

**MINUTES OF 66<sup>th</sup> MEETING OF  
TECHNICAL ADVISORY COMMITTEE OF  
NATIONAL INSTITUTE OF HYDROLOGY  
HELD ON JULY 29, 2013 AT NEW DELHI**

The 66<sup>th</sup> meeting of the Technical Advisory Committee (TAC) of the National Institute of Hydrology, Roorkee was held in the Central Water Commission, New Delhi on July 29, 2013. The meeting was chaired by Er Rajesh Kumar, Chairman, CWC. The list of the participants is given in Appendix -I.

Chairman in his opening remarks welcomed the members and the invitees. He appreciated the work being carried out by NIH, especially under the HP-II, and urged that the Institute should gear up to handle new challenges, such as impact of climate change on water resources, water quality issues. 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.

**ITEM NO. 66.2: Confirmation of the Minutes of 65<sup>th</sup> Meeting of TAC**

The Member-Secretary informed that the minutes of the 65<sup>th</sup> meeting of the TAC, held on May 14, 2012 at New Delhi, was circulated vide letter no. NIH/RCMU/65TAC/12 dated July 10, 2012. Since no comments were received from the members, the Minutes were confirmed by the TAC.

**ITEM NO. 66.3: Action Taken on the Decisions/Recommendations in the Previous Meeting**

The Member-Secretary informed that there were no specific suggestions/comments from the TAC members during the previous meeting and, therefore, no action taken under this item.

**ITEM NO. 66.4: Status of the Work Programme for the Year 2012-2013**

The Member-Secretary briefed about the studies carried out by the Institute during the year 2012-2013. He informed that 141 research papers have been published by the Institute and 21 research papers have been accepted for publication during the period. He further informed that 25 training courses/workshops/symposia were organized during April 2012- March 2013. Members appreciated the number of publications brought out by the Institute and number of training/workshop/symposium organized by Institute.

The following studies completed during 2012-2013 were presented during the meeting:

1. Hydrological studies and multi-reservoir simulation studies for DPR of Ken-Betwa link (Phase-II) (Dr. Sharad K Jain),
2. Snowmelt runoff modeling and study of the impact of climate change in part of Brahmaputra river basin (Mrs Archana Sarkar)
3. Study of variability of snow and glacier contribution in melt water of Gangotri glacier at Gomukh using isotopic techniques (Dr S P Rai), and
4. Quantification of impact of rainwater harvesting on groundwater availability in Aravalli hills (Dr Anupama Sharma)

#### **ITEM NO. 66.5: Report the Proceedings of the Working Group Meetings**

The Member-Secretary briefed about the 37<sup>th</sup> and 38<sup>th</sup> meetings of the Working Group of NIH, which were held at NIH, Roorkee, during October 29-30, 2012 and April 3-4, 2013, respectively. During these meetings, the Working Group members reviewed the progress of studies for the year 2012-2013 and also discussed the proposed work programme for the year 2013-2014. He presented the major recommendations of the working group.

TAC noted the proceedings of the Working Group meetings.

#### **ITEM NO. 66.6: Work Programme for the Year 2013-2014**

The Member-Secretary briefed about the proposed work programme of the Institute for the year 2013-2014, which was discussed during the 38<sup>th</sup> Working Group meeting of NIH.

The list of studies approved by the TAC for the year 2013-2014 is given in Appendix-II.

#### **ITEM NO. 66.7: Proposal for the change of name of Ganga Plains (S) Regional Centre, Bhopal**

The issue of change of name of the Regional Centre, Bhopal, was discussed, and the TAC recommended the change of name to "**Central India Hydrology Regional Centre**".

#### **ITEM NO. 66.8: Reporting Items**

1. Details of the consultancy projects carried out by NIH during the year 2012-2013 were noted by the TAC.
2. Details of the international R&D projects submitted/ awarded during the year 2012-2013 were noted by the TAC.

### **ITEM NO. 66.9: Any Other Item with Permission of the Chair**

Giving an overview of the training activities of NIH, Dr V C Goyal mentioned that NIH proposes to initiate short-term certificate courses on selected topics. Dr Sharad Jain elaborated by informing that in the recent deliberations of the Expert Committee (chaired by Prof P P Majumdar of IISc, Bangalore), it was felt that NIH may conduct some academic courses (e.g. PG Diploma and/or Certificate courses) to attract students and young researchers. These students/researchers will not only provide technical support during their coursework but also will be potential manpower pool for recruitment of scientists/scientific staff whenever opportunity arises. Dr Gurunadha Rao (who is also a member of the above referred Expert Committee) supported that idea and suggested that collaboration with reputed national and international institutions/ universities may be explored. Sri R P Mathur opined that such courses should be carefully designed for specified target users (e.g. working professionals/ researchers/ students).

The TAC concurred and recommended in-principle the idea of initiating few self-supporting short-term certificate courses on emerging and innovative topics in hydrology and water resources.

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

**Appendix– I: List of Participants**

**Appendix– II: Proposed Work Programme for the Year 2013-2014**

**LIST OF PARTICIPANTS OF THE 66<sup>th</sup> TAC MEETING OF NIH**

1.	Eri Rajesh Kumar Chairman, CWC New Delhi	In Chair
2.	Sri G L Bansal Director, Hyd.(N) CWC, New Delhi	Representing Member (D&R), CWC
3.	Sri M Raghuram Director, Hyd(DSF) CWC, New Delhi	Representing Chief Engineer (HSO), CWC
4.	Sri R P Mathur CGWB, New Delhi	Representing Chairman CGWB
5.	Smt. Surinder Kaur DDGM(H), IMD, New Delhi	Member
6.	Dr V V S Gurunadha Rao Scientist G (Retd.), NGRI, Hyderabad	Member
7.	Dr V C Goyal Scientist F, NIH, Roorkee	Member-Secretary

**INVITEES**

1. Dr. Sharad K Jain, Sc. F & Head, WRSD, NIH
2. Dr. N C Ghosh, Sc.F & Head, GWHD, NIH
3. Dr. Rakesh Kumar, Sc. F & Head, SWHD, NIH
4. Sh. C P Kumar, Sc. F & Head, HID, NIH
5. Dr. S P Rai, Sc.D, NIH
6. Dr. Anupama Sharma, Sc. D, NIH
7. Smt. Archana Sarkar, Sc.C, NIH

**APPROVED WORK PROGRAMME FOR THE YEAR 2013-2014**

**ENVIRONMENTAL HYDROLOGY DIVISION  
2013-14**

<b>S.No</b>	<b>Title of the Study</b>	<b>Study Group</b>	<b>Date of Start and Completion</b>
<b>Ongoing Studies</b>			
1.	Assessment of Water Quality in Hindon River Basin	M. K. Sharma (PI) Omkar Singh Rakesh Goyal Dayanand	DOS: 11/2011 DOC: 10/2014
2.	Development of Low Cost Media for Fluoride Removal from Drinking Water of Fluoride Affected Areas	Rajesh Singh (PI) Dayanand	DOS: 04/2011 DOC: 03/2013 <b>Extended for 6 months up to Sep. 2013</b>
<b>New Studies</b>			
3.	Ground Water Quality Mapping and Surveillance for Safe Water Supply in District Hardwar and Dehradun, Uttarakhand	C. K. Jain (PI) P. K. Garg (IITR) Rama Mehta S. K. Sharma Yatveer Singh Babita Sharma	DOS: 04/13 DOC: 03/14

**GROUND WATER HYDROLOGY DIVISION  
2013-14**

<b>S. No. &amp; Reference Code</b>	<b>Project</b>	<b>Project Team</b>	<b>Duration &amp; Status</b>	<b>Funding Source</b>
1. NIH/GWD/NIH/ 13-14	Estimation of specific yield and storage coefficient of aquifers	Surjeet Singh (PI) N.C. Ghosh (Co-PI) Sumant Kumar	1 year (04/13 – 03/14)	NIH
2. NIH/GWD/NIH/ 13-14	State-of-the-Art Report on Modeling of Coastal Aquifers Vulnerable to Sea Water Ingress	Anupma Sharma (PI) C.P. Kumar (Co-PI) Rajan Vatsa	1 year (04/13 – 03/14)	NIH (Referred by MoWR)
<b>Sponsored &amp; HP-II Projects</b>				
3. NIH/GWD/HP-II/ 10-12	Coastal Groundwater Dynamics and Management in the Saurashtra Region, Gujarat.	N. C. Ghosh (Coordinator) Anupma Sharma (PI) C P Kumar SE(GWRDC, Gujarat) C.K. Jain Sudhir Kumar D.S. Rathore M.S. Rao Surjeet Singh Rajan Vatsa	3 years (10/09 – 12/13)	PDS (HP-II)
4. EU-sponsored Project no. 282911	Saph Pani - Enhancement of natural water systems and treatment methods for safe and sustainable water supply in India"	Project Coordinator & P.I. : N. C. Ghosh Other Team Members V. C. Goyal C. K. Jain Sudhir Kumar B. Chakravorty A. K. Lohani Anupma Sharma Surjeet Singh Sumant Kumar Shashi Poonam Indwar	36 months ( Oct., 2011- Sept.,2014)	European Union under 7 <sup>th</sup> - Framework Programme
5. NIH/GWD/NIH/ 11-14	Management of Aquifer Recharge (MAR) and Aquifer Storage Recovery (ASR)	Sumant Kumar (PI) Rajan Vatsa N.C. Ghosh C.P. Kumar Surjeet Singh Sanjay Mittal	3 years (04/11 – 03/14)	Saph Pani Project
6. EU-sponsored Project no. 282911	Flow and Contaminant Transport Modeling of Riverbank Filtration	Shashi P. Indwar (PI) N.C. Ghosh Anupma Sharma Rajan Vatsa Sanjay Mittal <b>Support:</b> Uttarakhand Jal Sansthan (UJS)	2 ½ years (04/12 – 09/14)	Saph Pani Project

<b>Consultancy Project</b>				
	Drainage Area Mapping and Hydrological Studies in and around Gurha (W) Block in Kolayat Tehsil of Bikaner District, Rajasthan	N.C. Ghosh (PI) Surjeet Singh Rajan Vatsa Sumant Kumar S.P. Rai Sanjay Mittal	09 months	RSMML, Rajasthan

Division proposed to organize two Brainstorming session/Training courses on following topics:

**(i) Brainstorming session, probable topic:**

Managed Aquifer Recharge for sustainable groundwater development & management / Bank Filtration for sustainable drinking water supply /Drinking water source sustainability.

**(ii) Training course, probable topic:**

Coastal groundwater modelling and management / Groundwater modelling and management / Managed aquifer recharge or Artificial Groundwater Recharge / Conjunctive use of surface water and groundwater.

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**HYDROLOGICAL INVESTIGATIONS DIVISION  
2013-14**

<b>S. No.</b>	<b>Title of Study/Project</b>	<b>Study Group</b>	<b>Date of Start and Date of Completion</b>
1.	Assessment of Sensitivity of Open Water Evaporation to Increase in Temperature for Different Climatic Regions of India	S. D. Khobragade (PI) C. P. Kumar Manohar Arora A. R. Senthil Kumar	DOS: 04/2012 DOC: 03/2014
2.	Water Quality, Hydrogeology and Isotopic Investigations in SW Punjab	M. S. Rao (PI) C. P. Kumar Gopal Krishan	DOS: 07/2012 DOC: 06/2014
3.	Water Availability Studies for Sukhna Lake, Chandigarh	S. D. Khobragade (PI) C. P. Kumar Sudhir Kumar A. R. Senthil Kumar P. K. Garg, V. K. Agarwal	DOS: 04/2013 DOC: 03/2015
4.	National Program on Isotope Fingerprinting of Waters of India (IWIN)	M. S. Rao (PI) Bhishm Kumar Sudhir Kumar S. P. Rai S. K. Verma P. K. Garg	DOS: 07/2007 DOC: 06/2013
5.	Groundwater Dynamics of Bist-Doab Area, Punjab using Isotopes	M. S. Rao (PI) Bhishm Kumar Sudhir Kumar S. K. Verma P. K. Garg CGWB Officials	DOS: 10/2008 DOC: 12/2013
6.	Groundwater Management in Over-Exploited Blocks of Chitradurga and Tumkur Districts of Karnataka	Sudhir Kumar (PI) J. V. Tyagi S. P. Rao Anupma Sharma B. K. Purandara C. Rangaraj	DOS: 10/2008 DOC: 03/2014
7.	Use of Environmental Isotopes to Assess Sustainability of Intensively Exploited Aquifer Systems in North Eastern Parts of Punjab, India	M. S. Rao (PI) C. P. Kumar S. P. Rai	DOS: 09/2012 DOC: 08/2013
8.	Structure and Dynamics of Groundwater Systems in Northwestern India under Past, Present and Future Climates	S. P. Rai (PI) M. S. Rao Surjeet Singh S. K. Verma C. P. Kumar Sudhir Kumar V. K. Agarwal Rajeev Gupta S. L. Srivastava Vishal Gupta	DOS: 06/2012, DOC: 05/2015



		Mohar Singh	
9.	Review of Groundwater Resources in the Indo-Gangetic Basin: A Case Study on Resilience of Groundwater in the Punjab to Withdrawal and Environmental Change	M. S. Rao (PI) C. P. Kumar Gopal Krishan	DOS: 02/2013 DOC: 05/2014
10.	Assessment of Baseflow and its Impact on Water Quality in the Part of Satluj River in India using Environmental Isotopes and Age Dating Techniques	S. P. Rai (PI) R. V. Kale M. S. Rao C. P. Kumar Sudhir Kumar V. K. Agarwal, Vishal Gupta, Mohar Singh	DOS: 10/2012 DOC: 09/2015
11.	Isotope Studies for the Identification of Different Aquifer Groups and their Dynamics in Upper Yamuna River Plains	Sudhir Kumar (PI) C. K. Jain S. P. Rai S. D. Khobragade P. K. Garg Two Officers from CGWB	DOS: 07/2013 DOC: 06/2015
12.	Integrated Hydrological Investigations of Sukhna Lake, Chandigarh for its Conservation and Management	S. D. Khobragade (PI) C. P. Kumar R. D. Singh Sudhir Kumar S. P. Rai, C. K. Jain V. K. Agarwal	DOS: 07/2011 DOC: 06/2013
13.	Pre-dredging and Post-dredging Bathymetric Survey of Ramgarh Tal Lake, Gorakhpur, UP	S. D. Khobragade (PI) C. P. Kumar R. D. Singh V. K. Agarwal	DOS: 11/2012 DOC: 04/2013 (Pre-dredging)
14.	Assessment of Impact of Coal Mining from Mahan Coal Block on Groundwater Recharge and Sedimentation in Rihand Reservoir and to Suggest Appropriate Measures to Mitigate the Identified Impacts	Sudhir Kumar (PI) Sanjay Kumar Jain Jai Vir Tyagi Surjeet Singh S. D. Khobragade R. K. Jaiswal P. K. Garg	DOS: 04/2013 DOC: 09/2013

**SURFACE WATER HYDROLOGY DIVISION  
2013-14**

S. No. & Ref. Code	Title	Study Team	Duration
<b>Internal Studies</b>			
1. NIH/SWD/NIH /10-13	Climatic variability analysis and its impact on Himalayan watershed in Uttarakhand	Avinash Agarwal Manohar Arora R K Nema	3 years (Nov. 10 – Oct. 13)
2. NIH/SWD/NIH /08-	Monitoring and modelling of streamflow for the Gangotri Glacier	Manohar Arora Rakesh Kumar	March 08 -To be continued
3. NIH/SWD/NIH /11-14	Hydrological Studies for Upper Narmada Basin.	Jagdish P. Patra Rakesh Kumar Pankaj Mani T R Sapra	3 years (April 11 – March 14)
4. NIH/SWD/NIH /12-15	Study of Hydro-Meteorological Droughts for Bundelkhand Region in India	R.P. Pandey	3 years (April 12- March 15)
5. NIH/SWD/NIH /12-15	Sedimentation Studies for Pong Reservoir, Himachal Pradesh	A. R. S. Kumar Manohar Arora Suhas Khobragade A. Agarwal Sanjay K. Jain	3 years (April 12 – March 15)
<b>Proposed New Internal Studies</b>			
6. NIH/SWD/NIH /13-14	Development of Real Time Flood Forecasting for downstream of Hirakud dam	A.K. Lohani	One year (April 13- March 14)
7. NIH/SWD/NIH /13-14	Status Report on Soil Erosion and Sediment Transport Modelling	J.V. Tyagi	One year (April 13- March 14)
8. NIH/SWD/NIH /13-15	Application of DSS(P) for Integrated Water Resources Development and Management	A.K. Lohani Surjeet Singh Rahul Jaiswal	2 year (April 13- March 15)
9. NIH/SWD/NIH /13-16	Quantitative assessment of uncertainties in river discharge estimation	Sanjay Kumar Sharad Jain	3 year (April 13- March 16)
10. NIH/SWD/NIH /13-16	Suspended Sediment Flux Modelling in the largest sub-basin of Brahmaputra	Archana Sarkar Rakesh Kumar	One year (April 13- March 14)

**WATER RESOURCES SYSTEM DIVISION  
2013-14**

S.N.	Title	Study Team	Duration	Funding
<b>Ongoing Internal Studies</b>				
1.	Trend and variability analysis of rainfall and temperature in Himalayan region	L.N.Thakural Sanjay Kumar Sanjay K. Jain Sharad K. Jain Tanvear Ahmed	3 years (10/11-09/14)	NIH
<b>Sponsored Studies</b>				
1.	Integrated approach for snowmelt runoff studies and effect of anthropogenic activities in Beas basin	Sanjay K. Jain S. P. Rai L. N. Thakural	3 years (4/09-12/13)	PDS (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 J. V. Tyagi Rama Mehta	3 years (4/09-6/13)	PDS (HP-II)
3.	Title: Preparation of Ganga River Basin Environment Management Plan (GRBEMP)	Sharad K Jain, PI N C Ghosh, Sanjay K Jain, M K Goel,	Till Dec. 2013	Funding by MOEF thru IIT Kanpur, Rs 12.0 Lakhs
<b>New Internal Studies</b>				
1.	NIH_Basin A WINDOWS based model for water resources assessment in a river basin	M.K. Goel S.K. Jain D. Chalisgaonkar P.K. Mishra	2 years (4/13-3/15)	NIH
2.	Impact of climate and landuse change on floods of various return periods	P.K. Bhunya Sanjay Kumar D.S. Rathore	2 years (4/13-3/15)	NIH
3.	Web GIS based snow cover information system for Indus Basin	D.S. Rathore D. Chalisgaonkar L.N. Thakural T. Ahmed	2 years (4/13-3/15)	NIH
4.	Assessment of Water Footprint of the National Capital Territory (NCT) of India	D. Chalisgaonkar Sharad K. Jain P.K. Mishra	2 years (4/13-3/15)	NIH
5.	Assessing climate change impact across KBK region of Odisha	P.K. Mishra Sharad K. Jain Sanjay K. Jain P K Bhunya	2 years (4/13-3/15)	NIH

**RESEARCH MANAGEMENT AND OUTREACH DIVISION  
(RMOD)  
2013-14**

S.N.	Title of Project/Study	Study Team	Start/Completion Dates
1.	Recession Flow Analysis for Evaluation of Spring Flow in Indian Catchments Team:	Ravindra V. Kale (PI) V. C. Goyal	DOS: Apr 2011 DOC: Mar 2013 Extended for 6 months (up to Sep 2013)
2.	Pilot Basin Studies (PBS) at six identified sites, jointly with the RCs and CFMSs ( <b>Joint study</b> )	<b>NIH HQs:</b> V C Goyal (Leader) Omkar Singh Ravindra V. Kale  <b>NIH RCs/CFMSs:</b> RC-Belgaum, RC-Jammu, RC-Kakinada, RC-Sagar, CFMS-Guwahati, CFMS-Patna	DOS: Apr 2012 DOC: Mar 2015
3.	Action Research for Water Conservation and Management in Selected Village (s) in Hardwar District (Uttarakhand)	Omkar Singh V.C. Goyal C.K. Jain	DOS: Apr 2013 DOC: March 2015

**REGIONAL CENTRE, BELGAUM  
2013-2014**

No.	Title of the Study	Study Group	Duration	Funding
1	Review of Existing Empirical Formulae used in Water Resources Planning and Design	CMT, MKJ, NV	2 years (August 2011 to July 2013) <b>Extended for 1 year</b>	Internal
2	Water Quality Assessment using Remote Sensing Approach – A Case Study	BKP, CMT, VKC	2 years (August 2011 to July 2013) <b>Extended for 1 year</b>	Internal
3	Impact of Climate Change on Groundwater Resources in a Water Limited Environment – A Case Study	BKP, BV, MA, NV	2 years (August 2011 to July 2013) <b>Extended for 1 year</b>	Internal
4	Effectiveness of Storage Tanks for Groundwater Recharging in North Karnataka Region	MKJ, BV, CPK, MSR, BA	2 years (August 2012 to July 2014)	Internal
5	Effect of Sand Mining on River and Groundwater Regime in Hard Rock Areas: A Case Study from Andhra Pradesh	MKJ, CMT, CPK, KV, BN, GPK	2 years (August 2012 to July 2014)	Internal
6	Waterlogging and Salinity Studies in Nagarjuna Sagar Right Bank Canal Command	NV, BKP	2 years (August 2012 to July 2014)	Internal
7	Integrated Water Resources Management (IWRM) on a Pilot Basin – Zuari River Basin, Goa	CMT, BKP, VCG	3 years (April 2013 to March 2016)	Internal (PBS)
8	Comparative Analysis of Various Rainfall-Runoff Models for Rivers of Western Ghats	BV, CK	3 years (April 2013 to March 2016)	Internal
9	Application of Isotopes for Estimation of Groundwater Recharge under Different Land Covers/ Land Uses in Sindhudurg District, Maharashtra	BKP, NV, SK, CPK	2 years (April 2013 to March 2015)	Internal

VCG : V. C. Goyal, Scientist F                      CPK : C. P. Kumar, Scientist F  
SK : Sudhir Kumar, Scientist F                      BV : B. Venkatesh, Scientist E  
CMT : Chandramohan T., Scientist D              BKP : B. K. Purandara, Scientist D  
MKJ : Mathew K. Jose, Scientist D                MSR : M. S. Rao, Scientist D  
MA : Manohar Arora, Scientist C                      NV : N. Varadarajan, SRA  
CK : ChandraKumar S., SRA                      BA : Basvaraj B. Alagawadi (JSYS)  
KV : K. Venugopal (APGWD)                      BN : B. Narendra (APGWD)  
GPK : G. Praveen Kumar (APGWD)

**REGIONAL CENTRE, JAMMU  
2013-2014**

<b>S. No.</b>	<b>Title of the Study</b>	<b>Study Team</b>	<b>Funding/ Status</b>
1	Impact of Land Use Changes on Environmental Flows of Tawi River at Jammu	P. Kumar M. K. Nema	NIH/ Ongoing
2	Climate Change Effects on Hydrology of the Tawi Basin in Western Himalaya	M. K. Nema P. Kumar R. J. Thayyen	NIH/ Ongoing
3	Integrated Hydrological Study of Tawi Basin (IWRM-Pilot Basin Study)	P. Kumar M. K. Nema R. J. Thayyen	NIH/ Ongoing

**REGIONAL CENTRE, BHOPAL  
2013-2014**

<b>Sl. No.</b>	<b>Name of the project</b>	<b>Duration</b>	<b>Starting and ending date</b>	<b>Study Group</b>
1.	Pilot Basin Studies: IWRM in Bina River Basin in Bundelkhand Region in Madhya Pradesh	5 Years	April 2012 to March 2017	T. R. Nayak T. Thomas Ravi Galkate R.K. Jaiswal
2.	Irrigation Planning and Management in the Harsi project Command of a Water Resource Project	2 Years	May 2013 to April 2015	R.K. Jaiswal T. Thomas Ravi Galkate T. R. Nayak
3.	Integrating hydrology, climate change and IWRM with livelihood issues: Development of methodology and a DSS for water-scarce Bundelkhand region in India	2½ Years	May 2013 to October 2015	V. C. Goyal T. Thomas R. V. Kale S. Goyal K. Vijaylakshmi
4.	Applications of Decision Support System (DSS) in Shipra river basin of MP	3 Years	June 2013 to May 2016	Ravi Galkate T. R. Nayak R.K. Jaiswal T. Thomas

**Training/Technology Transfer Activities of RC Bhopal:**

<b>Sl.No.</b>	<b>Topic</b>	<b>Beneficiary/Collaboration</b>	<b>Date &amp; Venue</b>
1	One Day workshop on the issues and recuperation of surface water bodies and shallow groundwater in Bina river basin	Water User <i>Samiti</i> , <i>Panchayats</i> , Field Officers, NGO	May '13: Bina/ Khurai/Rahatgarh
2	One day awareness programme on PDS; one each for Kharun river sub-basin and Kodar reservoir	WRD, C.G.	June '13: Raipur
3	Brainstorming session and	Central & State Govt.	Oct.'13: Bhopal

	Stakeholders meeting on Pilot Basin Studies	Officers, Experts, NGO	
4	Issues on management of surface and ground water to increase irrigation and domestic supplies	ADO, APO, Sarpanch, Gram Sachiv, Field Officers, NGO	Feb. '14: Bina
5	Water Resources Management in Bundelkhand Region with special emphasis to Drought	WRD, Agriculture Dept., PHED, NGO	Dec. '13: Jhansi/Chhatarpur
6	Workshop to discuss the findings of the study of Benisagar and Rangawan projects	WRD, Agriculture Dept.	Jan. '14: Chhatarpur
7	Training workshop on watershed management for domestic water use in Bundelkhand region (M.P.)	PHED, Nagar Palika, Watershed mission	Jan.'14: Chhatarpur
8	Hydrological data processing using SWDES and HYMOS	WRD, C.G.	Dec.'13: Raipur

**REGIONAL CENTRE, KAKINADA  
2013-2014**

S. No.	Project	Project Team	Duration	Funding/Remarks
1	Storm water management in Otteri nullah sub basin, Chennai Corporation, Chennai, Tamilnadu	Y.R. Satyaji Rao, Sc `F' (PI) B. Chakraborty, Sc'F' S.V. Vijaya Kumar , Sc 'F' V.S. Jeyakanthan, Sc 'D' R.V. Ramana, Sc'C' B.Krishna, Sc 'C' P.C.Nayak, Sc 'D' B.Venkatesh, Sc'E'	April, 2009 – Dec., 2013 (Under Progress)	Under HP II (PDS) (Referred by Govt., of Tamil Nadu)
2	IWRM studies in the Yerrakalva River Basin, Andhra Pradesh (PART-II).	Y.R. Satyaji Rao, Sc `F' (PI) S.V. Vijaya Kumar, Sc 'F' (A.P. State Ground Water Department and Irrigation Dept.)	April 2013 to March 2017 (Under Progress)	Internal (Basin Suggested by Govt., of A.P)
3	Modelling surface water flow in flood plains and River Mouths of the Godavari Delta	S.V. Vijaya Kumar, Sc'F' (PI) P.C. Nayak, Sc 'D' V.S. Jeyakanthan, Sc'D' B.Krishna, Sc 'C'	April 2012- March 2014 (Under Progress)	Internal
4	Statistical downscaling and assessment of climate change impact on hydrology of Mahanadi basin.	P.C. Nayak , Sc'D' (PI) Y. R. S. Rao, Sc 'F', B. Venkatesh, Sc 'E' T. Thomas, Sc 'C'	May 2012 to March, 2014	Internal
5	Evaluation of urban storm water network in Hyderabad using	R.V. Ramana, Sc'C' (PI) Y. R. S. Rao, Sc 'F',	May 2013 to	Internal (Referred

S. No.	Project	Project Team	Duration	Funding/Remarks
	SWMM.	SV Vijaykumar, Sc'F' V.S. Jeyakanthan, Sc 'D'	March 2016	by CE, Hydrology, Govt., of A.P)
6	Runoff estimation of Tammileru ungauged basin Andhra Pradesh	V.S. Jeyakanthan, Sc 'D' (PI) J.V.Tyagi, Sc'F' R.V.Ramana, Sc'C'	May 2013 to March 2015	Internal (Referred by CE, Hydrology, Govt., of A.P)
7	Analysis of high frequency ground water levels data in the coastal aquifers of A.P	B.Krishna, Sc 'C' (PI) Y. R. S. Rao, Sc 'F' R.V. Ramana, Sc'C'	May 2013 to March 2015	Internal (Referred by Director, GWD (AP))

#### TECHNOLOGY TRANSFER ACTIVITIES FOR THE YEAR 2013- 2014

S.No	Title of the Programme	Coordinator	Tentative Dates	Venue
<b>Awareness Programmes</b>				
1	Awareness Programme on IWRM-PBS with local user groups	Sh S V Vijayakumar, Sc 'F'	12 <sup>th</sup> July 2013 (Plan under PBS)	Jangareddygudem, W.G Dist, A.P
2	Awareness Programme on identified topic relevant at RC	Dr. Y R Satyaji Rao, Sc 'F'	19 <sup>th</sup> November 2013 (Plan)	Kakinada
3	Awareness Programme on World Water Day	Sh S V Vijayakumar, Sc 'F'	22 <sup>nd</sup> March 2014 (Plan)	Nellore
<b>Brainstorming Session</b>				
4	Brainstorming session on IWRM-PBS with local line departments and researchers	Dr. Y R Satyaji Rao, Sc 'F'	08 <sup>th</sup> October 2013 (Plan under PBS)	Bhimavaram, W.G. Dist, A.P
<b>Training Workshops</b>				
5	Training Course on Reservoir Sedimentation using Remote Sensing Techniques	Dr. V S Jeyakanthan, Sc 'D'	22-23 August 2013 (Plan)	Chennai
6	Training Course on Advanced Hydrological Modelling	Dr. PC Nayak, Sc 'D'	18-20, February 2014 (Plan)	Kakinada
7	User Interaction Workshop on 'Storm Water Management in coastal urban areas'	Dr. Y R Satyaji Rao, Sc 'F'	17-19, December 2013 (PDS under HP-II)	Chennai



**CFMS, GUWAHATI  
PROPOSED WORK PROGRAM FOR THE YEAR 2013-2014**

- i) Short Term Flood Forecasting Using Bootstrap based Artificial Neural Networks within Pilot Basin (PBS)
- ii) Application of Arc-SWAT Model for Prediction of Runoff Within Pilot Basin (PBS)

**CFMS, PATNA  
PROPOSED WORK PROGRAM FOR THE YEAR 2013-2014**

<b>Sr. No.</b>	<b>Title of the study</b>	<b>Study team</b>	<b>Duration</b>	<b>Funding</b>
1.	Development of flood forecasting system based on rainfall information obtained from satellite data	Pankaj Mani Rakesh Kumar	3 year (Started in 2012-13)	NIH
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 2010-11)	NIH
3	Rainfall runoff modeling of Bagmati basin	R. Venkata Raman B Chakravorty N. G. Pandey	2 year (Started in 2011-12)	NIH
4	Analysis of temporal variability of climatological parameters in Patna	N. G. Pandey R. Venkata Raman B Chakravorty	3 year (Started in 2011-12)	NIH
5	Storm water management in Otteri Nullah Watershed, Chennai Corporation, Chennai, Tamil Nadu	RC Kakinada B Chakravorty R. Venkata Raman N. G. Pandey P. Mani	3 year (Started in 2010-11)	Under HP-II
6	Pilot Basin Studies (PBS) for Mahi River Basin in Ghaghra-Gandak Composite Basin	CFMS, Patna	April 2012- March 2017 (XII Plan Year)	NIH

P.S: Additional study may be included during RCC.