SAGARIKA RATH
PhD candidate

ACADEMIC BACKGROUND

PhD Candidate, Agricultural and Biological Engineering Dept. **(2016-Continuing)**	**University of Florida, Gainesville, FL** **Advisor:** Dr. Wendy Graham, Dr. David Kaplan **Topic:** Agricultural Water Security Through Sustainable Use of the Floridan Aquifer: An Integrated Assessment of Economic and Environmental Impacts
M. Tech: Water Resource Engineering (2006 - 08)	**Indian Institute of Technology, Kharagpur** CGPA – 9.32 (10 Pt Grading) **Advisor:** Dr. Chandranath Chatterjee **Thesis** : Flood Forecasting In Upper Narmada River Basin By Using Softcomputting Techniques.
B. Tech: Agricultural Engineering And Technology (July '01- May '05)	**College of Agricultural Engineering and Technology, Orissa** CGPA – 7.9(10 Pt Grading) **Thesis** : Change In Water Requirement By Using Different Cropping Pattern.

PERSONAL DETAILS

Professional Skills	• Water resource Planning and Management. • Hydrologic modeling of catchments/basins by using MIKE 11 Rainfall Runoff Tool, SWAT, HEC-HMS • River Basin Management by using MIKE BASIN • Hydrodynamic modelling of river flows - 1D modeling in MIKE 11 HD • Integrated Water Resources management MIKE SHE
Experience	(July 2008 – December 2015)
Nationality	Indian
Languages Known	English. Hindi, Oriya

PROFESSIONAL EXPERIENCE

DHI (India)Water and Environment, Delhi (Jul 08 – till date)	Water Resource Engineer	Water resource planning by using MIKE BASIN software. Hydrological analysis for prefeasibility study.

National Institute Of Hydrology, Kakinada (Jan – Mar 2007)	Summer Internship, M Tech	Flood Forecasting By Softcomputting Techniques. http://www.profileofpcnayak.org/Rathetal2013IJRBM.pdf

COUNTRIES OF WORK EXPERIENCE

DHI, Denmark (Oct 2009 – Feb 2010)	Copenhagen, Denmark	Hydrodynamic and water quality modeling of Musi River stretch at Hyderabad by using MIKE 11 HD and Ecolab Module.
DSWRPP, SMEC (Non 2010 – Jan 2011)	Colombo, Sri Lanka	Impart training on water resource planning by using MIKE BASIN to Irrigation and Mahavelli Deptt of Sri Lanka.

EXPERIENCE RECORD

PROJECTS UNDERTAKEN		
A	**Name of Assignment**	Preparation of Master Plan for flood and sediment management in Koshi River Basin
	Duration	Aug 2014-Ongoing
	Location	DHI India- New Delhi, Water Resource Department Patna
	Client	Flood Management Improvement Support Centre , Government of Bihar
	Position Held	Hydrologist and Sediment Transport Study Modeler
	Activities Performed	• Catchment Hydrology study • Sediment Yield assessment • One dimensional and two dimensional river morphology study • One dimensional river modelling to predict channel behavior • Identification of vulnerable location of embankments • Two dimensional erosion modelling to identify erosion prone locations
B	**Name of Assignment**	Reservoir Sedimentation Study of Bajoli Holi Hydro Electric Project
	Duration	September 2014-March 2015
	Location	Himachal Pradesh
	Client	GMR Group
	Position Held	Hydraulic Modeler with sediment analyst
	Activities Performed	• Carrying out a detailed study of available sediment and discharge data • The development of the sediment profile during the life time of the Reservoir (i.e. Sediment filling time) with and without sediment flushing effect has to be determined • Assessment of the quantum of coarse particles (0.2mm and above)

		entering the power intake • Determination of the shape of the sediment cone in front of the power intake and under sluices • Impact of sluice spillway crest level on sediment profile in near field • Determination of the useful life of the Reservoir • Determination of loss of dead storage and live storage over the year
C	**Name of Assignment**	Hydraulic Model Study for the Proposed 6-Lane Elevated Road over Hindon Cut canal
	Duration	December 2013-February 2014
	Location	DHI, India
	Client	Office of the Executive Engineer, Head Works Division, Agra Canal
	Position Held	Hydrologist and Hydrodynamic Modeler
	Activities Performed	• Reconnaissance survey and canal hydraulic data collection from concerned • Cross sectional Survey of the canal and measuring dimensions of piers /abutments and levels of pier caps and bridge decks etc of all the existing structures crossing the canal • Assess the afflux in the Hindon cut canal after/during construction of proposed 6- Lane Elevated Road • Assess the effects of water levels and velocities over the Hindon cut canal after construction of proposed 6-Lane Elevated Road.
D	**Name of Assignment**	Study the Water Availability and Water Quality Parameters for Cooling Water System for 1320 MW Proposed Thermal Power Plant in Mahakalpada
	Duration	September 2013-ongoing
	Location	DHI, India
	Client	SPI Group, Chennai
	Position Held	Hydrologist and Hydrodynamic Modeler
	Activities Performed	• Site Investigation to identify possible source of water and preliminary intake points • Discharge measurement and cross-section measurement • Assessment of suitable intake location • Water availability assessment at the intake point of Gobari River
E	**Name of Assignment**	Water availability study for proposed thermal power plant in Mahanadi Basin
	Duration	January 2012- July 2012

	Location	DHI, India
	Client	L & T Infrastructure Finance Limited
	Position Held	Hydrological modeling
	Main Project feature	Water availability study for proposed Thermal Power Plant in Mahanadi Basin
	Activities Performed	• Estimation of water demand for proposed Thermal Power Plant • Water supply with alternatives available for Lower and Middle Mahanadi basin considering all its tributaries. • Identification of the constraints in supply of water to the identified power plants from Mahanadi & its tributaries • Water availability for different spatial and temporal distribution • Planning and Design of diversion and storages schemes • Transportation of water from the source (diversion point) to the plant
F	**Name of Assignment**	Hydrological Pre – feasibility study of Riotinto - Bunder Diamond Project.
	Duration	April 2011 – Ongoing
	Location	DHI, India
	Client	M.N. Dastur & Company (P) Ltd, Kolkata , Riotinto
	Position held	Hydrological modeler
	Main project features	The Project envisages creating a storage capacity to meet the water demand for the mining and other activities; and study the feasibility of river diversion to protect the mining lease area.
	Activities Performed	• Hydrological modeling: rainfall-runoff and sediment modeling of the catchment • Water availability study • Surplus and deficit analysis: water availability and water demand estimation including the environmental flow • River diversion study: flood estimation, design of small dam, flood routing, etc. • Storage analysis: Scope of surface water storages in the catchment, water budgeting, etc. • Drought investigation: study of water availability under severe meteorological drought condition • Primary data collection: river flow and water quality
G	**Name of Assignment**	Development of DSS for Integrated Water Resources Development and Management (Hydrology Project- Phase-II), NIH - Maharastra, Gujarat, Kerala, Orissa, Chhaitshgarh, Tamilnadu, Madhya Pradesh, Andhra Pradesh, Karnataka.
	Duration	October 2009-ongoing
	Location	India
	Client	National Institute of Hydrology
	Position held	water resource planner (decision support system)
	Main Project Features	Water resource planning and management by analysing different aspects of Hydrological study of Nine states along with the application of the

		Decision Support System in particular.
	Activities Performed	• Primary Data Collection : Hydrological data and Gauge Discharge data • Data base formation and Statistical analysis in ArcGIS platform and Temporal Analyst. • Catchment Water Balance study by Rainfall-Runoff Modeling • Seasonal planning of surface water and ground water by reliability analysis • Optimization of water allocation between different water users • Conjunctive use and Artificial Infiltration study for Mahanadi Basin and Upper Tel Basin respectively. • Inter basin transfer study from upper Mahanadi basin to Seonath basin in Chhattisgarh.
H	**Name of Assignment**	Integrated Water resources Management and Water Quality Modeling of River Yamuna Basin
	Duration	2009-2011
	Location	India
	Client	NRCD, MoEF
	Position held	Hydrologic Data Analyst, Hydrologist
	Activities Performed	• Data Analysis and Database management • Water requirement study by using MIKE Basin • Geomorphologic study of Yamuna Basin in Arc GIS • Impact of cropping pattern on water resources
I	**Name of Assignment**	Sediment Study of Bramhaputra River
	Duration	May-July 2010
	Location	India
	Client	CWC
	Position held	Water availability study & MIKE 11 HD modeler
	Activities Performed	• Hydrologic and Meteorological Data Analysis • MIKE 11 Hydrodynamic Model setup • Water Availability Study
J	**Name of Assignment**	Basic Study And DPR For Water Intake System 3x660 MW-Katni Thermal Power Project
	Duration	April 2011 – Ongoing
	Location	Katni, Madhya Pradesh, India
	Client	Welspun Energy Limited ,India
	Position held	Water balance study of catchment
	Activities Performed	• Thessien Polygon Plot in Arc GIS • Catchment delineation and catchment geomorphological characteristic analysis (using ArcGIS) • Statistical Analysis of rainfall data in Temporal Analyst software Planning layout for the location of intakes for the withdrawal of water from Bansagar Reservoir

K	**Name of Assignment**	Salem Lake restoration project
	Duration	2010-Ongoing
	Location	India
	Client	Govt Of Tamilnadu
	Position held	River basin Modeling
	Activities Performed	• Rainfall runoff modeling • Catchment delineation by MIKE basin
L	**Name of Assignment**	KVK Thermal Power Plant-Water Drawing from River Lilagarh-Hydrological and Hydraulic study
	Duration	2010
	Activities Performed	• site visit was done to identify the hydrological condition at site and the source of water • quantify the availability of water for a thermal power plant in Korba district of Chhattisgarh • The various data related to the study area such as rainfall, river flows, meteorological data, and groundwater level data. Toposheets of the study area etc. were collected from various sources
M	**Name of Assignment**	Laying of interceptor sewers along three drains for abatement of pollution in river Yamuna
	Year	2008 – 2009
	Location	India
	Client	Delhi Municipal Corporation
	Position held	MIKE 11 HD Modeler
	Activities Performed	• Database preparation and management • MIKE 11 HD model setup
	TRAINING IMPARTED	
A	**Trainee / Client**	IIT Delhi
	Duration	02 days
	Location	IIT Delhi
	Training Imparted	Rainfall Runoff Hydrological Modeling and application of its output in water resource planning
B	**Trainee / Client**	NIH (National Institute Of Hydrology)
	Duration	01 Day
	Location	NIH Roorkee
	Training Imparted	Spatial and Temporal Data Base Arrangement and statistical analysis in Arc Map platform using Temporal Analyst
C	**Trainee / Client**	Hydrology Project II
	Duration	Since Oct 09
	Location	Odisha, Kerala, Chattisgarh
	Training Imparted	Integrated Water resource Modeling for water allocation and planning by using River Basin modeling in Arc Map platform

D	**Trainee / Client**	DWSRPP, Sri Lanka
	Duration	03 Month
	Location	Irrigation Dept., Colombo
	Training Imparted	Hydrological Modeling by using MIKE Basin and MIKE 11software Reservoir water balance simulation Irrigation demand calculation Conjunctive use application in canal command area
E	**Trainee/Client**	Chilika Development Authority , CDA
	Duration	4 days
	Location	Chilika, Odisha
	Training Imparted	Lake restoration study Water quality Model set up using MIKE BASIN software
F	**Trainee/Client**	NIT Rourkela
	Duration	2 Days
	Location	Rourkela, Odisha
	Training Imparted	Overview of Hydrodynamic and Hydrological Modeling Hands on Training on Hydrodynamic modeling using MIKE 11 Software
G	**Trainee/Client**	Anna University , Chennai
	Duration	3 days
	Training Imparted	MIKE Flood, Two Dimensional Modeling

REPORTS AND PUBLICATIONS

	Report / Publication	**Report Highlights**
1	Impact of Cropping Pattern Change in Water Resources of Yamuna River Basin	• Decision support system for Yamuna Basin • Optimization of water resources through various cropping patterns • Water quality impact on river Yamuna by using different method for irrigation
2	Consultancy for Basic Study And DPR For Water Intake System 3x660 MW-Katni Thermal Power Project	• Catchment Hydrology analysis • Reservoir level and storage analysis
3	Prefeasibility study for Bunder diamond mining project	• Synthetic rainfall database generation for long term water availability study, Hydrological modeling • Catchment area treatment plan on the basis of sediment yield index.
4	Water Availability study in Mahanadi Basin	• Hydrological modeling of catchment to estimate runoff • Reliability study of supply vs. demand

Contact Info

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