

**MINUTES OF 64<sup>th</sup> MEETING OF  
TECHNICAL ADVISORY COMMITTEE OF  
NATIONAL INSTITUTE OF HYDROLOGY  
HELD ON JUNE 1, 2011 AT NEW DELHI**

The 64<sup>th</sup> meeting of the Technical Advisory Committee (TAC) of the National Institute of Hydrology, Roorkee was held in the Conference Room No. 525(S) of the Central Water Commission, New Delhi on June 1, 2011. The meeting was chaired by Shri A.K. Bajaj, Chairman, Central Water Commission (CWC). The list of the participants is given in Appendix -I.

Chairman in his opening remarks welcomed the members and the invitees. He briefed about the reconstitution of the TAC by the Governing Body of NIH. He appreciated the work being carried out by NIH, and urged that the Institute should gear up to handle new challenges. He further mentioned that the present year is the last year of the 11<sup>th</sup> Plan, and NIH need to be ready for the 12<sup>th</sup> Plan. He then requested the Member-Secretary to take up the agenda.

Dr V C Goyal, Member-Secretary, also welcomed the Chairman, members and invitees. He then took up the agenda items one by one.

**ITEM NO. 64.2: Confirmation of the Minutes of 63<sup>rd</sup> Meeting of TAC**

The Member-Secretary informed that the minutes of the 63<sup>rd</sup> meeting of the TAC, held on December 28, 2010 at New Delhi, was circulated vide letter no. NIH/RCMU/64TAC/11 dated March 4, 2011. Since no comments were received from the members, the Minutes were confirmed by the TAC.

**ITEM NO. 64.3: Action Taken on the Decisions/Recommendations in the Previous Meeting**

The Member-Secretary presented the actions taken with regard to the various suggestions/recommendations made by TAC in its previous meetings. The TAC noted the actions taken.

**ITEM NO. 64.4: Status and Progress of the Work Programme for the Year 2010-2011**

The Member-Secretary briefed about the studies carried out by the Institute during the year 2010-2011. He informed that 136 research papers have been published by the Institute and 9 research papers have been accepted for publication during the period. He further informed that 11 training courses/workshops/symposia were organized during Nov, 2010-Apr, 2011. Members appreciated the number of publications brought out by the Institute and number of training/workshop/symposium organized by Institute. Dr Perumal suggested that NIH should try to highlight the 'impact factor' publications. Dr Patra enquired about joint publications with researchers from academia and other

research institutions. Members appreciated the efforts made by NIH for organizing the various activities.

Comments/suggestions of the members on the following completed studies, as presented by the respective scientists, are given below:

<b>S N</b>	<b>Study</b>	<b>Comments/suggestions</b>
1	NIH_ReSyp-A software for Reservoir Analysis (Ver.-I), by Dr M K Goel	Dr Patra enquired on availability of the software package. Dr Perumal commented that in general documentation of the products is poor, and should be improved.
2	Snow Melt Runoff Modeling Using Fuzzy Logic, by Dr A K Lohani	Mrs Gupta enquired whether baseflow is computed in the technique. Dr Perumal wanted to know the improvement achieved over the existing methods- to which Dr Lohani replied that it was 3-4%.
3	Modelling of Pesticide Transport in Ground Water – a case study of Metropolitan City – Vadodara, by Dr M.K. Sharma	Dr Trivedi opined that since presence of pesticide is associated with sediments, analysis of sediments along with water is important.
4	Acid Mine Drainage in Coal Mining Areas of Meghalaya, by C. K. Jain (Dr Bhishm Kumar, Sc. 'F' presented the study on behalf of Dr C K Jain)	Dr Trivedi commented that information on sulphur content is needed in the mined areas. The chairman and Dr Perumal appreciated the study.
5	Study of Rising Ground Water Table in Jodhpur City, and to Evolve a Management Plan to contain the Rising Trend, by Dr N C Ghosh	Dr Trivedi enquired whether increase in the Cl level has any link with the drinking water.

#### **ITEM NO. 64.5: Report the Proceedings of the Working Group Meeting**

The Member-Secretary briefed about the 34<sup>th</sup> Working Group meeting of NIH, which was held at NIH, Roorkee, during April 7-8, 2011. During this meeting, the Working Group members reviewed the progress of studies for the reported period and also discussed the proposed work programme for the year 2011-2012. He presented the major recommendations of the working group.

#### **ITEM NO. 64.6: Finalization of the Work Programme for the Year 2011-2012**

The Member-Secretary briefed about the proposed work programme of the Institute for the year 2011-2012, which was discussed during the 34<sup>th</sup> Working Group meeting of NIH.

Dr Trivedi opined that NIH should identify core research areas of national importance. After putting these core research areas on the NIH's web site, suggestions may be invited from researchers and other stakeholders. He further suggested that a list of 'need-based studies' and issues may be prepared by considering support to the nationally awarded projects and studies. The Chairman appreciated this idea and advised exploring the idea of 'invited research'.

Er Ravindra Kumar made a strong case for NIH to take a lead role in guiding the nation with regard to proper assessment techniques of environmental flow in rivers. He also suggested taking up river basin planning and climate change studies. He requested that NIH should take up a focused study in the Bundelkhand region.

Sri Apte informed that the DST has already listed 25 priority areas under their programme 'War on Water', and suggested that NIH should take up selected studies from this list. Mrs Gupta suggested studies on the quantification of base flow, and studies on spring flow in hilly regions.

The list of proposed studies recommended by the TAC for the year 2011-2012 is given in Appendix-II.

#### **ITEM NO. 64.7: Revision of Regional Coordination Committees (RCCs)**

The Member-Secretary briefed the TAC members about the role and existing composition of the RCCs at various RC/CFMS. He mentioned that in view of the emerging challenges in hydrology and water resources, professional requirements demand a multidisciplinary approach in R&D activities at these Centres. Moreover, since these Centres of NIH are expected to address the regional water-related challenges and issues, involvement of different stakeholders is desirable. Keeping this in view, there is a need to re-constitute the respective RCCs with representation of individual subject experts and renowned NGOs working in the water sector.

Sri Apte opined that representatives from IMD should be included in RCC of Jammu and Guwahati Centers. He also added that wherever the issue of environmental flow is required to be considered, the representative of MOEF in the RCC of regional centre and CFMS should be included. Mrs. Anita Gupta likewise opined that representative of CGWB and CWC should be included as a member of the RCC of RC's and CFMS.

The TAC suggested that the proposed revised composition of the RCCs may be submitted in the next meeting for consideration by the TAC.

#### **ITEM NO. 64.8: Views on Work Programme for the 12<sup>TH</sup> Plan**

Director, NIH, mentioned that the process for formulation of the 12<sup>th</sup> Plan has already begun and National Water Mission (NWM) is likely to be initiated soon. It is, therefore, high time that a road map is drawn to take up the challenges during operation of the 12<sup>th</sup> Plan. For this, he told that some of the study areas of the XI<sup>th</sup>

Plan period shall be continued, and the Institute would like to take up few other areas considered to be relevant in view of the emerging techno-managerial challenges and expectations of the stakeholders. An indicative list of such study areas/themes was presented before the members. Dr N C Ghosh informed the TAC that the Achievement Review Committee (ARC) has submitted its report to the Hon'ble Union Minister (WR). The ARC has recommended sixteen research areas for future work. The Chairman suggested that the members may send to NIH their views and suggestions on the likely areas, which should be pursued by the Institute during the 12<sup>th</sup> Plan period.

**ITEM NO. 64.9: Reporting Items**

1. Details of the consultancy projects and Technical Services carried out by NIH during the year 2010-2011 were noted by the TAC members.
2. The studies carried out at NIH related to the theme of Climate Change were presented, and it was reported that the work program under this theme for the year 2011-2012 included studies on:
  - i. Snowmelt Runoff Modeling and Study of the Impact of Climate Change in part of Brahmaputra River Basin,
  - ii. Impact of Climate Change on Dynamic Groundwater System in a Drought Prone Area,
  - iii. Impact of Climate Change on Glaciers and Glacial Lakes: Case Study on GLOF in Tista basin, and
  - iv. Integrated approach for snowmelt runoff studies and effect of anthropogenic activities in Beas basin.
3. The salient points of the project entitled "Enhancement of natural treatment systems and treatment methods for safe and sustainable water supply in India", being considered for funding by the "European Research Commission" under the Framework of FP7-ENV-2011, were presented. Also, it was informed that for establishment of an "Indo-German Competence Centre for River Bank Filtration (IGCCRBF), at NIH to cater services to R & D activities related to River Bank Filtration in India, a Memorandum of Understanding (MoU) was signed with Prof. Dr.-Ing. Thomas Wintgens on 31<sup>st</sup>, May, 2011.
4. The Member-Secretary informed that the Institute is publishing a technical magazine 'Jal Chetna' in Hindi. The first issue of this magazine will be brought out in the month of June 2011.

**ITEM NO. 64.10: Any Other Item with Permission of the Chair**

The meeting ended with a vote of thanks to the Chair.

**APPENDIX– I: LIST OF PARTICIPANTS**

**APPENDIX– II: PROPOSED WORK PROGRAMME FOR THE YEAR 2011-2012**

**APPENDIX-I****LIST OF PARTICIPANTS OF THE 64<sup>th</sup> TAC MEETING OF NIH**

1.	Sri A K Bajaj Chairman, CWC Sewa Bhawan, R K Puram New Delhi	Chairman
2.	Chief Engineer (HSO), CWC Sewa Bhawan, R K Puram New Delhi	Member
3.	Sri R D Singh Director National Institute of Hydrology Roorkee-247667	Member
4.	Mrs Anita Gupta, RD Representing Chairman, Central Ground Water Board, Jam Nagar House New Delhi	Member
5.	Sri N Y Apte DDGM (Hydromet), India Meteorological Department Mausam Bhawan, Lodhi Road, New Delhi-110001	Member
6.	Dr M Perumal Professor, Deptt. Of Hydrology IIT, Roorkee	Member
7.	Prof K C Patra Department of Civil Engineering, NIT Rourkela-769008, Orissa	Member
8.	Dr R C Trivedi Jt. Dir (Retd.), CPCB, New Delhi	Member
9.	Er Ravindra Kumar Representing Chief Engineer Level-1, Irrigation & Water Expert, State Water Resources Agency, U.P. WALMI Bhawan, Utrethia, Lucknow-226026	Member
10.	Dr V C Goyal Scientist F, NIH, Roorkee	Member-Secretary

**INVITEES**

1. Dr Bhisim Kumar, Sc. F & Head, HID, NIH
2. Dr N C Ghosh, Sc. F & Head, GWHD, NIH
3. Dr V K Choubey, Sc. F & Head, EHD, NIH
4. Dr Rakesh Kumar, Sc. F & Head, SWHD, NIH
5. Sh C P Kumar, Sc. F, GWHD, NIH
6. Sh N N Rai, Director, Hyd. DSR, CWC, NEW DELHI
7. Dr M K Goel, Sc. E2, WRSD, NIH
8. Dr A K Lohani, Sc. E1, SWHD, NIH
9. Dr M K Sharma, Sc. C, EHD, NIH

**APPENDIX-II****WORK PROGRAMME OF THE INSTITUTE FOR THE YEAR 2011-2012****ENVIRONMENTAL HYDROLOGY DIVISION  
2011-2012**

<b>S.N.</b>	<b>Title of the Project/Study</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding</b>
1	Impact of sewage effluent on drinking water sources of Shimla city and suggesting ameliorative measures	Dr. V.K. Choubey (PI) Dr. R.P. Pandey Shri Omkar Singh Shri D.G. Durbude Dr. M.K. Sharma Dr. Rajesh Singh	3 years	HP-II
2	Environmental Flow Requirement of a River: A case study of Hemavathi River	Mr. Dilip G. Durbude(PI) Dr. V.K. Choubey Mr. Omkar Singh Dr. M.K. Sharma	3 years	NIH
3	Spatial Variability of Ground Water Quality in Kandi, Sirowal and Shiwalik Belts of Jammu Region, J&K (India)	Sh. Omkar Singh (PI) Dr. V K Choubey Sh. D.G. Durbude Dr. M K Sharma	1 Year (Extn. upto 30.9.11)	NIH
<b>NEW PROPOSAL</b>				
4.	Development of low cost media for fluoride removal from drinking water of fluoride affected areas.	Dr. Rajesh Singh (PI) Dr. V. K. Choubey ShriOmkar Singh Dr. M.K. Sharma	2 Year (w.e.f. 1.4.2011)	NIH

**GROUNDWATER HYDROLOGY DIVISION  
2011-2012**

<b>S.N.</b>	<b>Title</b>	<b>Study Team</b>	<b>Durati on</b>	<b>Funding</b>
1. NIH/GWD/NIH/09-12	Impact of Climate Change on Dynamic Groundwater System in a Drought Prone Area	Surjeet Singh (PI) C.P. Kumar Anupma Sharma Rajan Vatsa	3 years (4/09-3/12)	NIH
2. NIH/GWD/NIH/10-12	Quantification of Impact of Rainwater Harvesting on Ground water Availability in Aravalli Hills – Part II: Mathematical Modelling	Anupama Sharma (PI) C.P. Kumar N.C. Ghosh Sudhir Kumar Rajan Vatsa Shobha Ram Sanjay Mittal	2 Years (4/10-3/12)	NIH
3. NIH/GWD/HP-II/10-12	Coastal Groundwater Dynamics and Management in the Saurashtra Region , Gujarat	N.C. Ghosh (Co-ordinator) Anupma Sharma (PI) C.P. Kumar A.D. Gohil C.K. Jain Sudhir Kumar D.S. Rathore Surjeet Singh Rajan Vatsa	2 yr 8m (26/10-31/12)	HP-II
<b>NEW PROPOSAL</b>				
4. NIH/GWD/NIH/11-14/1	Ground water Flouride Contamination in Different Parts of India and Study Severity of Fluorosis in a Drought Prone Area	A.K. Dwivedi (PI) Shobha Ram N.C. Ghosh Anupma Sharma Sumant Kumar Sanjay Mittal Ramchandra	3 years (2011-2014)	NIH
5. NIH/GWD/NIH/11-14/2	Management of Aquifer Recharge (MAR) and Aquifer Storage Recovery (SAR)	Sumant Kumar (PI) Rajan Vatsa N.C. Ghosh C.P. Kumar	3 years (4/11-3/14)	NIH

**HYDROLOGICAL INVESTIGATIONS DIVISION  
2011-2012**

**A. INTERNALLY FUNDED STUDIES**

Reference Code	Project	Study Team	Duration/ Status	Funding
NIH/HID/INT/09-12	SW and GW Interaction at Selected Locations Along River Yamuna in NCT, Delhi: Phase-II	Sudhir Kumar (PI) M. S. Rao P. K. Garg	3 years (4/09-3/12) <b>Continuing study</b>	NIH
NIH/HID/INT/10-13	Study of Variability of Snow and Glacier Contribution in Melt Water of Gangotri Glacier at Goumukh using Isotopic Techniques	S.P. Rai (PI) Manohar Arora, Bhishm Kumar, Rakesh Kumar and Naresh Kumar	3 years (4/10-3/13) <b>Continuing study</b>	NIH
NIH/HID/INT/10-12	Identification of Recharge Zones of Some Selected Springs of Uttarakhand Using Isotopes	S. D. Khobragade (PI) Bhishm Kumar Sudheer Kumar S. P. Rai Pankaj Garg	2 years (04/10-03/12) Continuing study	<b>NIH</b>
NIH/HID/INT/11-13	Hydro-geological assessment of Ghar area for artificial recharge and water management planning	Pankaj Garg (PI) Dr. Sudhir Kumar Tanveer Ahmad Rajesh Agarwal Dr. V.C. Goyal Dr. Bhishm Kumar	2 years (04/11-03/13) New study	<b>NIH</b>
NIH/HID/INT/11-13	Assessment of Radon Contamination in Waters and Identification of Paleo-groundwater in Punjab State	Sh. S. K. Verma Dr. Sudhir Kumar Dr. M. S. Rao Dr. Bhishm Kumar	2 years (04/11-03/13) New study	<b>NIH</b>

**B. SPONSORED STUDIES/CONSULTANCY STUDIES**

NIH/HID/DST/07-12	National programme on isotope fingerprinting of waters of India (IWIN)	M.S. Rao (PI) B. Kumar, Sudhir Kumar S.P. Rai S.K. Verma Pankaj Garg	5 years (07/07-06/12) <b>Continuing study</b>	DST
NIH/HID/FRI/08-13	Impact Assessment of Landuse on the Hydrologic Regime in the selected Micro-watersheds in Lesser Himalayas, Uttarakhand	S.P. Rai (PI) Bhishm Kumar J.V. Tyagi	5 years (04/08-03/13) <b>Continuing study</b>	FRI



NIH/HID/DJ B/10-11	Assessment of Groundwater Resources & Development Potential of Yamuna Flood Plain, NCT, Delhi	Sudhir Kumar (PI) Vijay Kumar AK Keshari, IIT Delhi S. Shekhar, Delhi Univ. YB Kaushik, CGWB PS Datta, ICAR Executive Engineer, CWC AK Gupta, Delhi Jal Board	1 year (02/10- 01/11) To be extended upto12/11 <b>Continuing study</b>	Delhi Jal Board
NIH/HID/G BPIHED/10 -13	Development of Spring Sanctuaries in an Urban and Rural Watershed in District Pauri Garhwal, Uttarakhand	Dr. S.P. Rai (PI) Bhishm Kumar Sudhir Kumar Suhas Khobragade Pankaj Garg	3 years (04/10- 03/13) <b>Continuing study</b>	NIH
<u>NIH/HID/R</u> <u>SMML/2010</u> <u>-11</u>	Hydrogeological Studies Of Jhamarkotra Mines, Udaipur, Rajasthan	Dr. Sudhir Kumar, (PI) Sh. SK Verma, Sh. Pankaj Garg,	1 year (07/10- 06/11) <b>Continuing study</b>	RSMLL, Udaipur

### C. PURPOSE DRIVEN STUDIES UNDER HP-II

NIH/HID/HP -II/09-12	Groundwater Dynamics of Bist-Doab Area, Punjab Using Isotopes	M.S. Rao (PI) Bhishm Kumar Sudhir Kumar S.K. Verma PankajGarg+CGWB Officials	3 years (07/09-6/12) <b>Continuing study</b>	HP-II
NIH/HID/HP -II/09-12	Groundwater Management in Over- Exploited Blocks of Chitradurga and Tumkur Districts of Karnataka	Sudhir Kumar (PI) J.V. Tyagi Vijay Kumar B.K. Purandara S.P. Rai M.S. Rao	3 years (07/09-6/12) <b>Continuing study</b>	HP-II

**SURFACE WATER HYDROLOGY DIVISION  
2011-2012**

<b>S. No. &amp; Ref. Code</b>	<b>Title</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding Source</b>
1. NIH/SWD/NIH/ 09-11	Data book - hydro-meteorological observatory 2001-2008	Digambar Singh A. R. S. kumar Manohar Arora	2 years	NIH
2. NIH/SWD/NIH/ 08-12	Study on integrated water resources management of sub-basin to cope with droughts	R.P. Pandey Ravi V. Galkate Surjeet Singh L.N. Thakaral	4 years	NIH
3. NIH/SWD/NIH/ 09-12	Snow Melt Runoff Modelling in Sultej Basin	A.R. S. Kumar Manohar Arora A. Agarwal D.S.Rathore Digambar Singh	3 years	NIH
4. NIH/SWD/NIH/ 10-13	Snowmelt Runoff Modeling and Study of the Impact of Climate Change in part of Brahmaputra River Basin	Archana Sarkar R.D. Singh Rakesh Kumar Sanjay K. Jain	3 years	NIH
5. NIH/SWD/NIH/ 08-	Monitoring and modelling of streamflow for the Gangotri Glacier	Manohar Arora Rakesh Kumar	To be continued	NIH
6. NIH/SWD/NIH/ 10-13	Climatic Scenarios Generation for Satluj Basin using Statistical Downscaling Techniques	Manohar Arora Rakesh Kumar	3 years	NIH
7. NIH/SWD/NIH/ 10-13	Climatic variability analysis and its impact on Himalayan watershed in Uttarakhand	A. Agarwal, Manohar Arora R K Nema	3 years	NIH
<b>NEW STUDIES</b>				
8. NIH/SWD/NIH/ 11-13	Impact of Climate Change on Glaciers and Glacial Lakes: Case Study on GLOF in Tista basin	A.K. Lohani Sanjay K. Jain Rakesh Kumar	2 years	NIH
9. NIH/SWD/NIH/ 11-14	Hydrological Studies for Upper Narmada Basin.	Jagdish P. Patra Rakesh Kumar Pankaj Mani T R Sapra	3 years	NIH

**WATER RESOURCES SYSTEM DIVISION  
2011-2012**

<b>S.N.</b>	<b>Title</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding</b>
1.	Integrated approach for snowmelt runoff studies and effect of anthropogenic activities in Beas basin	Sanjay K. Jain Bhishm Kumar Vijay Kumar S.P. Rai Renoj Theyyan	3 Years (4/09 – 3/12)	HP-II
2.	Assessment of Effects of Sedimentation on the capacity / Life of Bhakra Reservoir (Gobind Sagar) on River Satluj and Pong Reservoir on River Beas	Sanjay K. Jain S.K. Jain Vijay Kumar J.V. Tyagi Rama Mehta	3 Years (4/09- 3/12)	HP-II
3.	Hydrological Assessment of Ungauged Catchments (Small Catchment)	P.K.Bhunya (PI) Rakesh Kumar Vijay Kumar D.S. Rathod Sanjay Kumar P.C. Nayak Y.R.S. Rao	2 Years (5/09- 5/12)	HP-II
4.	Application of a distributed hydrological model for river basin planning and management	M.K. Goel Vijay Kumar D.S. Rathore D. Chalisgaonkar Rama Mehta	2 yr 6 month (10/09- 3/12)	NIH
5.	Analysis of water management scenarios in Tapi River basin using MIKE Basin	Rama Mehta (PI) M.K. Goel Vijay Kumar/ D.S. Rathore	3 years (4/10- 3/13)	NIH
<b>NEW PROPOSAL</b>				
6.	Vetting of Water Availability studies of the Gulf of Khambhat Development Projects (Kalpasar Project)	M.K. Goel Vijay Kumar	6 Months (4/11- 10/11)	consulta ncy
7.	Web based Information System for Major and important Lakes in India	D. Chalisgaonkar Suhas Khobragade	1 year (4/11- 3/12)	NIH
8.	Development of analytical equation for alternate depths for flow in rectangular channels	S.K. Singh	1 year (4/11- 3/12)	
9.	A transfer function model for event based runoff	S.K. Singh	1 year (4/11- 3/12)	

**RESEARCH COORDINATION & MANAGEMENT UNIT (RCMU)  
2011-12**

<b>SN</b>	<b>Title</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding</b>
1	Recession Flow Analysis for Evaluation of Spring Flow in Indian Catchments	Ravindra V. Kale (PI) V. C. Goyal	2 years (4/11- 3/13)	NIH

**REGIONAL CENTRE, BELGAUM  
PROPOSED WORK PROGRAM  
2011-12**

<b>No</b>	<b>Title of the Study</b>	<b>Duration</b>	<b>Funding</b>
1	An Investigation of Changes in Rainfall and River Flow Structure due to Climate Change in a selected Basin of the Western Ghats Region	2010-2013	Internal
2	Water Quality Assessment using Remote Sensing techniques – A Case Study	2011-2014	Internal
3	Impact of climate change on groundwater resources in a water limited environment – A Case Study	2011-2014	Internal

**REGIONAL CENTRE, JAMMU  
PROPOSED WORK PROGRAM  
2011-12**

<b>No</b>	<b>Title of the Study</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding</b>
1. NIH/WHRC /08-10/3	Trend analysis of hydrological variables in western Himalayan region - Phase I (J & K)	M. K. Goel R. J. Thayyen Vijay Kumar Sharad K. Jain	4/08-3/12 (4 years)	NIH
2. NIH/WHRC /09-13/2	Cryospheric system studies and runoff modeling of Ganglass catchment, Leh, Ladakh Range	R. J. Thayyen M. K. Goel S.P Rai Bhishm Kumar	6/09- 5/13 (5 years)	NIH
3. SR/DGH/P K-1/2009	Glaciological studies of Phuche Glacier, Ladakh Range, India	R. J. Thayyen M. K. Goel S.P Rai Bhishm Kumar	1/10 - 12/12 (3 years)	DST
4. NIH/WHRC /11-14/1	Hydrological assessment of environmental flows for the Chenab river at Dul-Hasti	Pradeep Kumar Manish K. Nema	8/11- 7/14 (3 years)	NIH
5. NIH/WHRC /11-14/2	Climate change effects on hydrology of the Chenab basin in Western Himalaya	Manish K. Nema Pradeep Kumar Renoj J. Thayyen	8/11- 7/14 (3 years)	NIH

**REGIONAL CENTRE, SAGAR  
PROPOSED WORK PROGRAM  
2011-12**

<b>Study No.</b>	<b>Title of the study</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding</b>
1. NIH/GPSR C/NIH/09 -13/1	Water resources management study for drought affected Bundelkhand region.	Sh. T. Thomas Sh. R.V. Galkate Sh. R.K.Jaiswal Dr. N.C. Ghosh	Aug 2009 to July 2013 4 years	NIH
<b>2.</b>	Water availability study and supply-demand analysis in Kharun sub-basin of Seonath basin in Chhattisgarh state	Sh. R.V. Galkate Sh. T. Thomas Sh. R.K. Jaiswal Dr. S. Singh	Sept 2009 to June 2012 2 ¾ years	HP
<b>3.</b>	Study of reservoir sedimentation, impact assessment and development of catchment treatment plan for Kodar reservoir in Chhattisgarh state	Sh. R.K. Jaiswal Sh. R.V. Galkate Sh. T. Thomas Dr. S. Singh	Sept 2009 to June 2012 2 ¾ years	HP

**REGIONAL CENTRE, KAKINADA  
APPROVED WORK PROGRAMME  
2011-2012**

<b>S. N.</b>	<b>Project</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding</b>
<b>1</b>	Storm water management in Otteri nullah sub basin, Chennai Corporation, Chennai, Tamilnadu	Dr.Y.R. Satyajji Rao (PI) B. Chakraborty (Co-PI) Dr Bhishm Kumar (Co-PI) S.V. Vijaya Kumar (Co-PI) <b>Members</b> V.S. Jeyakanthan B. Venkata Ramana B.Krishna Dr. P.C.Nayak B.Venkatesh	April, 2008 – March 2012 (Under Progress)	Under HP II (PDS)
<b>2</b>	Impact Assessment of Climate Change on hydrological regime in Sabari sub-basin, Godavari river system	V.S. Jeyakanthan (PI) Dr. S.K. Jain Dr. P.C. Nayak B. Krishna	July, 2009 – Sep, 2011 (Extended from March 2011)	Internal
<b>3</b>	Groundwater Modelling of Puri City, Orissa	Dr.P.C. Nayak (PI) S.V. Vijaya Kumar Dr. Bhishm Kumar	July 2009 – Sep, 2011 (Extended from March 2011)	Internal
<b>4</b>	Groundwater Modelling Study in the Pushkar Canal Command Area in Andhra Pradesh.	S.V. Vijaya Kumar (PI) Dr.Y.R. Satyajji Rao V.S. Jeyakanthan Dr. P.C.Nayak B.Krishna	April 2011 – March 2013	Internal

<b>S. N.</b>	<b>Project</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding</b>
		Dr Bhishm Kumar		
<b>5</b>	Modelling surface water flow in Flood plains and River Mouths of the Godavari Delta	Dr. P.C. Nayak (PI) S.V. Vijaya Kumar V.S. Jeyakanthan B.Krishna	April 2011- March 2013	Internal

**CFMS-GUWAHATI  
APPROVED WORK PROGRAM  
2011-12**

<b>S. No.</b>	<b>Title</b>	<b>Study Team</b>	<b>Duration</b>	<b>Remarks</b>
1.	Impact of Climate Change on Meteorological parameters in North East India	<u>CFMSG,NIH</u> B. C. Patwary C. K. Jain <u>NIH,Roorkee</u> M Arora <u>IMD:</u> H.G. Pathak, Sunit Das (IMD,Guwahati)	2 Yrs (7/10-3/12)	Continuing [Original title "Impact of Climate Change and Global Warming on North East India" is changed by RCC].
2.	Hydrological Investigations of Dhansiri River Basin: Flood and Erosion Studies	S R Kumar D S Rathore	2 yrs (7/10-3/12)	Continuing
3.	Assessment of Water Quality in Meghalaya	C. K. Jain	1 Year (5/11-3/12)	New Study
4.	on Soil Erosion and Sedimentation in Brahmaputra River Basin in North-East India	Melony Zoremsangi	1 year (4/11-3/12)	New Study
5.	Status Report on Flood Inundation and Flood Hazard Mapping with Special Reference to Brahmaputra River in North -East India	S. K. Sharma	1 years (4/11-3/12)	New Study [Original title "Flood Inundation and Flood Hazard Mapping with Special Reference to Brahmaputra River in North -East India" is changed by RCC].
<b>Technology Transfer:</b>				
1. Two day Training Workshop on "Flood Management". Feb., 2012.				

**CFMS-PATNA**  
**PROPOSED WORK PROGRAM**  
**2011-12**

<b>Sl.</b>	<b>Title of the Project/Study</b>	<b>Study Team</b>	<b>Duration</b>	<b>Funding</b>
1.	Storm water management in Coom sub basin Chennai Corporation, Chennai, Tamil Nadu	RC Kakinada B Chakravorty R. Venkata Raman N. G. Pandey P. Mani	3 year (started in 2010- 2011)	Under HP-II
2.	Flood inundation mapping and risk assessment in a reach of river Ganga using MIKE FLOOD	B Chakravorty R. Venkata Raman N. G. Pandey	3 year (started in 2010- 2011)	NIH
3.	Study of the comprehensive Master Plan of GFCC Patna	B Chakravorty R. Venkata Raman N. G. Pandey	1 year	NIH
4.	Analysis of the temporal variability of climatological parameters in Patna	B Chakravorty R. Venkata Raman N. G. Pandey	2 year	NIH

**NATIONAL INSTITUTE OF HYDROLOGY, ROORKEE**

**No.:NIH/RCMU/64TAC/11**

**Dated: 21-06-2011**

**Subject: Draft Minutes of the 64<sup>th</sup> Meeting of Technical Advisory Committee of NIH, held on June 1, 2011 at Delhi.**

The draft minutes of the 64<sup>th</sup> meeting of the Technical Advisory Committee (TAC) of National Institute of Hydrology, Roorkee, which was held on June 1, 2011 at Central Water Commission, New Delhi, are enclosed herewith for approval of the Chairman, TAC.

Encl.: As above.

**(V C Goyal)**  
Member-Secretary, TAC

**DIRECTOR, NIH**

**CHAIRMAN, CWC & CHAIRMAN, TAC OF NIH**