

Report on  
TEQIP Sponsored Short Term Course on  
**“Sustainable Water Resources Management under Changing Climate”**  
IIT Indore, 28th May- 2nd June, 2018  
Course Coordinators: Dr. Manish Kumar Goyal and Prof. Sandeep Chaudhary

The objective of this short term course is to create awareness regarding the adverse consequences of climate change on water resources and to identify suitable measures for the sustainable development of available and foreseeable water resources. Moreover, the course disseminates this information and motivate researchers in these and allied fields in institutes spread across the country to get involved in this initiative. The day wise activities during the course are presented below.

**Day 1 (28<sup>th</sup> May 2018, Inauguration):** Course coordinator Dr. M.K. Goyal (Associate Professor, Discipline of Civil Engineering, IITI) and Course co-coordinator Prof. Sandeep Chaudhary (Associate Professor and HOD, Discipline of Civil Engineering, IITI) opened the program “Short term course on Sustainable Water Resources Management under Changing Climate” with the welcome address. Chief Guest Prof. Neelesh Kumar Jain (Dean Academic Affairs, IITI), Guest of Honour Mr. Y. C. Sharma (Chief Engineer, Narmada Tapi Basin, Madhya Pradesh) inaugurated the program by lightening the lamp. Inaugural address was given by Dr. M. K. Goyal followed by Chief Guest address and Guest of Honor Address.

**Day 1 (28<sup>th</sup> May 2018):** In the first lecture, Mr. Y. C. Sharma addressed the importance of water resources development and management in Madhya Pradesh and discussed about its need, scope for future initiatives, Dr. M. K. Goyal also discussed about the ecosystem resilience to the hydroclimatic disturbances by giving the example of different river basins in India. Prof. Ram Bilas Pachori (Discipline of Electrical Engineering, IITI) presented the application of non-stationarity in time series modelling.

**Day 2 (29<sup>th</sup> May 2018):** Dr. S. V. Sai Prasad (Head, IARI-Indore) discussed about new crop varieties and technologies to sustain the income and profit of farmers in the changing climate scenarios. New varieties of wheat and the productivity of the climate resilient crops were also reported. Dr. M. K. Goyal addressed the climate change impact and identification of adaptation strategies by involving key stakeholder organisations and farmers over Himalayan states in India and identified the challenges and opportunities. In addition, Dr. M. K. Goyal demonstrated the hydrological and hydrodynamic modelling using MIKE package over Teesta River Basin.

**Day 3 (30<sup>th</sup> May 2018):** Prof. Sandeep Chaudhary presented the climate change impact on the structures. Dr. Surya Prakash (HOD, Discipline of Computer Science and Engineering) discussed the use of machine learning techniques in regression and classification analysis. Mr. Tapesha Ajmera (Schlumberger) presented the application of Groundwater modeling in field works by giving the example of several project of Doha Metro line and Farup project.

**Day 4 (31<sup>st</sup> May 2018):** Dr. Neeraj Mishra (School of Humanities and Social Sciences, IITI Indore) discussed the depoliticization framework for water development projects in India. Mr. Tapeshe Ajmera presented the dewatering concepts, different methods of dewatering, challenges in dewatering work and some case studies of their project work of Doha metro project. Further, Dr. Neeraj Mishra and Dr. S. Dhinakaran (Associate Professor, Discipline of Mechanical Engineering, IITI) presented the understanding of water governance in changing climate and research methodology to address the engineering research problem respectively.

**Day 5 (1<sup>st</sup> June 2018):** Dr. Rajesh Saxena (MPCOST, Bhopal) discussed about the organic farming in the context of climate change mitigation and water resources conservation. During the discussion Dr. Rajesh Saxena pointed out several components of organic farming, which provides long-term benefits to people and the environment. Dr. S. Dhinakaran introduced the basics of porous media and its applicability. A field visit was organized to Omkareshwar Dam, which is 63 km distance from the institute. The Omkareshwar Dam is a gravity dam on the Narmada River just upstream of Mandhata in Khandwa district, Madhya Pradesh, India. It is named after the Omkareshwar temple located just downstream. The dam was constructed between 2003 and 2007 with the purpose of providing water for irrigation of 132,500 ha (327,000 acres). An associated hydroelectric power station located at the base of the dam has an installed capacity of 520 MW.

**Day 6 (2<sup>nd</sup> June 2018):** Dr. Nitin Joshi (Assistant Professor, Department of Civil Engineering, IIT Jammu) discussed groundwater issues, such as groundwater depletion and contamination. The contamination due to fluoride, arsenic, salinity, iron, manganese, uranium, and radon were discussed briefly. Moreover, Dr. Joshi talked about the ex-situ and in-situ remediation techniques to minimize the groundwater contamination. Mr. Uday Roman (WAPCOS Limited) presented a case study on the assessment of sedimentation in reservoir using remote sensing technique. The application of the remote sensing technique was carried out over Sri Ram Sagar reservoir, Andhra Pradesh.

**Day 6 (2<sup>nd</sup> June 2018, Valedictory):** The certificates were distributed among the participants on the successful completion of the short term course. At last with the vote of thanks by Dr. M.K. Goyal and with a group photo, program was closed.

**The list of the presentations by the delegates with affiliation**

Sl. No.	Name	Affiliation
1	Dr. Manish Kumar Goyal	IIT Indore
2	Prof. Sandeep Chaudhary	IIT Indore
3	Mr. Y. C. Sharma	Narmada Tapi Basin, Madhya Pradesh
4	Prof. Ram Bilas Pachori	IIT Indore
5	Dr. S. V. Sai Prasad	Head, IARI, Indore
6	Dr. Surya Prakash	IIT Indore
7	Mr. Tapes Ajjmera	Schlumberger
8	Dr. Neeraj Mishra	IIT Indore
9	Dr. S. Dhinakaran	IIT Indore
10	Dr. Rajesh Saxena	MPCOST, Bhopal
11	Dr. Nitin Joshi	IIT Jammu
12	Mr. Uday Roman	WAPCOS Limited

**The list of the participants with Institute**

Sl. No.	Name	Institute
1	Pratibha Sunil Agrawal	LIT, RTMNU
2	Himanshu Kumar	IIFM Bhopal
3	Amit Kumar Patel	NIT Raipur
4	Sandeep Soni	NIT Raipur
5	Lalitesh Sinha	IES IPS Academy
6	Harish Kumar Dwivedi	IES IPS Academy
7	Ankit Sinha	NIT Jamshedpur
8	Preetam Kumar Shukla	NIT Jamshedpur
9	Sanjay Sharma	NIT Jamshedpur
10	Prakhar Modi	NIT Jamshedpur
11	Girish R Jangle	RTMNU Nagpur
12	A K Priya	KRPIET
13	Namrata Chandel	AITR, Indore
14	Alka Sharma	AITR, Indore
15	Rahul V Thorat	SIT Nashik
16	Jadhav Anandrao Shivaji	SIT Nashik
17	D G Regulwar	GCE, Aurangabad
18	Ankur Vishwakarma	MANIT Bhopal
19	Mayank Rajput	MANIT Bhopal
20	Prashant Kumar Dubey	SGSITS Indore
21	Chandra Mohan Shakya	SGSITS Indore
22	Abhishek Kachhwah	SGSITS Indore
23	Kanak Gargav	SGSITS Indore
24	Purva Sane	SGSITS Indore
25	Alinda George	IIT Indore
26	Preeti S Zade	BVPCE Mumbai
27	Srinidhi Jha	IIT Indore

28	Jew Das	IIT Indore
29	Uttam P Goswami	IIT Guwahati

## **Short Term Course –Sustainable Water Resource Management Under Changing Climate , 28 May-2 June 2018**



**Coordinators: Dr. Manish Kumar Goyal and Dr. Sandeep Chaudhary**



Inauguration of the short term course by the Chief Guest, Guest of Honour and Coordinators



During the course work





During the field visit to Omkareshwar Dam with the participants



Group photo with the participants after the valedictory