>
<td>Settlement of some issues in T&amp;P items in Computer Centre</td>
<td>15.11.2019</td>
</tr>
<tr>
<td>9.</td>
<td>Chairman</td>
<td>Specifications for procurement of Imaging System (earth resistivity meter for groundwater exploration)</td>
<td>7.1.2020</td>
</tr>
</tbody>
</table>

### MEETINGS ATTENDED

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Group/Committee/Body</th>
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<table>
<thead>
<tr>
<th>No.</th>
<th>Event Description</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3rd meeting of Central Level Expert Group for overall re-assessment of groundwater resources of the country (as on 31 March 2017)</td>
<td>23.4.2019</td>
<td>CGWA, New Delhi</td>
</tr>
<tr>
<td>2.</td>
<td>48th meeting of Working Group of NIH</td>
<td>2-3 May, 2019</td>
<td>NIH, Roorkee</td>
</tr>
<tr>
<td>3.</td>
<td>4th FAR GANGLA Project Management Board meeting and workshop</td>
<td>14.11.2019</td>
<td>NIH, Roorkee</td>
</tr>
<tr>
<td>4.</td>
<td>73rd meeting of Technical Advisory Committee (TAC)</td>
<td>17.12.2019</td>
<td>NIH, Roorkee</td>
</tr>
</tbody>
</table>

**[L] EDITORIAL BOARD MEMBER**

- Working as Editorial Board Member for the following Journals.

1. **American Journal of Water Resources**  
   [http://www.sciepub.com/journal/AJWR/editors](http://www.sciepub.com/journal/AJWR/editors)

2. **Advances in Engineering & Scientific Research**  

3. **International Journal of Current Trends in Engineering & Research**  

4. **Earth Science India**  
   [http://www.earthscienceindia.info/members.aspx](http://www.earthscienceindia.info/members.aspx)

5. **Current World Environment**  

6. **Environmental Science: An Indian Journal**  

7. **Madridge Journal of Agriculture and Environmental Sciences**  

8. **International Journal of BioSciences and Technology (IJBST)**  
   [https://board.ijbst.org/](https://board.ijbst.org/)

9. **Central Asian Journal of Environmental Science and Technology Innovation**  

**[M] MISCELLANEOUS**

1. Evaluated the Hindi essays on the topic “भूजल स्तर के सुधार में जलविभाजक प्रबंधन की भूमिका” (technical category) for Essay Competition organized during ‘Hindi Month 2019’.
2. Prepared actionable points on the report of Achievements Review Committee (ARC).

3. Conducted (as Chairman) the technical session on “भूजल निर्धारण एवं प्रबंधन एवं इसरना पुनरुद्धार” on 16.12.2019 during 6th राष्ट्रीय जल संगोष्ठी on ‘जल संसाधन एवं प्रयोजन’ at NIH, Roorkee.

4. Moderated the following electronic discussion groups on Yahoo!
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

Year 2018-2019

[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the following sponsored projects:
   - Groundwater Fluctuations and Conductivity Monitoring in Punjab – New Evidence of Groundwater Dynamics in Punjab from High Frequency Groundwater Level and Salinity Measurements (BGS) (December 2017 – November 2020)
   - Assessment of Impacts of Groundwater Salinity on Regional Groundwater Resources, Current and Future Situation in Mewat, Haryana – Possible Remedy and Resilience Building Measures (PDS) (December 2017 – November 2021)
   - Ganges Aquifer Management in the Context of Monsoon Runoff Conservation for Sustainable River Ecosystem Services – A Pilot Study (PDS) (December 2017 – November 2021)

2. Prepared “Chapter 8: Climate Change and Groundwater” (C. P. Kumar, Anupma Sharma, B. K. Purandara and Sumant Kumar) for the proposed NIH report on ‘Climate Change and its Impact on Water Resources’.


4. Prepared comments on IPCC Special Report on Climate Change and Land (referring to groundwater and seawater intrusion parts).

5. Review of 9 technical papers for the following Journals –
- American Journal of Water Resources (2)
- Earth Systems and Environment
- Pedosphere Journal
- Current Science Journal (2)
- ISH Journal of Hydraulic Engineering
- Applied Ecology and Environmental Sciences Journal
- Environmental Monitoring and Assessment Journal

[B] TECHNICAL PAPERS PUBLISHED


[C] NATIONAL HYDROLOGY PROJECT (NHP)

1. Coordinator, Purpose Driven Studies (PDS)
   - Coordination of various activities pertaining to PDS proposals received from Implementing Agencies of National Hydrology Project.
   - Processing of PDS proposals for review, revision and presentation.
   - Compiling and updating the status of PDS proposals.
   - Conducted (as Member Secretary, Sub-Committee on PDS) the Fourth R&D Session on PDS during 17-18 July 2018 at NIH, Roorkee and undertaken follow-up actions.
   - Obtaining and processing half-yearly progress reports of approved PDS.
   - Examined the online PDS module (MIS) and user help document and communicated the observations to TAMC/NPMU.
   - Visited NPMU, New Delhi on 29.11.2018 and discussed the online PDS module (MIS) with officers of NPMU and TAMC. Suggestions were made to improve the module.
   - Conducted (as Member Secretary, Sub-Committee on PDS) the Fifth R&D Session on PDS during 16-17 January, 2019 at NIH, Roorkee and undertaken follow-up actions.

2. Nodal Officer
• Worked as Nodal Officer, NHP during the period from 4 June 2018 to 3 July 2018.

3. Centre of Excellence for Hydrologic Modelling

• Attended the Brainstorming Workshop on “Development of Integrated Hydrologic Model” (conducted by IIT-Kharagpur and NIH-Roorkee under Centre of Excellence) on 1.11.2018.

4. World Bank Mission

• Attended the Phase-I of Second World Bank Review Mission (NHP) during 25-27 April, 2018 at Gangtok (Sikkim).

• Attended the Phase-III of Second World Bank Review Mission (NHP) on 6 June, 2018 at New Delhi.

• Attended the Phase-II of Third World Bank Review Mission (NHP) during 19-20 February, 2019 at Dehradun (Uttarakhand).

5. Hydrological Information System Management Technical Group (HISMG-Technical)

• Attended the second meeting of HISMG-Technical on 30.7.2018 at Central Water Commission, New Delhi.

6. Miscellaneous

• Prepared a proposal to conduct a meeting on GRACE applications for NHP Implementing Agencies.

[D] TRANSFER OF TECHNOLOGY

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<thead>
<tr>
<th>S. No.</th>
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<tbody>
<tr>
<td>1.</td>
<td>Training Course on ‘Hydrology, Water Resources Management and Climate Change’</td>
<td>▪ Planning and Management of Surface Water and Groundwater Interaction and Integration</td>
</tr>
<tr>
<td></td>
<td>(for Pacific Island Countries) organized by NIH at Roorkee during 25 June - 20 July, 2018</td>
<td>▪ Case Studies on Groundwater in Different Environment</td>
</tr>
<tr>
<td>2.</td>
<td>Training Course on ‘Environmental Isotopes for Climate Resiliency of Mountain Watersheds’ (for participants from Nepal) organized by NIH at Roorkee during 22-26 October, 2018</td>
<td>▪ Climate Change and its Possible Impact on Groundwater with Special Reference to Springs</td>
</tr>
</tbody>
</table>
3. Training Course on ‘Coastal Zone Water Resources: Challenges, Investigation Techniques and Management’ organized by NIH at Roorkee during 11-15 February, 2019 under NHP

[E] ACHIEVEMENTS REVIEW COMMITTEE (ARC)

➢ Worked as Member-Secretary, Achievements Review Committee.

➢ Conducted (as Member-Secretary) the following meetings, prepared highlights and undertaken other follow-up actions:
  
  ▪ Fourth Meeting of ARC on 4.4.2018 at Central India Hydrology Regional Centre (NIH), Bhopal.
  ▪ Fifth Meeting of ARC on 11.7.2018 at ICID, New Delhi.

➢ Prepared the draft of following chapters for ARC report.
  
  ▪ Chapter 1: Introduction
  ▪ Chapter 2: National Institute of Hydrology (NIH) at a Glance
  ▪ Chapter 6: Identification and Assessment of Factors which Facilitated or Impeded the Achievements of the Objectives
  ▪ Chapter 7: Areas of Studies and Research to be Undertaken by the Institute in Coming 10 to 15 years

➢ Visited ICID, New Delhi on 26.7.2018 and discussed with Mr. A. B. Pandya (ARC Member) regarding draft report of ARC.

➢ Edited and finalized the complete ARC report incorporating the suggestions of Director (NIH) and ARC Members.

➢ Prepared a PowerPoint presentation on the ARC report.

[F] E-GOVERNANCE ACTIVITIES

➢ Follow-up actions related to Chairman, e-Governance Cell.

➢ Compiled the information related to e-Governance for Annual Report of NIH for the year 2017-18.

[G] JAL CHETNA

➢ Worked as Chief Editor for जल चेतना (Technical Magazine of NIH) till 25 March, 2019.

➢ Compiled (alphabetically arranged in groups of 50 each) the e-mail addresses collected by ALIO, NIH Library.

[H] PERMANENT COMMITTEES
### SPECIAL PURPOSE COMMITTEES

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<tbody>
<tr>
<td>1.</td>
<td>Chairman</td>
<td>DPC for the post of Technician, Gr. II</td>
<td>22.6.2018</td>
</tr>
<tr>
<td>2.</td>
<td>Member</td>
<td>Walk-in-interview on for selection of various project staff under ‘Neeranchal National Watershed Project’.</td>
<td>10.7.2018</td>
</tr>
<tr>
<td>3.</td>
<td>Member</td>
<td>Walk-in-interview for selection of various project staff under NHP, PDS, NMSHE, SERB, SusHi-Wat projects</td>
<td>20.8.2018</td>
</tr>
<tr>
<td>5.</td>
<td>Chairman</td>
<td>Investigation and proposed action to write off missing items amounting to Rs. 7,255 during the course of physical verification for the period of 1.4.2000 to 31.3.2001</td>
<td>20.9.2018</td>
</tr>
<tr>
<td>6.</td>
<td>Member</td>
<td>To assess the requirement of furniture for renovated Water Quality Laboratory</td>
<td>31.10.2018</td>
</tr>
<tr>
<td>7.</td>
<td>Chairman</td>
<td>Physical Verification Committee for ICP-OES (Inductively Coupled Plasma Optical Emission Spectrometer)</td>
<td>13.2.2019</td>
</tr>
</tbody>
</table>

### MEETINGS ATTENDED

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</thead>
<tbody>
<tr>
<td>1.</td>
<td>47th meeting of Working Group of NIH</td>
<td>23-24 October, 2018</td>
<td>NIH, Roorkee</td>
</tr>
</tbody>
</table>

### EDITORIAL BOARD MEMBER

- Working as Editorial Board Member for the following Journals.

1. American Journal of Water Resources  
   [http://www.sciepub.com/journal/AJWR/editors](http://www.sciepub.com/journal/AJWR/editors)

2. Advances in Engineering & Scientific Research

4. Earth Science India
   [http://www.earthscienceindia.info/members.aspx](http://www.earthscienceindia.info/members.aspx)

5. Current World Environment

6. Environmental Science: An Indian Journal

7. Madridge Journal of Agriculture and Environmental Sciences

[L] MISCELLANEOUS


2. Evaluated the Hindi essays on the topic “देश के समय विकास मे जल संसाधन प्रबंधन की भूमिका” (technical category) for Essay Competition organized during ‘Hindi Month 2018’.

3. Checked 20 abstracts for Coffee Table Book prepared on the occasion of 40th Anniversary of Foundation Day of NIH.

4. Attended the Brain Storming Session on “Perspectives on Water Management in India and Future Directions” on 15.12.2018 on the occasion of 40th Anniversary of Foundation Day of NIH.


6. Moderated the following electronic discussion groups on Yahoo!
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

**Year 2017-2018**
[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the following technical studies and projects:
   - Peya Jal Suraksha - Development of Six Pilot Riverbank Filtration Demonstrating Schemes in Different Hydrogeological Settings for Sustainable Drinking Water Supply (November 2015 – April 2018)
   - Assessment of Impacts of Groundwater Salinity on Regional Groundwater Resources, Current and Future Situation in Mewat, Haryana – Possible Remedy and Resilience Building Measures (PDS) (December 2017 – November 2020)
   - Ganges Aquifer Management in the Context of Monsoon Runoff Conservation for Sustainable River Ecosystem Services – A Pilot Study (PDS) (December 2017 – November 2021)

2. Submitted the project proposal entitled “Demonstrating Operational Feasibility of Innovations in Transferring Flood/Excess Water to the Stressed Aquifer in the Ganges Basin: From Flood to Aquifer using UTFI” (in partnership with IWMI-India and Central Soil Salinity Research Institute) to National Water Mission (NWM) for financial support.


4. Review of 13 technical papers for the following Journals –
   - American Journal of Mining and Metallurgy
   - Journal of Ecosystem & Ecography
   - ISH Journal of Hydraulic Engineering
   - Current World Environment Journal (4)
   - Journal of Earth Science & Climatic Change
   - World Journal of Environmental Engineering
   - Journal of the Geological Society of India
   - American Journal of Water Resources
   - Pedosphere Journal
   - International Journal of Hydrology Science and Technology

[B] TECHNICAL PAPERS PUBLISHED


[C] **TECHNICAL BOOK**

➢ The technical book “*Modelling of Sea Water Intrusion using SUTRA*” (C. P. Kumar) was published by LAMBERT Academic Publishing, Germany.

ISBN-10 : 3659873896  
Number of pages : 56  
Published on : 02 June 2017

[D] **BOOK CHAPTER**

➢ Submitted the chapter on “*Impact of Climate Change on Groundwater System*” for the proposed book titled 'Ground Water Development - Issues and Sustainable Solutions' to be published by Springer.

[E] **NATIONAL HYDROLOGY PROJECT (NHP)**

1. **Centre of Excellence for Hydrologic Modelling**


2. **Coordinator, Purpose Driven Studies (PDS)**
• Inviting PDS proposals from Implementing Agencies of NHP.
• Coordination of various activities pertaining to PDS proposals received from Implementing Agencies of National Hydrology Project.
• Processing of PDS proposals for review and revision.
• Compiling and updating the status of PDS proposals and powerpoint presentation.
• Attended the monthly review meeting of NHP on 12.6.2017 at MoWR, New Delhi.
• Conducted (as Member Secretary) the following meetings and undertaken follow-up actions:
   Expert Committee for PDS: 6 April 2017, New Delhi
   First R&D Session on PDS: 13-14 July 2017, Roorkee
   Second R&D Session on PDS: 19-20 September 2017, Roorkee
   Third R&D Session on PDS: 6 March 2018, Roorkee

3. Hydrological Information System Management Technical Group (HISMG-Technical)

• Attended the first meeting of HISMG-Technical on 30.1.2018 at Central Water Commission, New Delhi and presented the status of PDS proposals and guidelines.

[F] INTERNATIONAL GROUNDWATER CONFERENCE (IGWC 2017)


➢ Reviewed 11 full length papers for IGWC 2017.


➢ Attended the International Conference during 11-13 December, 2017 at New Delhi.

[G] TRANSFER OF TECHNOLOGY

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[H] INCIHP
Worked as Coordinator, INCIHP (Indian National Committee for International Hydrological Program of UNESCO) during the period 7.8.2017 to 4.10.2017.

Examined the files and documents related to INCIHP and follow-up actions taken on the minutes of second meeting of INCIHP held on 20.6.2017.

Visited Wildlife Institute of India, Dehradun (along with Dr. Sanjay Kumar Jain) on 15.9.2017 and discussed with Dr. Vinod B. Mathur regarding establishment of UNESCO Category 2 Centre.

Prepared sections 1, 2, 3 for Request for Action (RFA) towards the establishment of Regional Centre on Water and Environment for South Asia under the Auspices of UNESCO Category 2 Centre jointly at NIH, Roorkee and IIT, Roorkee.

[Ⅰ] ACHIEVEMENTS REVIEW COMMITTEE (ARC)

Worked as Member-Secretary, Achievements Review Committee with effect from 25.9.2017.

Conducted (as Member-Secretary) the following meetings, prepared highlights and undertaken other follow-up actions:

- First Meeting of ARC on 23 October, 2017 at NIH, Roorkee (with Director and Heads of scientific divisions) and visit to Nuclear Hydrology Laboratory.
- Second Meeting of ARC during 18-19 November, 2017 at NIH, Roorkee (with Scientific Divisions, Scientists, Scientific Staff and Mr. R. D. Singh, Ex-Director, NIH).
- Third Meeting of ARC on 31 January, 2018 at Central Water Commission, New Delhi.

[J] E-GOVERNANCE ACTIVITIES

Worked as Chairman, e-Governance Cell with effect from 13 July 2017.

Review of the status of various e-Governance activities and follow-up actions.

Compiled the information related to e-Governance for Annual Report of NIH for the year 2016-17.

Examined the proposed home pages and menus for re-designing of NIH website through an empanelled vendor by NICSI, New Delhi.

[K] JAL CHETNA

Worked as Chief Editor for जल चेतना (Technical Magazine of NIH).

Conducted (as Chief Editor) the meeting of Editorial Board for जल चेतना (Technical Magazine of NIH) on 16.5.2017.
PERMANENT COMMITTEES

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<tr>
<th>S. No.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Member</td>
<td>Group Purchase Committee (on behalf of Head, GWH)</td>
<td>16.6.2017</td>
</tr>
<tr>
<td>3.</td>
<td>Member</td>
<td>राजभाषा कार्यालय समिति</td>
<td>21.12.2017, 16.3.2018</td>
</tr>
</tbody>
</table>

SPECIAL PURPOSE COMMITTEES

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<tr>
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</thead>
<tbody>
<tr>
<td>2.</td>
<td>Chairman</td>
<td>Purchase of Colour Laser Printer and Monitor for Dr. N. C. Ghosh</td>
<td>22.6.2017</td>
</tr>
<tr>
<td>3.</td>
<td>Chairman</td>
<td>Committee for entering into Annual Rate Contract for food catering service at NIH, Roorkee</td>
<td>29.6.2017</td>
</tr>
<tr>
<td>4.</td>
<td>Chairman</td>
<td>e-Office Governance Structure</td>
<td>-</td>
</tr>
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MEETINGS ATTENDED

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<tbody>
<tr>
<td>1.</td>
<td>45th meeting of Working Group of NIH</td>
<td>11-12 May, 2017</td>
<td>NIH, Roorkee</td>
</tr>
<tr>
<td>2.</td>
<td>70th meeting of Technical Advisory Committee (TAC) of NIH</td>
<td>1 September, 2017</td>
<td>CWC, New Delhi</td>
</tr>
<tr>
<td>3.</td>
<td>78th meeting of Governing Body of NIH</td>
<td>21 September, 2017</td>
<td>MoWR, New Delhi</td>
</tr>
<tr>
<td>4.</td>
<td>46th meeting of Working Group of NIH</td>
<td>8-9 February, 2018</td>
<td>NIH, Roorkee</td>
</tr>
</tbody>
</table>

EDITORIAL BOARD MEMBER

Working as Editorial Board Member for the following Journals.

1. International Journal of Water Resources and Environmental Management
2. American Journal of Water Resources
   http://www.sciepub.com/journal/AJWR/editors

3. Advances in Engineering & Scientific Research
   http://advancejournals.org/advances-in-engineering-and-scientific-research/editor-board/

   http://www.ijcter.com/editorial-board/

5. Earth Science India
   http://www.earthscienceindia.info/members.aspx

6. Current World Environment
   http://www.cwejournal.org/editorial-board/

[P] MISCELLANEOUS

1. Prepared draft guidelines and finalized the application format for 'Technical Book Writing in Hindi Award Scheme'.

2. Nominated as alternate member as representative of Director, NIH for the Central Level Expert Group constituted for over-all supervision of the re-assessment of ground water resources (as on 31 March 2017) for the entire country.


4. Evaluated the Hindi essays on the topic “आपुनिक भारत में हिंदी का योगदान” (non-technical category) for Essay Competition organized during ‘Hindi Month 2017’.

5. Prepared the address of Minister of State for Water Resources for 37th Annual General Meeting of NIH Society, held on 13 February, 2018.

6. Evaluated the answer sheets of written examination for the post of Scientist ‘B’.

7. Moderated the following electronic discussion groups on Yahoo!
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

Year 2016-2017
[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the following technical studies and projects:

   - *Peya Jal Suraksha* - Development of Six Pilot Riverbank Filtration Demonstrating Schemes in Different Hydrogeological Settings for Sustainable Drinking Water Supply (November 2015 to April 2018) sponsored by MoWR, RD & GR under Plan Fund


   - *Baseline Data Collection and Analysis of Mewat District, Haryana* (March 2016 to March 2017)

   - *Feasibility of Aquifer Recharge by Flood Water Moderation and Well Fields Development along Yamuna River for Drinking Water Scarcity in NCT Delhi*

2. Guidance to Mr. Vikrant (Karunya University, Coimbatore) for his M.Tech. project entitled “Soil Moisture Flow Modelling using HYDRUS 1D”.

3. Review of 22 technical papers for the following Journals –

   - American Journal of Mathematical Analysis
   - American Journal of Water Resources (2)
   - Current Science
   - Current World Environment
   - Hydrology: Current Research (2)
   - International Journal of Hydrology Science and Technology (2)
   - International Journal of Water
   - Journal of Climatology & Weather Forecasting
   - Journal of Earth Science & Climatic Change
   - Journal of Geography & Natural Disasters
   - Journal of Geosciences and Geomatics
   - Journal of Indian Water Resources Society
   - Journal of the Geological Society of India (2)
   - Journal of Water Resource and Protection
   - KSCE Journal of Civil Engineering
   - Life Sciences Journal - Environment Pollution and Climate Change (2)
   - Water Science and Technology Library (Springer book series)

[B] TECHNICAL REPORTS PREPARED


[C] TECHNICAL PAPERS PUBLISHED


[D] REGIONAL CONSULTATION ATTENDED

- Attended the DFID CRISSA (Climate Research and Information Services in South Asia) Regional Consultation: Towards Greater Coordination among Climate Researchers and Policy makers in South Asia during 7-8 April, 2016 at New Delhi.

- As a Panelist, presented reflection for the session ‘Groundwater Resilience to Climate Change and Abstraction in the Indo-Gangetic Basin’ in DFID CRISSA Regional Consultation.

[E] NATIONAL HYDROLOGY PROJECT (NHP)

1. **Centre of Excellence for Hydrologic Modelling**
   - Worked as Coordinator and Team Leader for preparation of status document on ‘Subsurface Water Modeling – Flow and Contaminant Transport’ as a part of the document “Hydrological Modelling – Current Status and Future Directions” for the “Centre of Excellence for Hydrologic Modelling” proposed to be established at NIH under National Hydrology Project.
Examined, edited and revised the status document on “Subsurface Water Modeling – Flow and Contaminant Transport” (N. C. Ghosh, C. P. Kumar, Anupma Sharma, Surjeet Singh, M. K. Jose) based-upon reviewer comments.

2. Coordinator, Purpose Driven Studies (PDS)

- Coordination of various activities pertaining to PDS proposals received from NIH and other Implementing Agencies of National Hydrology Project.
- Inviting PDS proposals from Implementing Agencies of NHP.
- Processing of PDS proposals for review and revision.
- Compiling and updating the status of PDS proposals.
- Editing the draft document on "Guidelines for Implementation of R&D Program (Purpose Driven Studies)"

[F] NODAL OFFICER, E-GOVERNANCE

- Follow-up actions related to Nodal Officer, e-Governance.

[G] JAL CHETNA

- Working as Chief Editor for जल चेतना (Technical Magazine of NIH) w.e.f. 26.8.2016.
- Conducted (as Chief Editor) the meeting of Editorial Board for जल चेतना (Technical Magazine of NIH) on 17.10.2016.

[H] PERMANENT COMMITTEES

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Chairman/Member</th>
<th>Committee</th>
<th>Meetings</th>
</tr>
</thead>
</table>
| 1.    | Member          | Works & Services Committee | 1.6.2016  
| 2.    | Member          | e-Governance Cell            | -                |
| 3.    | Member          | राजभाषा कार्यान्वयन समिति       | 27.9.2016  
20.1.2017  
21.3.2017 |

[I] SPECIAL PURPOSE COMMITTEES

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Chairman/Member</th>
<th>Committee</th>
<th>Meetings</th>
</tr>
</thead>
</table>
| 1.    | Chairman        | Committee to recommend the empanelment of Authorized Medical Attendants / Specialists for the financial year 2016-17 | 25.4.2016  
1.9.2016 |
| 2.    | Member          | Committee to re-formulate the proposal of post-retirement medical facilities in NIH incorporating the views/suggestions of Governing Body | 4.5.2016  
7.10.2016 |
3. Chairman Committee for entering into Annual Rate Contract for food catering service at NIH, Roorkee  
   7.10.2016  

4. Chairman Committee for procurement of Portable Dissolved Oxygen Meter  
   21.11.2016  
   5.1.2017  
   20.2.2017

5. Chairman Committee to investigate the possibilities to wind-up the RBF site at Kuankhera village, Laksar  
   31.1.2017  
   1.2.2017

[J] EDITORIAL BOARD MEMBER

➢ Working as Editorial Board Member for the following Journals.


8. American Journal of Water Resources  
   http://www.sciepub.com/journal/AJWR/editors

9. Advances in Engineering & Scientific Research  
   http://advancejournals.org/aesr/editor-board/

10. International Journal of Current Trends in Engineering & Research  
    http://www.ijcter.com/editorial-board/

11. Earth Science India  
    http://www.earthscienceindia.info/members.aspx

[K] MISCELLANEOUS

1. Looked after the routine duties of Head, Ground Water Hydrology division during the periods 4-14 April, 2016; 25 April – 2 May, 2016; and 8-12 August, 2016.

2. Attended the 44th meeting of Working Group of NIH held during 18-19 April, 2016.

3. Attended the first meeting of Technical Advisory Committee (T. A. C.) of Central Ground Water Board on 30.3.2017 at MoWR, New Delhi.


5. Evaluated the Hindi essays on the topic “देश की प्रगति में राजभाषा हिंदी का योगदान” (non-technical category) for Essay Competition organized during ‘Hindi Month 2016’.

7. Moderated the following electronic discussion groups on Yahoo!

- hydforum (Hydrology Forum)
- hydrologymodel (Hydrological Modelling)
- gwmodel (Ground Water Modelling)
- rhydrology (Roorkee Hydrology Group)

**Year 2015-2016**

[A] TECHNICAL STUDIES AND REVIEWS

1. Interaction with NIC and follow-up actions for the proposed study “Development of Website and e-Portal on Mitigation and Remedy of Arsenic Menace in India”.

2. Associated with the following technical studies and projects:

   - *Peya Jal Suraksha* - Development of Six Pilot Riverbank Filtration Demonstrating Schemes in Different Hydrogeological Settings for Sustainable Drinking Water Supply (November 2015 to April 2018) sponsored by MoWR, RD & GR under Plan Fund


   - *Baseline Data Collection and Analysis of Mewat District, Haryana* (March 2016 to March 2017)

3. Prepared an Information Brochure on the topic “Impact of Climate Change on Groundwater”.

4. Guidance to Mr. Vikrant (Karunya University, Coimbatore) for his M.Tech. project entitled “Soil Moisture Flow Modelling using HYDRUS 1D”.


[B] TECHNICAL REPORTS PREPARED


[C] TECHNICAL PAPERS PUBLISHED


[D] TECHNICAL BOOK

1. The following technical book (Paperback and Kindle editions) was published.

   Title : Groundwater Assessment and Modelling
   Author : C. P. Kumar
   Publisher : CreateSpace - An Amazon Company (Paperback)
   Amazon – Kindle Direct Publishing (Kindle)
   ISBN-10 : 1511520493
   Paperback : 332 pages

2. The above technical book was also published by -

   (a) Sara Book Publication, Ahmedabad, India.

   ISBN : 978-163102158-9
[E] BOOK CHAPTER


[F] SEMINAR ATTENDED


[G] NATIONAL HYDROLOGY PROJECT (NHP)

- Worked as Coordinator and Team Leader for preparation of status document on ‘Subsurface Water Modelling – Flow and Contaminant Transport’ as a part of the document “Hydrological Modelling – Current Status and Future Directions” for the “Centre of Excellence for Hydrologic Modelling” proposed to be established at NIH under National Hydrology Project.

- Prepared the following sections of status document on ‘Subsurface Water Modelling – Flow and Contaminant Transport’.

  1. Unsaturated/Vadose Zone Modelling (Section 4)
  2. Data Requirements for Saturated Zone Modelling (Section 7)

[H] TRANSFER OF TECHNOLOGY

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Workshop/Course</th>
<th>Lecture Delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Training Course on ‘Integrated Water Resources Development and Management’ organized by NIH at Roorkee during 30 November – 5 December, 2015 for officers of CWC and CGWB.</td>
<td>Groundwater Assessment</td>
</tr>
</tbody>
</table>
[I] NODAL OFFICER, E-GOVERNANCE

1. Working as “Nodal Officer for e-Governance Activities of NIH” with effect from 8.6.2015.

2. Follow-up actions related to Nodal Officer, e-Governance.

3. Attended the meetings of e-Governance Nodal Officers of various organizations under MoWR under the chairmanship of Secretary/Joint Secretary (MoWR) on 12.6.2015 and 11.8.2015 at New Delhi.

4. Visited Lal Bahadur Shastri National Academy of Administration, Mussoorie (Uttarakhand) on 14.9.2015 to see functioning of SARGAM software for e-Governance.

5. Edited the draft of ‘Notice inviting Expression of Interest’ for implementation of e-Governance in NIH.

[J] PERMANENT COMMITTEES

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Chairman/Member</th>
<th>Committee</th>
<th>Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Member</td>
<td>e-Governance Cell</td>
<td>3.6.2015</td>
</tr>
</tbody>
</table>

[K] EDITORIAL BOARD MEMBER

➢ Working as Editorial Board Member for the following Journals.


13. American Journal of Water Resources
    http://www.sciepub.com/journal/AJWR/editors

14. Advances in Engineering & Scientific Research
    http://advancejournals.org/aest/editor-board/

[L] MISCELLANEOUS

1. Looked after the routine duties of Head, Ground Water Hydrology division during the periods 12-27 October 2015 and 8-20 February 2016.


3. Evaluated 16 articles for ‘Pravahini’ magazine (Hindi) of NIH for the year 2015.
4. Prepared draft reply for Lok Sabha Unstarred Diary No. 682 for 25.2.2016 regarding impact of rising sea level on inland water.

5. Moderated the following electronic discussion groups on Yahoo!
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

**Year 2014-2015**

[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the following technical studies and projects:
   - Management of Aquifer Recharge (MAR) and Aquifer Storage Recovery (ASR)
   - Water Quality, Hydrogeology and Isotopic Investigations in SW Punjab
   - Water Availability Studies for Sukhna Lake, Chandigarh
   - Estimation of Radon Concentration in Waters and Identification of Paleo-groundwater in Part of Punjab Located in Satluj River Basin using Isotopes
   - The Structure and Dynamics of Groundwater Systems in Northwestern India under Past, Present and Future Climates
   - The Use of Environmental Isotopes to Assess Sustainability of Intensively Exploited Aquifer Systems in North Eastern Parts of Punjab, India
   - Assessment of Baseflow and its Impact on Water Quality in the Part of Satluj River in India using Environmental Isotopes and Age Dating Techniques


[B] TECHNICAL REPORTS PREPARED

1. Sharma, Anupma, **C. P. Kumar**, C. K. Jain, Sudhir Kumar, D. S. Rathore, M. S. Rao, Surjeet Singh, Rajan Vatsa, “*Coastal Groundwater Dynamics and Management*


[C] TECHNICAL PAPERS PUBLISHED


[D] TECHNICAL BOOK

- Prepared a technical book titled “Groundwater Assessment and Modelling” covering related aspects on assessment of groundwater potential, groundwater data requirement and analysis, basic concepts and guidelines for groundwater modelling, groundwater modelling software, modelling of unsaturated flow, modelling of sea water intrusion, and impact of climate change on groundwater resources.
[E] BOOK CHAPTER

- The chapter on “Impact of Climate Change on Groundwater Resources” was accepted for publication in ‘Handbook of Research on Climate Change Impact on Health and Environmental Sustainability’ by IGI Global.

[F] HYDROLOGY PROJECT (Phase – II)

1. Purpose Driven Study (PDS)

   Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat (Dr. Anupma Sharma & Mr. C. P. Kumar)
   - Technical discussions with Principal Investigator (Dr. Anupma Sharma) and project staff regarding computation of water balance components of Minsar river basin for the years 2010-2014.

2. Coordinator, Purpose Driven Studies (PDS)
   - Coordination of various activities pertaining to Purpose Driven Studies undertaken by NIH and monitoring their progress.
   - Compiled the extended summaries of Purpose Driven Studies undertaken by NIH for HP-II report of NIH.

[G] CONSULTANCY PROJECT

Associated with the following consultancy project –

- Identification of Source and Locations of Leakage/Seepage from Kaushalya Dam, Haryana

[H] TRANSFER OF TECHNOLOGY

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Workshop/Course</th>
<th>Lecture Delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Training Course on 'Groundwater Modeling using MODFLOW and MIKESHE' conducted by NIH and DHI (India) at Roorkee during 2-6 February, 2015</td>
<td>Data Requirements for Groundwater Modelling</td>
</tr>
</tbody>
</table>

[I] HEAD, HYDROLOGICAL INVESTIGATIONS DIVISION

1. Routine matters pertaining to Hydrological Investigations division; discussions with scientists, scientific staff and project staff regarding technical studies, field and laboratory investigations; supervision and associated with other activities by the division (till 30.7.2014).
2. Finalization of agenda notes and minutes for 40th meeting of Working Group of NIH held on 4-5 June 2014.


[J] COORDINATOR, HARD ROCK REGIONAL CENTRE, BELGAUM

➢ Coordination of various activities pertaining to Hard Rock Regional Centre, Belgaum (till 30.7.2014).

[K] ORGANIZATION OF LECTURE

➢ Organized a presentation on “Application of Nuclear Magnetic Resonance (NMR) Technology in Groundwater” by Dr. Elliot Grunewald, Chief Geophysicist, Vista Clara Inc., USA on 22.5.2014 at NIH, Roorkee.

[L] PERMANENT COMMITTEES

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Chairman/Member</th>
<th>Committee</th>
<th>Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Member</td>
<td>GPC (Group Purchase Committee)</td>
<td>25.6.2014</td>
</tr>
</tbody>
</table>


1. Revised the list of roles and responsibilities of Scientists and Staff Members of Hydrological Investigations division and communicated to all concerned.

2. Revised the ‘Organizational Chart’ and ‘Activities Chart’ for Hydrological Investigations division.

3. Compiled the details of funds received during the year 2013-14 and expected during the year 2014-15 by Hydrological Investigations division through sponsored and consultancy projects.


5. Got the Internal Audit conducted on 9.4.2014 for Hydrological Investigations division.

[N] MISCELLANEOUS
1. Looked after the routine duties of Head, Ground Water Hydrology division during the periods 17-20 November 2014, 23 February – 4 March 2015, and 16-20 March 2015.

2. Prepared reply for Lok Sabha Starred Question Diary No. 2030 for 4.3.2015 regarding desalination of groundwater.

3. Finalization of the agenda notes in respect of Ground Water Hydrology division for 42nd meeting of Working Group held on 19-20 March, 2015.

4. Carried out the election duty as Zonal Magistrate for Sectors 10/11/12/13 of Khanpur-32 Assembly Constituency (Haridwar) in General Elections - 2014.

5. Worked as ‘Editorial Board Member’ for “American Journal of Water Resources”.

6. Moderated the following electronic discussion groups on Yahoo!
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

**Year 2013-2014**

[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the study "Quantification of Impact of Rainwater Harvesting on Groundwater Availability in Aravalli Hills – Part II: Mathematical Modeling", discussions with Dr. Anupma Sharma regarding VS2DT simulations, and computation of saturated hydraulic conductivity from soil texture for 43 data sets of Savna watershed.

2. Edited the project proposal entitled “Impact of Forest Cover Changes on Groundwater Resources in Uttara Kannada District, Karnataka” for submission to Ministry of Earth Sciences.


[B] TECHNICAL REPORTS PREPARED
Final Reports


Interim Reports


[C] TECHNICAL PAPERS PUBLISHED


[D] TECHNICAL DOCUMENTS PREPARED


[E] BOOK CHAPTERS

The following chapters were published in the book titled “Lakes, Rivers & Coastal Wetlands - Recent Perspectives” (Editors: S. Vasudevan, T. Ramkumar, S. R. Singarasarubramanian, R. S. Kumar, G. Ramesh), New Academic Publishers, New Delhi, 2013.


[F] HYDROLOGY PROJECT (Phase – II)

1. Purpose Driven Study (PDS)

Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat (Dr. Anupma Sharma & Mr. C. P. Kumar)

- Technical discussions with Principal Investigator (Dr. Anupma Sharma) and project staff regarding status of progress, field investigations, isotope results, use of WMS software, and impact of climate change.

2. Coordinator, Purpose Driven Studies (PDS)
• Coordination of various activities pertaining to Purpose Driven Studies undertaken by NIH and monitoring their progress.

• Participated in the Workshop on Purpose Driven Studies organized by PCS and TAMC during 21-23 May, 2013 at New Delhi to review the progress of implementation of Purpose Driven Studies by various states and central implementing agencies.

3. Decision Support System (Planning)

• Attended the Final Workshop on “Decision Support System (DSS) Planning” on 8.8.2013 at New Delhi.

[G] CONSULTANCY PROJECTS

Associated with the following consultancy projects –

1. Pre-dredging Bathymetric Survey of Ramgarh Taal, Gorakhpur (U.P.) (completed in May 2013)

2. Integrated Hydrological Investigations of Sukhna Lake, Chandigarh for its Conservation and Management (July 2011 – June 2013)

3. Identification of Source and Locations of Leakage/Seepage from Kaushalya Dam, Haryana (completed in March 2014)

[H] TRANSFER OF TECHNOLOGY

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Workshop/Course</th>
<th>Lectures Delivered</th>
</tr>
</thead>
</table>
(3) Groundwater Data Requirement and Analysis             |
| 3.    | Training Course on 'Application of GIS to Groundwater Modeling and Management' conducted by NIH at Roorkee during 10-21 February, 2014 for officers of Ground Water Department, Rajasthan | (4) Groundwater Data Requirement and Analysis  
(5) Assessment of Groundwater Potential                  |
4. Training Course on ‘Coastal Groundwater Development, Modeling & Management’ conducted by NIH and GWRDC at Ahmedabad (Gujarat) during 3-7 March, 2014 (under World Bank aided Hydrology Project, Phase-II)

(6) Groundwater Data Requirement and Analysis
(7) Assessment of Groundwater Potential

[I] WORKSHOPS ATTENDED

1. Participated in the National Workshop on “Role of Isotopes in Groundwater Management in India” organized under HP-II during 12-14 November, 2013 at NIH, Roorkee.


[J] HEAD, HYDROLOGICAL INVESTIGATIONS DIVISION

1. Routine matters pertaining to Hydrological Investigations division; discussions with scientists, scientific staff and project staff regarding technical studies, field and laboratory investigations; supervision and associated with organization of training courses and other activities by the division.

2. Finalization of agenda notes and minutes for 38th and 39th meetings of Working Group of NIH held on 3-4 April 2013 and 21-22 October 2013 respectively.

3. Compiled the required information pertaining to Hydrological Investigations division for NIH website.


5. Compiled the required information pertaining to Hydrological Investigations division for agenda notes and attended the 33rd Annual General Meeting of NIH Society on 17.7.2013 at New Delhi.


7. Attended the 66th meeting of Technical Advisory Committee (TAC) on 29.7.2013 at New Delhi.

8. Edited the Information Brochure on Isotope Laboratory.


10. Compiled the database for training management in respect of Hydrological Investigations division (as required by MoWR).


[K] COORDINATOR, HARD ROCK REGIONAL CENTRE, BELGAUM

1. Coordination of various activities pertaining to Hard Rock Regional Centre, Belgaum.

2. Edited the agenda notes, attended 23rd RCC meeting of HRRC-Belgaum held on 13.6.2013 at Bangalore, and edited the minutes.


4. Compiled the required information pertaining to Hard Rock Regional centre, Belgaum for agenda notes of 33rd Annual General Meeting of NIH Society.

5. Visit to Hard Rock Regional Centre, Belgaum during 10-13 December, 2013; discussion with scientists and staff of HRRC-Belgaum regarding preparation and plan for Training Course on “Ground Water Resources Management”, activities of regional centre and general issues; delivered two lectures in the Training Course; and visit to Karnataka Neeravari Nigam Limited (Irrigation Department), Belgaum for discussion with Chief Engineer regarding allocation of office building for HRRC-Belgaum.

[L] ORGANIZATION OF BRAIN STORMING SESSION, INTERNATIONAL CONFERENCE & TRAINING COURSE

1. Associated (as Co-Coordinator) with organization of Brain Storming Session on “Conservation and Management of Sukhna Lake” jointly organized by NIH, Roorkee and Department of Zoology, Panjab University, Chandigarh on 7.5.2013 at Chandigarh.

2. Associated with Organizing Committee of the International Conference on “Advances in Water Resources Development and Management” organized by Department of Geology, Panjab University, Chandigarh and NIH, Roorkee during 23-25 October, 2013 at Chandigarh.

3. Associated (as Co-PI) with organization of Training Course on “Coastal Groundwater Development, Modeling & Management” jointly organized by NIH and GWRDC Ltd. during 3-7 March, 2014 at Ahmedabad under PDS component of Hydrology Project, Phase-II.

[M] PERMANENT COMMITTEES
S. No. | Chairman/Member | Committee | Meetings |
|------|----------------|-----------|----------|

[N] SPECIAL PURPOSE COMMITTEES

S. No. | Chairman/Member | Committee | Meetings |
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chairman</td>
<td>DPC (Departmental Promotion Committee) for the posts of Technician Gr. I, Technician Gr. II, and third MACP</td>
<td>12.4.2013</td>
</tr>
<tr>
<td>2.</td>
<td>Chairman</td>
<td>Development of NIH website, as per GIGW norms, through an empanelled firm</td>
<td>12.4.2013</td>
</tr>
<tr>
<td>3.</td>
<td>Chairman</td>
<td>Investigation of the cause of fire incidence on 11.3.2013 in room number 208 of Guest House No. 1 and assessment of total damage</td>
<td>Investigations</td>
</tr>
<tr>
<td>5.</td>
<td>Chairman</td>
<td>Rate contract for toner cartridges for photocopier machines and FAX machines installed in NIH</td>
<td>4.6.2013, 1.7.2013</td>
</tr>
<tr>
<td>6.</td>
<td>Member</td>
<td>Selection Committee for 12 posts of Research Intern</td>
<td>11.6.2013</td>
</tr>
<tr>
<td>7.</td>
<td>Chairman</td>
<td>Purchase of GPS and Bailer Sampler</td>
<td>19.6.2013</td>
</tr>
<tr>
<td>10.</td>
<td>Chairman</td>
<td>Walk-in-Interview scheduled for selection of SRF/JRF</td>
<td>27.6.2013</td>
</tr>
<tr>
<td>11.</td>
<td>Chairman</td>
<td>Selection of JRF from the panel-list of Walk-in-Interview conducted on 20.6.2013</td>
<td>5.7.2013</td>
</tr>
<tr>
<td>13.</td>
<td>Chairman</td>
<td>Walk-in-Interview for selection of Project Officer</td>
<td>5.8.2013</td>
</tr>
<tr>
<td>15.</td>
<td>Member</td>
<td>Judging Committee for ‘Debate Competition’ as part of Vigilance Awareness Week celebrations</td>
<td>30.10.2013</td>
</tr>
</tbody>
</table>


2. Compiled the funds received under sponsored and consultancy projects during the year 2012-13 and expected during 2013-14.


[P] MISCELLANEOUS

1. Nominated as ‘Editorial Board Member’ for “American Journal of Water Resources”.

2. Checked the tender notice for AMC of computers and peripherals.

3. Evaluated (as a member of Judging Committee) twenty essays on “जल संरक्षण एवं जल गुणवत्ता” for the competition organized for school children, as a part of Water Conservation Year – 2013 celebrations.

4. Compiled recommendations of the National Workshop on “Role of Isotopes in Groundwater Management in India” organized under HP-II during 12-14 November, 2013 at NIH, Roorkee.

5. Checked (as a member of committee) four articles for Jal Chetna magazine (Hindi).

6. Edited the following web pages -
   - Water Resources and Hydrology Journals
   - Publications of C. P. Kumar
   - Kumar Links to Hydrology Resources
   - Hydrology Links of C. P. Kumar

7. Moderated the following electronic discussion groups on Yahoo!
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

Year 2012-2013

[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the study "Quantification of Impact of Rainwater Harvesting on Groundwater Availability in Aravalli Hills – Part II: Mathematical Modeling" (April 2010 - March 2013), field visit to the study area (Savna watershed) near Udaipur during 20-22 June, 2012 and geophysical survey.
2. The following report was completed –


3. Conducted four walk-in-interviews (as Chairman of the Selection Committees) for appointment of Research Scientist–C, Research Associate, SRF (2), JRF, Project Officer under various projects.

4. Prepared the powerpoint presentation (Hydrological Investigations division) for Brain Storming Session on “R & D in Hydrology and Water Resources” held on 17.12.2012 on the occasion of 35th Foundation Day of NIH.

5. Review of a project proposal for Indian National Committee on Ground Water (INCGW).

6. Review of 4 technical papers for Current Science Journal (3) and IWRS Journal.

[B] TECHNICAL PAPERS PUBLISHED


[C] HYDROLOGY PROJECT (Phase – II)

1. Purpose Driven Study (PDS)

Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat (Dr. Anupma Sharma & Mr. C. P. Kumar)

- Technical discussions with Principal Investigator (Dr. Anupma Sharma) and project staff regarding status of progress, proposed budget, additional locations for water sampling and TLC measurements, measurements of river cross-sections, and design of recharge structures proposed to be constructed.

- Visit to Gandhinagar, Porbandar and Rajkot during 14-19 June, 2012 for discussions; retrieval of data from CTD-Divers; sampling of groundwater and measurements of groundwater level and conductivity (through TLC Meter) in piezometers and observation wells; interpretation of geophysical survey; and meeting with DSS team members (Surface Water and Groundwater).

2. Coordinator, Purpose Driven Studies (PDS)

- Coordination of various activities pertaining to Purpose Driven Studies undertaken by NIH and monitoring their physical and financial progress.

- Obtained quarterly progress reports from Principal Investigators and updated the status of progress in tabular and text formats for all Purpose Driven Studies.

- Attended the Workshop on Purpose Driven Studies organized by PCS and TAMC during 27-28 June, 2012 at New Delhi to review the progress of implementation of Purpose Driven Studies.

- Prepared a powerpoint presentation on physical progress of PDS (required for review of progress of Hydrology Project, Phase-II in respect of NIH by Special Secretary, MoWR on 28.2.2013).

[D] CONSULTANCY PROJECTS

Associated with the following consultancy projects -

1. Integrated Hydrological Investigations of Sukhna Lake, Chandigarh for its Conservation and Management (July 2011 – June 2013)
2. Identification of Source of Seepage/Leakage around Lake Nainital, District Nainital, Uttarakhand (completed in December 2012)

[E] TRANSFER OF TECHNOLOGY

1. Delivered the following lecture in the Training Course on “Project Hydrology” organized by NIH, Roorkee during 23 April – 4 May, 2012 for 20 participants from African countries.
   - Water Balance Analysis

   - Assessment of Groundwater Potential
   - Groundwater Data Requirements and Analysis

   - Assessment of Groundwater Potential

4. Delivered the following lectures in the Training Course on “Coastal Groundwater Monitoring, Assessment & Management” jointly organized by NIH, Roorkee and Gujarat Water Resources Development Corporation Ltd. during 4-8 March, 2013 at Rajkot (Gujarat) under the PDS component of Hydrology Project, Phase-II.
   - Assessment of Groundwater Potential
   - Groundwater Data Requirement and Analysis

[F] SEMINAR ATTENDED

Attended the Regional Seminar on “Water Quality Assessment and Management of Kerala State” conducted during 5-6 February, 2013 at Trivandrum (Kerala) jointly by Hard Rock Regional Centre, NIH, Belgaum; Kerala State Irrigation Department; and Kerala State Ground Water Department under PDS component of Hydrology Project, Phase-II.

[G] COORDINATOR, HARD ROCK REGIONAL CENTRE, BELGAUM

With reference to Office Order No. 37 (No. 6/14/2012-NIH dated April 30, 2012), taken-over the charge of Coordinator, Hard Rock Regional Centre, Belgaum on 30.4.2012.

1. Coordination of various activities pertaining to Hard Rock Regional Centre, Belgaum.
2. Visit to Hard Rock Regional Centre, Belgaum on 29-30 May 2012 for discussions with scientists and staff members regarding technical studies, projects, laboratory equipment, software, infrastructure facilities and other miscellaneous issues.

3. Visit to Hard Rock Regional Centre, Belgaum on 2-3 August 2012 to attend the Brain Storming Session on “Hydrology of Hard Rock Areas” and 22\textsuperscript{nd} meeting of Regional Coordination Committee (RCC).

[H] NIH ANNUAL REPORT

Coordination and miscellaneous follow-up actions related to compilation and printing of Annual Report of NIH for the year 2011-2012 (as Chairman of the Committee).

[I] E-GOVERNANCE

1. Attended the meeting of High Powered Committee on e-Governance on 7.5.2012 at Ministry of Water Resources, New Delhi.

2. Prepared draft reply to three parliament questions related to ‘e-Governance in water resources’.


2. Prepared list of roles and responsibilities of Scientists and Staff Members of Hydrological Investigations division and communicated to all concerned.


[K] MISCELLANEOUS

1. Routine matters pertaining to Hydrological Investigations division; discussions with scientists, scientific staff and project staff regarding technical studies, field and laboratory investigations; supervision and associated with organization of training courses and other activities by the division.


3. Attended the 65th meeting of Technical Advisory Committee (TAC) on 14.5.2012 at New Delhi.

4. Nominated as a senior member of committee constituted for development of NIH website, as per GIGW norms based on Content Management System, through an empanelled firm (NIC).
5. Finalized (alongwith Dr. Anupma Sharma) revised menu items for new NIH website to be developed under domain name nihroorkee.gov.in.


7. Compiled a note for Expert Group to consider the applicability of research findings (in respect of Hydrological Investigations division).

8. Attended the 1st meeting of the Expert Group to consider the ‘applicability of research findings of NIH and suggest a road map for future endeavours’ on 19.9.2012 at New Delhi.


10. Checked 3 papers for Jal Chetna magazine (Hindi).


13. Attended (as external member) on 11.3.2013 the meeting of committee to evaluate the research work of Ms. Nirmal Yadav to upgrade her scholarship to SRF in Department of Mathematics, IIT-Roorkee.

14. Associated (as senior member of the Technical Evaluation Committee) with evaluation of technical bids for AMC of computers and peripherals.

15. Associated (as senior member of the Committee) for inspection and testing of servers delivered at NIH Headquarters.

16. Associated (as senior member of the Committee) for inspection and testing of network for ‘Campus Wide Networking along with Network Security and Management Solution’.

17. Associated (as Chairman of the Committee) for disposal of unserviceable material in the NIH campus.

18. Edited the following web pages -
   - Water Resources and Hydrology Journals
   - Publications of C. P. Kumar
   - Kumar Links to Hydrology Resources
   - Hydrology Links of C. P. Kumar

19. Downloading a number of useful softwares from the internet and their installation.
[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the study "Quantification of Impact of Rainwater Harvesting on Groundwater Availability in Aravalli Hills – Part II: Mathematical Modeling" (April 2010 - March 2012), VS2DT trial runs, and preparation of Interim Report.


3. Prepared lecture notes and powerpoint presentation on “Water Balance Analysis” for training course on ‘Project Hydrology’ to be organized at NIH, Roorkee for 20 participants from African countries.


5. Review of three project proposals for Indian National Committee on Ground Water (INCGW); Centre for Earth Science Studies, Thiruvananthapuram; and BARC, Mumbai.


[B] TECHNICAL PAPERS PUBLISHED


[C] HYDROLOGY PROJECT (Phase – II)

1. Purpose Driven Study (PDS)

Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat (Dr. Anupma Sharma & Mr. C. P. Kumar)
• Regular technical discussions with Principal Investigator (Dr. Anupma Sharma) and project staff regarding progress of study, estimation of water balance components, design of seepage meter, procurement of equipment and other follow-up actions.

• Associated with processing and analysis of data – surface water balance, groundwater balance, soil moisture retention characteristics, TLC graphs, saturated hydraulic conductivity from soil texture.

• Visits to Gandhinagar, Ahmedabad, Porbandar and Rajkot during 8-19 June 2011, 14-21 November 2011 and 24-28 January 2012 for discussions; collection of required data; field investigations (CTD-Diver, Aquameter CRM Auto Resistivity Meter and TLC Meter) in the study area in Porbandar district; downloading of CTD-Diver data; and conducting interview for the post of JRF.

2. Coordinator, Purpose Driven Studies (PDS)

• Coordination of various activities pertaining to Purpose Driven Studies undertaken by NIH and monitoring their physical and financial progress.

• Attended the Workshop on Purpose Driven Studies organized by PCS and TAMC during 20-21 September, 2011 at New Delhi to review the progress of implementation of Purpose Driven Studies.

• Obtained quarterly progress reports from Principal Investigators and updated the status of progress in tabular and text formats for all Purpose Driven Studies.

[D] SYMPOSIUM ATTENDED


[E] NIH ANNUAL REPORT

Coordination and miscellaneous follow-up actions related to compilation and printing of Annual Report of NIH for the year 2010-2011 (as Chairman of the Committee).

[F] E-GOVERNANCE

1. Prepared a note on setup and e-Governance activities at NIH proposed for 12th Plan SFC.


[G] MISCELLANEOUS

1. Attended the 64th meeting of Technical Advisory Committee (TAC) on 1.6.2011 at New Delhi.
2. Attended the Fifth Meeting of the Central Level Expert Group for overall re-assessment of ground water resources of the country on 13.10.2011 at New Delhi.


4. Supported in finalization of technical evaluation of tender bids for networking.

5. Associated with the verification of networking items; and assessing the functionality and serviceability of the items kept in the Computer Centre.


7. Routine matters pertaining to Hydrological Investigations division and discussions with scientists, scientific staff and project staff regarding their work plan studies and other assigned activities.


10. Attended the 32nd Annual General Meeting of NIH Society on 10.3.2012 at New Delhi.


12. Created the technical group “Isotope Hydrology” on Yahoo! Groups.

13. Edited the following web pages -

- Water Resources and Hydrology Journals
- Publications of C. P. Kumar
- Kumar Links to Hydrology Resources
- Hydrology Links of C. P. Kumar

14. Downloading a number of useful softwares from the internet and their installation.

**Year 2010-2011**

[A] TECHNICAL STUDIES AND REVIEWS
1. Associated with the study "Quantification of Impact of Rainwater Harvesting on Groundwater Availability in Aravalli Hills – Part II: Mathematical Modeling" (April 2010 - March 2012), field visit to the study area (Savna watershed in Udaipur district) during 30 August - 3 September, 2010 and discussions with ‘Wells for India’.


3. Prepared an article on “Water Status and Problems in India” for Jal Chetna magazine (Hindi).

4. Reviewed the draft final report of the research project “Integration of Fuzzy Logic and GIS for Delineating Groundwater Source Areas in Bazada Land of Solani River Basin” for INCGW.

5. Evaluation of five research project proposals received by CSIR for funding.

6. Review of four technical papers for Episodes Journal of International Geoscience (one), WAMIP-2010 Regional Workshop at Chandigarh (two), and Indian Journal of Science and Technology (one).

[B] TECHNICAL PAPERS PUBLISHED


[C] HYDROLOGY PROJECT (Phase – II)

1. **Purpose Driven Study (PDS)**

   Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat (Dr. Anupma Sharma & Mr. C. P. Kumar)

   - Visits to Gandhinagar, Ahmedabad, Porbandar and Rajkot during 12-17 April, 2010 and 3-14 January, 2011 for discussions; collection of required data, reports and maps; and field visit to the study area in Porbandar district.
   - Associated with examining and processing of collected data, reports and maps.
   - Regular technical discussions with Principal Investigator (Dr. Anupma Sharma) and project staff regarding progress, estimation of water balance components and other follow-up actions.

2. **Coordinator, Purpose Driven Studies (PDS)**
• Coordination of various activities pertaining to Purpose Driven Studies undertaken by NIH and monitoring their physical and financial progress.
• Attended the meeting with TAMC and PCS on 8-9 September, 2010 at New Delhi regarding review of the technical and financial progress of Purpose Driven Studies.
• Conducted regular PDS meetings of Principal Investigators with Director to discuss technical progress and other issues related to implementation of PDS.
• Obtained quarterly progress reports from Principal Investigators and updated the status of progress in tabular and text formats for all Purpose Driven Studies.

[D] ORGANISATION OF TRAINING COURSE

Associated with organization of the Training Course on “Coastal Groundwater Modeling & Management” (under Hydrology Project, Phase-II) jointly organized by NIH, WALMI and GWRDC during 22-26 November, 2010 at Anand (Gujarat).

[E] TRANSFER OF TECHNOLOGY

1. Delivered the following lectures in the Training Course on “Coastal Groundwater Modeling & Management” organized by NIH, WALMI and GWRDC under Hydrology Project, Phase-II during 22-26 November, 2010 at WALMI, Anand (Gujarat).
   - Groundwater Modelling
   - Estimation of Groundwater Potential
   - Groundwater Data Requirement and Analysis
   - Case Study Goa – Modelling of a Coastal Aquifer using FEFLOW
   - Impact of Climate Change on Groundwater Resources

2. Delivered the following lecture in the Training Course on “Climate Change and its Impact on Water Resources” conducted by The Institution of Engineers (India) - Roorkee Local Centre, IIT-Roorkee, and NIH during 29 November – 3 December, 2010.
   - Impact of Climate Change on Groundwater and Coastal Aquifers

3. Delivered the following lectures in the Training Course on “Application of GIS to Groundwater Modeling and Management” organized by NIH at Roorkee during 28 March - 8 April, 2011 for officers of Ground Water Department, Rajasthan.
   - Estimation of Groundwater Potential
   - Groundwater Data Requirement and Analysis

[F] NIH ANNUAL REPORT

Coordination and miscellaneous follow-up actions related to compilation and printing of Annual Report of NIH for the year 2009-2010 (as Chairman of the committee).

[G] E-GOVERNANCE


3. Prepared a list of actions for implementation of e-Governance at NIH, Roorkee and wrote letters to concerned officers (Administration, Finance, Computer Centre) to initiate necessary actions.

[H] MISCELLANEOUS

1. Conducted meetings of the Committee on 22.6.2010 and 19.7.2010 to prepare the proposal for Cadre Review for Group B & C Staff.

2. Visited Ganga Plains South Regional Centre, Sagar and conducted (as Chairman) the walk-in-interview on 13.9.2010 for selection of two Junior Research Fellow for two ongoing Purpose Driven Studies under HP-II at Sagar regional centre.

3. Associated with the preparation of tender document for “Local Area Network with Security Solutions”.


5. Supported in evaluation of eligibility criteria and technical bids for networking; and preparation of ‘GIGW Compliance Matrix’ (Guidelines for Indian Government Websites).

6. Edited the following web pages -
   • Water Resources and Hydrology Journals
   • Hydrology Resources on the Web
   • Kumar Links to Hydrology Resources

7. Downloading a number of useful softwares from the internet and their installation.

Year 2009-2010

[A] TECHNICAL STUDIES AND REVIEWS

1. Associated with the study “Quantification of Impact of Rainwater Harvesting on Groundwater Availability in Aravalli Hills” (April 2007 - March 2010) and presentation of the progress on 5.3.2010 in the 32nd meeting of the Working Group of NIH.


4. Review of 3 research project proposals received by CSIR and Kerala State Council for Science, Technology and Environment for funding.

5. Review of the working draft on “Ground Water Policy – Uttar Pradesh State” (Janhit Foundation, Meerut) and the draft of “Guidelines on Geophysical Exploration for Ground Water in Hard Rocks” (BIS).

6. Review of 3 technical papers received for publication in Hydrology Journal of Indian Association of Hydrologists.

[B] TECHNICAL PAPERS PUBLISHED


[C] SPONSORED PROJECT

Associated with the project “Study of Rising Ground Water Table in Jodhpur City, and to Evolve a Management Plan to Contain the Rising Trend” referred by Groundwater Department, Government of Rajasthan.

- Studied the report entitled “Rising Water Level Problem in Jodhpur Area, Rajasthan” (CGWB, 2001).

[D] HYDROLOGY PROJECT (Phase – II)

1. Decision Support System (Planning)

Carried out following works as a member of “NIH Working Group on DSS (Planning)”.


• Visited Gandhinagar during the period 17-23 May, 2009 (alongwith DHI Consultants and Dr. Anupma Sharma, Coordinator for Gujarat) for “Needs Assessment”.
• Prepared comments on “Needs Assessment Main Report”.
• Attended the “Needs Assessment Workshop” during 5-6 August, 2009 at New Delhi.
• Prepared the draft of DSS conceptualization and design for “Conjunctive Use Planning of Surface Water and Groundwater” module.
• Attended the meeting between officers of CGWB, NIH and DSS consultant on 20.11.2009 at New Delhi regarding distributed groundwater modeling and other related issues for development of DSS (Planning).
• Attended the “DSS Model Conceptualization Workshop” on 7.1.2010 at New Delhi.
• Prepared observations on “Action Taken on the Comments on the DSS Model Conceptualization Report under DSS (Planning)” and suggestions (as a member of Conjunctive Use Planning module).
• Attended the second meeting of Review Committee of DSS (Planning) on 8.2.2010 at Roorkee.
• Attended the meeting of ‘Supervision Review Mission’ of World Bank with DHI and NIH on 8.3.2010 at New Delhi.
• Attended the meeting between representatives of World Bank, PCS, DHI and NIH regarding groundwater and other issues related to development of DSS (Planning) on 26.3.2010 at New Delhi.

2. Purpose Driven Study (PDS)

*Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat* (Dr. Anupma Sharma & Mr. C. P. Kumar)

• Visit to Gandhinagar, Ahmedabad and Rajkot during 9, 10, 11, 14 December, 2009 for discussions and collection of required data, reports and maps.
• Field visit on 12-13 December, 2009 to salinity prevention works (spreading channels and tidal regulator) in coastal area of Porbandar district and identification of 10 suitable sites for installation of new piezometers in the study area (Minsar basin of Porbandar district).
• Prepared draft format for socio-economic survey in Porbandar.
• Finalization of piezometer depths (for additional piezometers to be installed) in coordination with Dr. Anupma Sharma (Principal Investigator).
• Presentation of the technical progress on 5.3.2010 in the 32nd meeting of the Working Group of NIH.
• Regular technical discussions with Principal Investigator (Dr. Anupma Sharma) and project staff regarding progress and follow-up actions.

3. Coordinator, Purpose Driven Studies (PDS)

• Coordination of various activities pertaining to Purpose Driven Studies undertaken by NIH and monitoring their physical and financial progress.
• Prepared the “Procurement Procedure for Purpose Driven Studies”.

• Prepared powerpoint presentation regarding status of physical and technical progress of various Purpose Driven Studies.
• Attended the 7th meeting of HISMG (Tech), Hydrology Project, Phase – II on 25.9.2009 at New Delhi.
• Attended the meeting of MTR (Mid Term Review) Mission (Hydrology Project, Phase-II) on 13.10.2009 at World Bank, New Delhi.
• Attended the Workshop on Purpose Driven Studies (Hydrology Project – II) organized by PCS (MOWR) during 23-24 November, 2009 at New Delhi.
• Attended the Workshop on “Success Stories and Experiences under HP-II” on 22.12.2009 at CSMRS, New Delhi.
• Conducted monthly PDS meetings of Principal Investigators with Director to discuss technical progress and other issues related to implementation of PDS at NIH.

[E] TRANSFER OF TECHNOLOGY


[F] WORKSHOP ATTENDED


[G] NIH ANNUAL REPORT

Coordination and miscellaneous follow-up actions related to compilation and printing of Annual Report of NIH for the year 2008-2009 (as Chairman of the committee).

[H] MISCELLANEOUS

1. Carried out various tasks and election duty as Sector Officer for 22 polling booths in 29-Jhabrera (Sector-7) for General Elections - 2009.

2. Prepared draft proposal for a training course on “Groundwater Modelling and Management” for Tanzanian Water Engineers under the Indo-Lesotho Joint Capacity Building Programme.

3. Indian National Committee on Ground Water (INCGW) nominated me as a member of Expert Panel in “Surface Water – Ground Water Interaction” for reviewing R&D project proposals and draft project reports.
4. Examined the networking proposals of Technet, MROTEK and D-Link regarding Networking Solutions for NIH.

5. Presented an episode on “Impact of Climate Change on Groundwater Resources” for recording by Educational Multimedia Research Centre (EMMRC), Indian Institute of Technology, Roorkee.

6. Prepared a write-up on the relevant agenda items and attended first meeting of the Working Group (constituted under the committee on sharing data/knowledge available in the Ministry of Water Resources) on 22.2.2010 at New Delhi.

7. Moderated the following electronic discussion groups on Yahoo!:
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

8. Edited the following webpages -
   - Water Resources and Hydrology Journals
   - Kumar Links to Hydrology Resources

9. Downloading a number of useful softwares from the internet and their installation.

**Year 2008-2009**

[A] TECHNICAL STUDIES

1. Associated with the ongoing study “Quantification of Impact of Rainwater Harvesting on Groundwater Availability in Aravalli Hills”.

2. Collection and review of literature related to rainwater harvesting.

3. Attended the 9th and 10th meetings of “R & D Advisory Committee on Ground Water Estimation” on 9.5.2008 and 17.9.2008 respectively.


[B] TECHNICAL PAPERS PUBLISHED


[C] SPONSORED PROJECT

Associated with the project “Hydrological and Hydrogeological Investigations to Assess Causes of Seepage from the Reservoir of Jaswant Sagar Dam in Jodhpur, Rajasthan” referred by Water Resources Department, Government of Rajasthan.

- Computed the weighted average infiltration rates in Jaswant Sagar reservoir for the period 1973 to 2005 and prepared a brief write-up on “Seepage Losses from Jaswant Sagar Reservoir”.
- Computed the runoff volumes for Jaswant Sagar reservoir (through Excel spreadsheet) for rainfall events of 1987 to 1994.

[D] HYDROLOGY PROJECT (Phase – II)

1. Decision Support System (Planning)

Carried out following works as a member of “NIH Working Group on DSS (Planning)”.

- Visited Raipur during 27-30 April, 2008 to review and discuss the status of data availability and processing for Chhattisgarh state and attended the first meeting of IDEG (Inter-agency DSS Expert Group of Chhattisgarh state).
- Prepared a general report on Seonath Sub-basin (Chhattisgarh).
- Attended the “Inception Workshop for DSS (Planning) Consultancy” during 9-10 February, 2009 at New Delhi.
- Visited Gandhinagar on 11.2.2009 for discussion regarding preparatory activities for DSS (Planning) for Gujarat.

2. Purpose Driven Study (PDS)

Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat (Dr. Anupma Sharma & Mr. C. P. Kumar)

- Visited Gandhinagar on 11.2.2009 for discussion regarding the above PDS proposal.
- Field visit to the identified study area in Porbandar on 12.2.2009 for the above PDS proposal.

[E] IMPACT OF CLIMATE CHANGE

1. Collection and review of literature related to impact of climate change on groundwater resources.

2. Prepared a technical note related to effect of climate change on groundwater, as required by Standing Committee on Agriculture.
[F] TRANSFER OF TECHNOLOGY


[G] SYMPOSIUM ATTENDED

1. 13th National Symposium on Hydrology with focal theme on “Inflow Forecasting during Extremes” during 28-29 August, 2008 at New Delhi.


[H] WEES-2009

1. Reviewed 5 technical papers for the Conference.

2. Associated with organization of the Conference as Convener of the sub-committee on Press and Publicity (including Photography & Videography).

3. Acted as Rapporteur for the Technical Session on Ground Water (2).

[I] COMPUTER CENTRE

Carried out various activities as Head, Computer Centre (till 1.9.2008).

- Overall management of Computer Centre.
- Supporting Officer-in-Charge, Computer Centre regarding procurement of computers, peripherals, software etc; maintenance contracts; LAN, e-mail and internet services; maintaining NIH website; condemnation & auction process, and other related matters.
- Processing for re-designing of NIH website.

[J] MISCELLANEOUS

1. Acting as a member of “Library Advisory Committee”.

2. Contributing as an Associate Editor for “International Journal of Water Resources and Environmental Management” (IJWREM).

3. Attended the short course on “Introduction to ArcGIS 9” conducted by ESRI, India during 14-18 April, 2008 at New Delhi.

4. Conducted a debate competition as a part of ‘Hindi Week’ celebrations.
5. Presented the two episodes on “Concepts of Groundwater Modelling” for recording by Educational Multimedia Research Centre (EMMRC), Indian Institute of Technology, Roorkee.


7. Created the “Yahoo! Groups - archydro”, an e-mail discussion group on ‘ArcGIS – Geographical Information System’.

8. Moderated the following electronic discussion groups on Yahoo!:
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

9. Downloading a number of useful softwares from the internet and their installation.

**Year 2007-2008**

[A] TECHNICAL STUDIES

1. Prepared the technical report entitled “Modelling of a Coastal Aquifer using FEFLOW”.


3. Review of two project proposals received by DST and CSIR for funding.

[B] TECHNICAL PAPERS PUBLISHED


[C] SPONSORED PROJECT

Associated with the project “Hydrological and Hydrogeological Investigations to Assess Causes of Seepage from the Reservoir of Jaswant Sagar Dam in Jodhpur, Rajasthan” referred by Water Resources Department, Government of Rajasthan.

- Field visit to Jaswant Sagar Dam and Jodhpur during 26-27 September, 2007; discussion with various officials; and collection of required data.
- Computed the water loss rates (mm/day) for three gauge ranges for the years 1979 and 1980.
- Derived saturated hydraulic conductivity from soil texture at 9 locations.
- Prepared a note on measured soil characteristics for southern part of the water spread area of Jaswant Sagar dam (for Interim Report).
- Computed UTM coordinates corresponding to latitude-longitude of 16 infiltration test locations in Jaswant Sagar reservoir.

[D] HYDROLOGY PROJECT (Phase – II)

1. Decision Support System (Planning)

Carried out following works as a member of “NIH Working Group on DSS (Planning)”.

- Prepared a note on “Blueprint of Proposed DSS for Water Resources Planning”.

2. Hydrologic Design Aids (Ground Water)

Attended the workshop for Hydrologic Design Aid (Ground Water) on 30.8.2007 at CSMRS, New Delhi.

[E] IMPACT OF CLIMATE CHANGE

Prepared a note on “Impact of Climate Change on Groundwater”, as a part of the document on ‘Climate Change and its Impact on Indian Water Resources’.

[F] TRANSFER OF TECHNOLOGY


[G] SYMPOSIUM ATTENDED

[H] COMPUTER CENTRE

Carried out various activities as Head, Computer Centre.

- Overall management of Computer Centre.
- Supporting Officer-in-Charge, Computer Centre regarding procurement of computers, peripherals, software etc; maintenance contracts; LAN, e-mail and internet services; maintaining NIH website; condemnation & auction process, and other related matters.
- Processing for AMC of Personal Computers and Networking System.
- Updating the website of National Institute of Hydrology, Roorkee.
- Processing for re-designing of NIH website.
- Associated with auction process of VAX-11/780 system and its peripherals.

[I] MISCELLANEOUS


2. Presented the following episodes for recording by Educational Multimedia Research Centre (EMMRC), Indian Institute of Technology, Roorkee.
   - Seawater Intrusion in Coastal Aquifers
   - Modelling of a Coastal Aquifer using FEFLOW
   - Computer Security (3 episodes)


4. Conducted a debate competition as a part of ‘Hindi Week’ celebrations.


6. Moderated the following electronic discussion groups on Yahoo!:
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

7. Editing of the following web pages:
   - Kumar Links to Hydrology Resources
   - Hydrology Links of C. P. Kumar
8. Downloading a number of useful softwares from the internet and their installation.

**Year 2006-2007**

[A] TECHNICAL STUDIES

1. The study “Modelling of a Coastal Aquifer using FEFLOW” was completed with the following works.

   • Study of FEFLOW 5.1 help files.
   • Data preparation and model setup.
   • FEFLOW simulation runs.
   • Sensitivity analysis for various parameters.
   • Analysis of simulation results.
   • Initiated write-up for technical report.

2. Regression analysis to find van Genuchten parameters at 18 locations in Lokapavani catchment.

3. Review of a technical paper received for publication in Journal of Spatial Hydrology and review of a project proposal received by DST.

[B] TRANSFER OF TECHNOLOGY


[C] SYMPOSIUM ATTENDED


[D] HYDROLOGY PROJECT (Phase – II)

1. Associated with finalization of concept paper on “Hydrologic Design Aids (Ground Water)” by CGWB, NIH and CPCB.

2. Carried out following works as a member of “NIH Working Group on DSS (Planning)”.

   • Studied the draft document on “Request for Proposals for Selection of Consultants” and prepared observations/comments/suggestions.
• Prepared proposed schedule and cost estimate for international trainings and study tours.

• Studied and evaluated the Expression of Interest for “Consultancy Services: Development of Decision Support System (Planning) for Integrated Water Resources Development and Management” by Delft Hydraulics.

• Revised the list of prioritized outputs for DSS module on “Conjunctive Use Planning for Surface Water and Groundwater”.

[E] SPONSORED PROJECT

Associated with the project “Regional Hydro-geological Studies around Kasnau-Matasukh Lignite Mines, Nagaur District (Rajasthan)” referred by Rajasthan State Mines and Minerals Limited.

[F] ENQUIRY OFFICER

Conducted departmental enquiry against Mr. Satendra Prasad, Staff Car Driver (Grade-II), Regional Centre, Sagar with reference to Order No. 5/2/88-NIH(Admn.) dated May 3, 2006 and submitted the report of the Enquiry Officer.

[G] COMPUTER CENTRE

Carried out various activities as Head, Computer Centre.

1. Overall management of Computer Centre.
2. Miscellaneous follow-up actions related to local area network; internet and e-mail services; annual maintenance contract with ERNET India.
3. Guiding Officer-in-Charge, Computer Centre regarding procurement of computers and accessories; annual maintenance contract for personal computers and networking system; and other related matters.
4. Updating the website of National Institute of Hydrology, Roorkee.
5. Processed BSNL broadband internet connectivity for Director and Heads of RCMU & scientific divisions.
6. Upgradation of LAN (local area network).

[H] MISCELLANEOUS

1. Studied/examined the on-going INCOH project proposal on “Ground Water Recharge Studies in the Thar Desert Terrain of Rajasthan through Surplus Water” and correspondence with Principal Investigator to monitor its progress.

2. Associated with organization of 12th National Symposium on Hydrology – editing of technical papers; co-convener of Invitation Committee; procurement of memento etc.

4. Acting as a member of “IAH Executive Committee” for the term 2005-2006.

5. Conducted a debate competition as a part of ‘Hindi Week’ celebrations.


7. Moderated the following electronic discussion groups on Yahoo!:
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

8. Editing of the following web pages:
   - Kumar Links to Hydrology Resources
   - Hydrology Links of C. P. Kumar
   - Water Resources and Hydrology Journals

9. Downloading a number of useful softwares from the internet and their installation.

**Year 2005-2006**

[A] TECHNICAL STUDIES

1. The following actions were taken for the study “Modelling of a Coastal Aquifer using FEFLOW”.
   - Measurement of monthly groundwater level data (till August 2005).
   - Bi-monthly groundwater sampling and measurement of salinity in the laboratory (till June 2005).
   - Initial processing of collected and measured data.
   - Preparation of monthly groundwater level contour maps.
   - Resistivity profiling along 4 sections and vertical electrical soundings at 7 locations.
   - Studied the “FEFLOW 5.1 User’s Manual”.

2. Prepared powerpoint presentations on “Modelling of Seawater Intrusion” and “Introduction to Groundwater Modelling”.

3. Regression analysis to find an empirical relationship between saturated hydraulic conductivity and soil texture (percentages of clay, silt and sand) for 171 sets of soil data.

4. Review of a number of technical papers received for publication in Hydrology Journal of IAH (Paper Ref. 429, 441); Current Science Journal (Ref. No. N395, N55); and Journal of Spatial Hydrology.
[B] TECHNICAL PAPERS PUBLISHED


[C] BOOK CHAPTERS


[D] TRANSFER OF TECHNOLOGY


[E] COMMUNICATION AND TELEPHONES (till September 2005)

1. Routine follow-up actions related to Communication division.

2. Editing of the telephone directory.

3. Modifications in the Tender Application Form for proposed “Digital EPABX System”.

4. Procurement of push-button telephone instruments.

5. Proposal to ‘Condemnation Committee’ to declare the CDOT EPABX system obsolete.

[F] COMPUTER CENTRE (from November 2005)

Taken over the charge of Head, Computer Centre vide Office Order No. 6/14/2004-NIH dated Nov. 23, 2005.

1. Miscellaneous follow-up actions related to Computer Centre.

2. Updating the website of National Institute of Hydrology, Roorkee.

3. Correspondence with ERNET India and DCM Data Systems regarding internet connectivity and LAN problems.
4. Submission and processing of the following proposals:
   - Annual Maintenance Contract of personal computers and networking system
   - Permission of Ministry of Water Resources for procurement of messaging system
   - Payment of quarterly subscription charges for VSAT connectivity
   - Payment of quarterly charges for AMC of personal computers and networking system
   - Procurement of 3 laser printers
   - Procurement of 2 laptop computers

[G] MISCELLANEOUS

1. Examined the project proposal on “Tsunami Impact (with special reference to water quality) in the Kanyakumari Coastal Aquifer, Tamil Nadu, India” sent by CSIR to National Institute of Hydrology for review.

2. Nominated as a member of the committee constituted for identifying the scope of the content and the services related to Ministry of Water Resources for National Portal Project (to provide single window access to the information and online services being provided by various government departments).


4. Acting as a member of “IAH Executive Committee” for the term 2005-2006.

5. Moderated the following electronic discussion groups on Yahoo!:
   - hydforum (Hydrology Forum)
   - hydrologymodel (Hydrological Modelling)
   - gwmodel (Ground Water Modelling)
   - rhydrology (Roorkee Hydrology Group)

6. Editing of the following web pages:
   - Kumar Links to Hydrology Resources
   - Hydrology Links of C. P. Kumar
   - Google Groups in Hydrology
   - Hydrology Resources on the Web

7. Downloading a number of useful softwares from the internet and their installation.

Year 2004-2005

[A] TECHNICAL STUDIES

1. The following actions were taken for the study “Modelling of a Coastal Aquifer using FEFLOW”.

• Field visit to the study area, Goa University and National Institute of Oceanography, Goa.
• Technical discussions with Dr. A. G. Chachadi, Goa University.
• Collection of relevant data, literature and maps.
• Identification of 20 observation wells for monitoring groundwater levels and salinity.
• Measurement of monthly groundwater level data.
• Bi-monthly groundwater sampling and measurement of salinity in the laboratory.
• Measurement of infiltration and hydraulic conductivity at 8 locations.
• Soil sampling at 8 locations and measurement of soil moisture retention characteristics in the laboratory.
• Initial processing of collected and measured data.
• Upgradation of FEFLOW software (FMH3) from v4.7 to v5.1.
• Studied the “FEFLOW Demonstration Exercise”.


[B] TECHNICAL PAPERS PUBLISHED


[C] THE ENCYCLOPEDIA OF WATER


[D] TRANSFER OF TECHNOLOGY

Delivered the following lectures in the Training Course on “Mathematical Modelling of Groundwater Systems” organized by Department of Hydrology, Indian Institute of Technology, Roorkee during the period 28 March to 8 April, 2005.

1. Groundwater Balancing
2. Groundwater Flow Models

[E] SEMINAR/WORKSHOP ATTENDED

1. Harvest Day Seminar on “Sustainable Use of Groundwater in North-West India”, 13 April 2004, organized by Centre for Advancement of Sustainable Agriculture (CASA) at Indian National Science Academy (INSA), New Delhi.


[F] ELEVENTH NATIONAL SYMPOSIUM ON HYDROLOGY


[G] INQUIRY OFFICER

Conducted departmental enquiry against Mr. Vedpal, Attendant, Meteorological Laboratory with reference to Order No. 15/17/2004-NIH(Admn) dated May 20/21, 2004 and submitted the report of the Inquiry Officer.

[H] COMMUNICATION AND TELEPHONES

1. Routine follow-up actions related to Communication division.
2. Editing of the telephone directory.
3. Replacement of console in telephone exchange.
4. Preparation of specifications and tender document (Tender Notice & Tender Application Form) for “Digital ISDN EPABX System”.
5. Installation of internal phones in every room.
6. Submission and processing of the following proposals:
   - Maintenance Contract of EPABX system
   - Procurement of digital ISDN EPABX system
   - Procurement of push-button telephone instruments

[I] MISCELLANEOUS

1. Examined the project proposal on “Management of Groundwater Resources in Rural India through Scientific and Community Participation Approach” sent by Department of Science and Technology (DST) to National Institute of Hydrology for review.


3. Elected as one of the Members of IAH Executive Committee for the term 2005-2006.


5. Created the following web pages:
   - Software User Groups in Groundwater Modelling
   - Google Groups in Hydrology
   - Hydrology Resources on the Web

6. Editing of the following web pages:
   - National Institute of Hydrology, Roorkee
   - National Institute of Hydrology, Belgaum
   - Kumar Links to Hydrology Resources
   - Hydrology Links of C. P. Kumar

7. Downloading a number of useful softwares from the internet and their installation.

Year 2003-2004

[A] TECHNICAL STUDIES


2. The study “Modelling of a Coastal Aquifer using FEFLOW” is under progress with extended scope. It was presented for in-house discussions.


5. Review of a number of technical papers received for publication in Hydrology Journal of IAH.

[B] TECHNICAL PAPERS PUBLISHED


[C] BOOK ON GROUNDWATER MODELLING AND MANAGEMENT
Prepared the following chapters for the proposed book on “Groundwater Modelling and Management” to be edited by Dr. K. D. Sharma and Dr. N. C. Ghosh, National Institute of Hydrology, Roorkee.

1. Groundwater Flow Models - An Overview
2. Management of Groundwater in Salt Water Ingress Coastal Aquifers

[D] RESEARCH PROJECT

Associated with formulation and submission of a research proposal on “Development of Technologies for Augmenting Groundwater Reservoirs through Artificial Recharge in Hydrologically Critical Areas of Indo-Gangetic Basin” (CN 156) for competitive grant funding under the Challenge Program on Water and Food.

[E] TRANSFER OF TECHNOLOGY

Delivered the following lectures in the Training Course on “Groundwater Assessment and Modelling” organized by National Institute of Hydrology at Roorkee for U.P. Ground water Department during 9-19 February, 2004.

1. Groundwater Assessment Methodology
2. Groundwater Flow Models
3. Groundwater Modelling Errors

[F] CONFERENCE ATTENDED

Attended the National Conference on “Jal Sansadhan Ke Kshetra Me Bhavi Chunotian” held at National Institute of Hydrology, Roorkee during 16-17 December 2003 and presented report of the technical session on “Satahi Jal Evam Bhujal Uplabdhatata”.

[G] COMMUNICATION AND TELEPHONES

Taken over the charge of Officer-in-Charge, Communication & Telephones (w.e.f. 1.1.2004) vide Office Order No. 6/14/2003-NIH(SAO) dated December 29, 2003.

1. Routine follow-up actions related to Communication division.
2. Editing of the telephone directory.
3. Submission and processing of the following proposals:
   • Procurement of push-button telephone instruments
   • Annual Maintenance Contract of EPABX system
   • Procurement of digital ISDN EPABX system

[H] MISCELLANEOUS

2. Suffered with ‘disc slip’ and stayed on medical leave during the period 30 July to 25 September, 2003 (58 days).


4. Nominated as Associate Editor-in-Chief for "Journal of Spatial Hydrology" (an international electronic journal available via internet) – ISSN: 1530-4736.

5. Created the “Yahoo! Groups India - hydrologymodel”, an e-mail discussion group on ‘Hydrological Modelling’.

6. Editing of the following web pages:
   - National Institute of Hydrology, Roorkee
   - Kumar Links to Hydrology Resources
   - Hydrology Links of C. P. Kumar
   - Publications of C. P. Kumar

7. Downloading a number of useful softwares from the internet and their installation.

**Year 2002-2003**

**[A] TECHNICAL STUDIES**


3. The study “Modelling of a Coastal Aquifer using FEFLOW” (2002-2003) has been initiated and will be continued in 2003-2004.


**[B] TECHNICAL PAPERS PUBLISHED**


[C] HYDROLOGY PROJECT

Associated with the R & D proposal "Estimation of Irrigation Return Flow in Lokapavani Area in Krishnarajasagar Command, Karnataka".

[D] WORKSHOP ORGANISED

Organised a workshop on “Remote Sensing and GIS Applications in Hydrology” at Belgaum during the period 23-25 September, 2002.

[E] TRAINING ATTENDED

Attended the end user training on “Ground Water Estimation & Management System” (GEMS) at Central Ground Water Board, Faridabad during the period 25.11.2002 to 5.12.2002.

[F] MISCELLANEOUS

1. Monitoring (as Head) the various activities of Hard Rock Regional Centre, National Institute of Hydrology, Belgaum.

2. Conducted (as Member Secretary) the 13th meeting of Regional Coordination Committee (RCC) for Hard Rock Regional Centre at Hyderabad on 10.4.2002.
3. Continued in Editorial Board (as one of the consulting editors) of "Journal of Spatial Hydrology" (an electronic journal available via internet) – ISSN: 1530-4736.

4. Editing of the following web pages:
   - Kumar Links to Hydrology Resources
   - National Institute of Hydrology, Belgaum
   - (c) National Institute of Hydrology, Roorkee

5. Downloading a number of useful softwares from the internet and their installation.

**Year 2001-2002**

[A] TECHNICAL STUDIES


2. Collection of literature, visit to the study area (Cambolin, Goa) and ground water sampling for the study “Modelling of Sea Water Intrusion in a Coastal Aquifer” (2001-2002).


5. Supervision of technical studies of Hard Rock Regional Centre, National Institute of Hydrology, Belgaum.

[B] TECHNICAL PAPERS PUBLISHED


[C] HYDROLOGY PROJECT

Associated with the R & D proposal "Estimation of Irrigation Return Flow in Lokapavani Area in Krishnarajasagar Command, Karnataka".

[D] MISCELLANEOUS

1. Monitoring (as Head) the various activities of Hard Rock Regional Centre, National Institute of Hydrology, Belgaum.

2. Follow-up actions for twelfth meeting of RCC for Hard Rock Regional Centre, NIH, Belgaum.

3. Continued in Editorial Board (as one of the consulting editors) of "Journal of Spatial Hydrology" (an electronic journal available via internet) – ISSN: 1530-4736.

4. Created the “Yahoo! Groups – gwmodel”, an e-mail discussion group on ‘Ground Water Modeling’.

5. Editing of the following web pages:
   - Kumar Links to Hydrology Resources
   - National Institute of Hydrology, Belgaum

6. Subscribed the various Hydrology-related e-mail discussion groups.

7. Downloading a number of useful softwares from the internet and their installation.
Year 2000-2001

[A] TECHNICAL STUDIES


4. Study of HST3D documentation, preparation of notes, test run of HST3D (DOS version) for example problem and examination of Argus MeshMaker Demo.

5. Supervision of technical studies of Hard Rock Regional Centre, National Institute of Hydrology, Belgaum.

[B] TECHNICAL PAPERS PUBLISHED


[C] HYDROLOGY PROJECT

1. Associated with the R & D proposal "Estimation of Irrigation Return Flow in Lokapavani Area in Krishnarajasagar Command, Karnataka".

2. Visit to Lokapavani command area and six field observation (V-notch and tensiometer) plots, and derivation of soil moisture characteristics (h-θ and K-h relationships) for 14 locations in Lokapavani area through non-linear regression analysis.

[D] WORKSHOP ORGANISED

Organised the workshop on “Modelling of Hydrologic Systems” at Hard Rock Regional Centre, National Institute of Hydrology, Belgaum during the period 4-8 September, 2000.

[E] TRANSFER OF TECHNOLOGY
Delivered the following lectures in the workshop on “Modelling of Hydrologic Systems” organised by Hard Rock Regional Centre, National Institute of Hydrology at Belgaum during the period 4-8 September, 2000.

1. Ground Water Balance
2. Modelling of Unsaturated Flow
3. Modelling of Sea Water Intrusion

[F] AWARD

The Institution of Engineers (India) awarded the Certificate of Merit for the paper entitled "Modelling of Soil Moisture Movement" published in the Journal of the Institution (Twenty-first day of December, 2000).

[G] SUPERVISION OF M.TECH. DISSERTATION


[H] MISCELLANEOUS

1. Monitoring (as Head) the various activities of Hard Rock Regional Centre, National Institute of Hydrology, Belgaum.
2. Arranged the “National Technology Day” celebration on 11.5.2000 (Theme: Technology for Advancement of Science).
3. Edited the brief write-up covering the studies (statewise) carried out by Belgaum regional centre since its inception, as required for the 21st Annual General Meeting of NIH Society on 2nd December, 2000.
4. Prepared the agenda notes for twelfth meeting of RCC for Hard Rock Regional Centre, NIH, Belgaum.
5. Included in Editorial Board (as one of the consulting editors) of "Journal of Spatial Hydrology" (an electronic journal available via internet) – ISSN: 1530-4736.
7. Created the “Hydrology Forum” (an e-mail discussion group) in ‘Topica’.
8. Subscribed the various Hydrology-related e-mail discussion groups.
9. Downloading a number of useful softwares from the internet and their installation.