

**Dr. Bharat Chandra Sahoo, Ph.D.**  
**Associate Professor,**  
**Department of Soil and Water Conservation Engineering**



### **Education**

- Ph.D. (Agril. Engg.) in Indian Institute of Technology, Kharagpur, West Bengal (India)- 2010
- M. Tech. (Agril. Engg.) in Soil and Water Conservation Engineering, College of Agricultural Engineering and Technology, OUAT, Bhubaneswar, Odisha (India)- 1994
- B.Sc. (Ag. Engg. & Tech.), Orissa University of Agriculture and Technology, Bhubaneswar-1986

### **Experience**

Served under OUAT in various capacities starting from Teaching Asst. in 1986 to Associate Professor, In the Dept. of Soil & Water Conservation Engg, in 2011 and continuing till date. During the period from 1987 to 2006, I have been assigned with various responsibilities such as Jr. Scientist and Sr. Scientist in Regional Research Stations, Training Associate and Training Organisor in KVKs.

### **Externally Funded Projects/ schemes**

- Co-Principal Investigator (CoPI) in National Agricultural Technology Project (NATP) on “Improving the Traditional Biasi System” (RRPS – 21) from 2001 – 2004.
- **Principal Investigator** in National Food for Work Project (NFFWP) on “Developing Irrigation Sources along the Drainage Line of Watershed” during 2005-06.
- **Principal Investigator** in National Food for Work Project (NFFWP) on “Plantation of Orchard Crops” during 2005-06.
- **Co-operating Investigator** in the project on “Low cost poly house” funded by APICOL, Bhubaneswar during 2005 – 06.
- **Co-Principal Investigator**, CGC under NICRA (ICAR) entitled “Integration of Rainwater Harvesting and Climate Resilient Agriculture in sustaining productivity and profitability of Rainfed Agro-climatic zones of Eastern India” (NICRA/ GC/95/2011);2011 – 2015.
- **Co-Principal Investigator**, DWM project on “Effect of dry spell occurrence on reduction of paddy yield and optimum design of rainwater harvesting structure for its mitigation” 2011 – 2015.
- **Co-Principal Investigator**, ICAR funded project on “Refinement of Agricultural Tools for farmers field demonstration and Hi-tech Agriculture Programme (SP – 5A7)”, 2012 – 2015.

### **Other important assignments**

- Vice-President, Athletic Society, CAET, Bhubaneswar (continuing).
- Programme Officer, NSS wing, CAET, Bhubaneswar (continuing).

### **Courses taught**

- Environmental Science (B.Tech.)
- Engineering Mechanics (B.Tech.)
- Dams and Reservoirs-II (B.Tech.)
- Groundwater, Wells and Pumps (B.Tech.)
- Design of Pumps for Irrigation and Drainage (M.Tech.)
- Basic Concepts of Laboratory Techniques (M.Tech. & Ph.D.)
- Fundamentals of Soil, Water and Conserv. Engg. (B.Sc. (Ag.))
- Drainage Engineering (B. Tech.)
- Soil and Water System's Simulation & Modeling (Ph.D.)
- Agricultural Drainage System (M. Tech.& Ph.D.)
- Technical writing and communication skills (M. Tech.& Ph.D.)

### **Students guided**

- Guided 02 M.Tech. students and 14 B.Tech students.
- Co-guided 01 M.Tech. student of IIT, Kharagpur.

### **Significant research contributions**

- **Raised bed and pond technology** was introduced successfully for the first time in Orissa at Astarang, Puri as a measure of reclamation of salt affected soils under the banner of ORP on Management of Coastal Saline Soils (OUAT). Today, it has been widely accepted by the farmers along the coast line of Orissa.
- Developed a computer software "**Crop substitution Ratio and Reservoir Sizing (CSRRS)**" for optimal sizing of lined and unlined on-farm ponds in rainfed uplands.
- Developed **low cost gully control structure** using locally available pebbles and plastic bags under NWDPRRA. The technology is widely accepted by Govt. and Non-Govt. organizations in watershed development.
- Developed **improved practices and introduced improved implements** such as 3-row *biasi* plough for *beusan* operation in direct sown rainfed rice under NATP.
- Devised methods to **explore surface water as well as subsurface ground water flows** along the drainage line of watersheds in rolling topography under NFFWP.
- Suitable pump size for various categories of farmers in coastal as well as interior zones of Odisha
- Quantification of error involved in ETo measurement by Pan evaporimeter method.

## Present research interests

- Design of sub-surface drainage system
- Water dynamics under unsaturated condition
- Runoff minimization in watersheds applying time of concentration concept
- Rainwater harvesting and size optimization of on-farm ponds.

## Honours and Awards

- Nil

## International trainings/ visits

- *Asian Institute of Technology, Bangkok, Thailand with financial support from IIT, Kharagpur for paper presentation and chairing a session in the International Conference organized by ASCE during 2009.*
- *Leibniz University, Hannover, Germany to attend DAAD supported summer school on "Teaching and Research for Sustainability" from 21<sup>st</sup> June - 4<sup>th</sup> July, 2009.*

## Peer recognition

- Assignment of Reviewer in some international journals namely Biosystems Engineering (Elsevier), Agronomy for sustainable development (Springer)
- Session Chair in international conference organized by ASCE at AIT, Bangkok during 2009.
- Offered with assignments of confidential operations in GATE conducted by IIT, Kharagpur during 2012 & 2014.

## Publications

- Chairman of editorial board in publication of "Course outline for B.Tech. (Agril. Engg.)
- Authored 03 book chapters in a book (ISBN No: 978 – 96 -81226 – 66 – 7) *Natural Resource Conservation- Emerging Issues and Future Challenges*, Ed. Madhu, M., Jakhar, P., Adhikari, P.P., Gowda, H., Sarda, V.N., Mishra, P.K. and Khan, M. K., ICAR Publication.
- *Authored 16 lessons in e-course book entitled "Reservoir and Farm Pond Design" under NAIP (ICAR), IIT, Kharagpur*
- Authored 26 research papers in peer reviewed international and national journals and 31 popular technical articles.

## Selected publications

- **B. C. Sahoo** and S.N. Panda (2014) *Simulation Modeling for Sizing Lined On-Farm Pond for Various Crop Substitution Ratios in Rainfed Uplands of Eastern India. Acta- Horticulturae (ISHS): 295 – 306.*
- **B.C. Sahoo** and S. N. Panda (2014) *Rainwater harvesting options for rice-maize cropping system in rainfed uplands through root-zone water balance simulation, Biosystems Engineering (Elsevier), vol.124:89 – 108.*
- **B.C. Sahoo**, S.N. Panda and P. Patil (2011) *Evaporation Studies on Canopy Covered On-Farm Reservoir, J. of Irrig. and Drain. Engg. (ASCE), vol. 138 (7): 600 – 612.*
- **B.C. Sahoo**, S.N. Panda and B. Panigrahi (2010) *Modeling Evaporative Water Loss From The On-Farm Reservoir with Biological Shading. Journal of Hydrologic Engg. (ASCE), vol.15 ( 7 ): 544 – 553.*

**Contact details:**

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