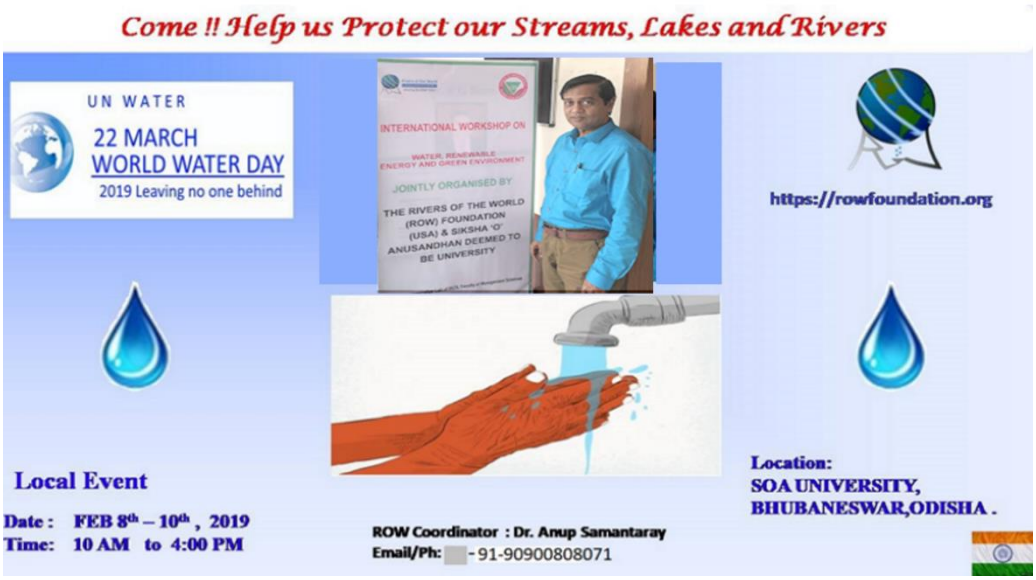
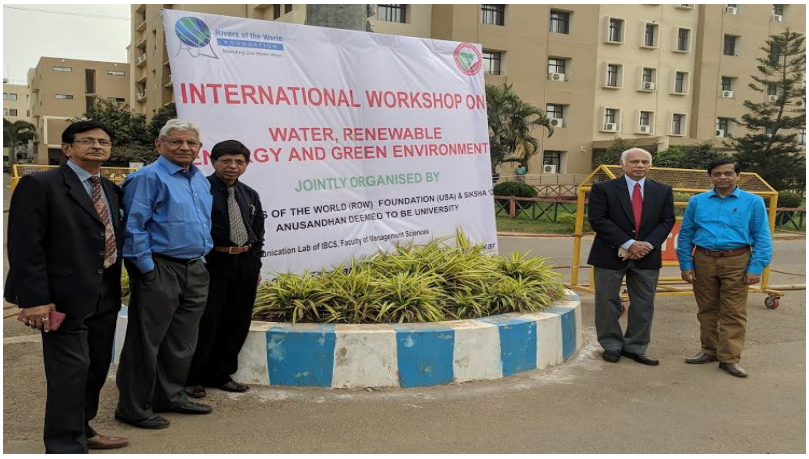
WWD-2019- : **SOA University, Bhubaneswar, Odisha Summary Report**
Sponsored by- Rivers of the World Foundation, Crofton, Maryland USA
https://rowfoundation.org
(In Collaboration with UN Water)



ROW Foundation/SOA Training Workshop & Site Visit, Bhubaneswar, Feb 8-10, 2019

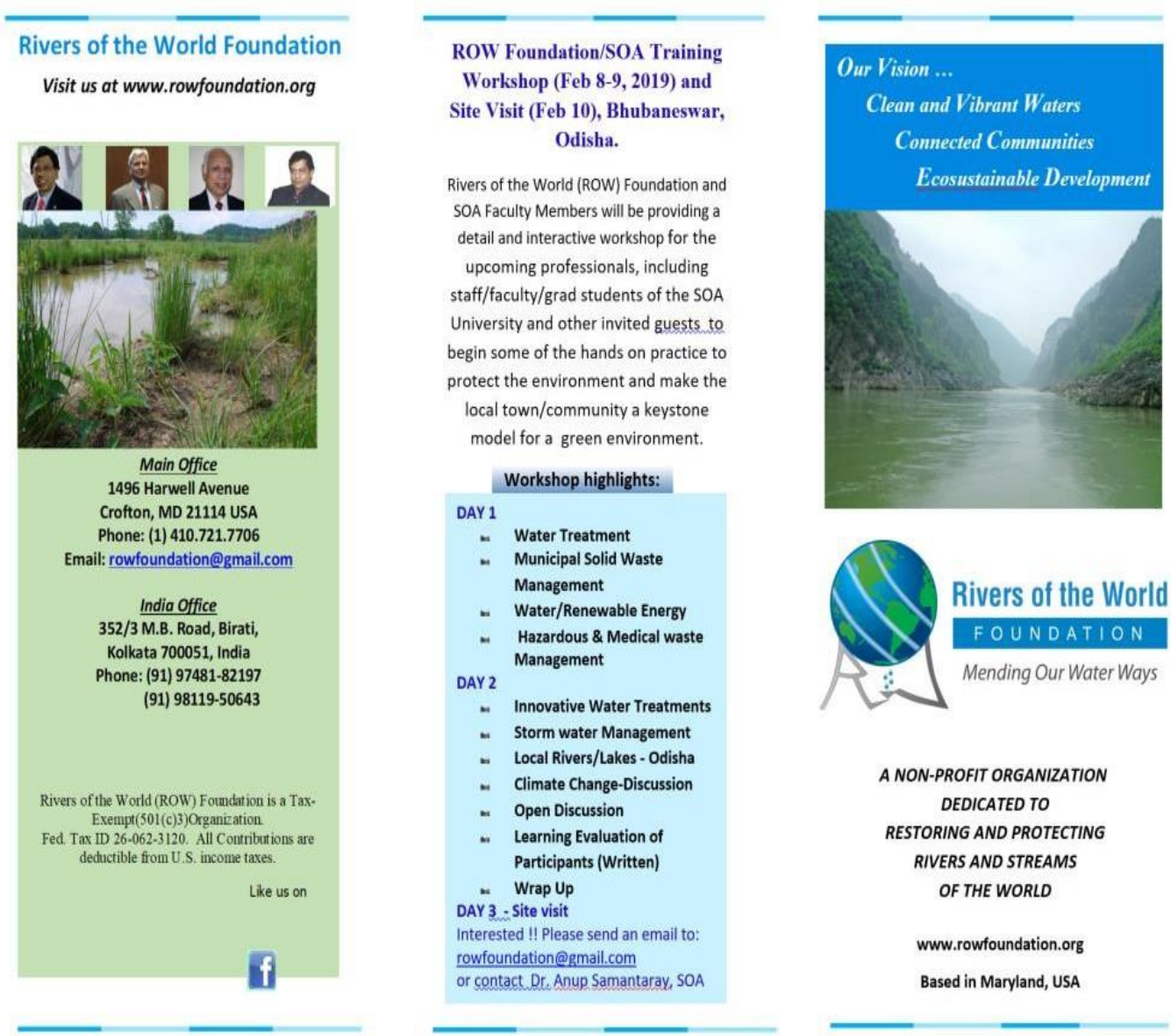


To celebrate the World Water Day 2019 the ROW team of the Siksha O Anusandhan (SOA) University arranged a 2-day workshop by the Rivers of the World (ROW) Foundation (USA) at the SOA University, Bhubaneswar, Odisha. This Workshop included a comprehensive training in water and renewable energy area. It provided ideas and incentives for the new and upcoming professionals to begin a few hands-on practices for protecting the environment and make the local town/community a keystone model for a green environment. The Workshop was followed by a Site visit/water testing of local River/s on Feb 10, 2019.

The experts from US, and India, traveled to Bhubaneswar to provide the training. The local organizations/NGOs and community leaders/organizations provided the local hospitalities and facilities for the training.

For the final program and registration was arranged through the website http://rowfoundation.org . The primary contact for the Workshop was Dr. /Prof. Anup Samantaray at dean.ibcs@soauniversity.ac.in.

A Flier covering the program is below.



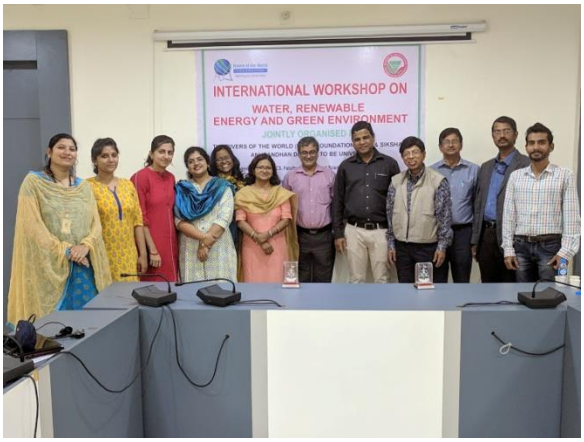
Course Summary

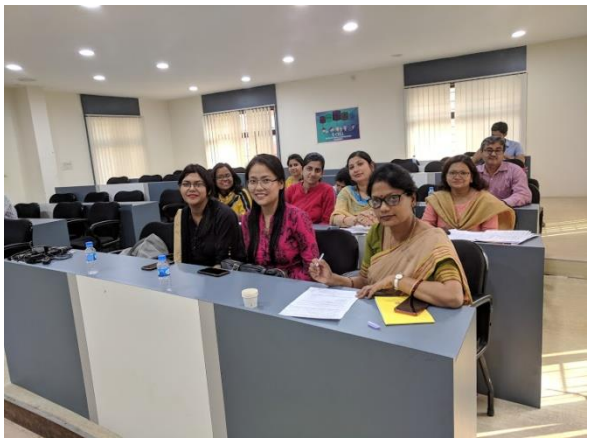
This course provided answers to many of the above items for the participants. This course had a direct benefit in their knowledge and understanding of environmental problems, issues, and possible remedies. The experts who provided the training had arranged for an evaluation at the end of the training to confirm the participants' learning and comprehension of the specific subject area of their interest. Upon successful completion of the two-day program, the participants seemed to have a good understanding of the following –

A. General -

- Appropriate scientific rules and methods adopted to solve problems.
- The logic and reasoning used to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
- Technical sentences and paragraphs in professional documents.

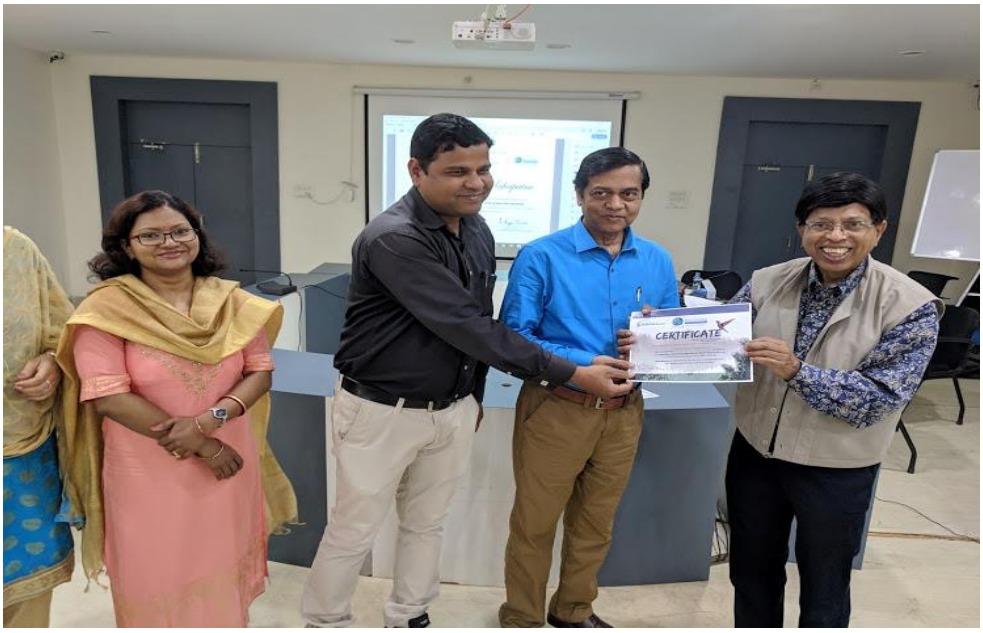
- Verbal communication to convey information effectively
- Active listening with full attention to what other people are saying, taking time to understand the points made.
- Raise questions at right time, and not interrupting at inappropriate times.
- Basics of - water treatment systems, Municipal Solid Waste management, Alternative Energy, Path to human wellbeing and environmental education/awareness.

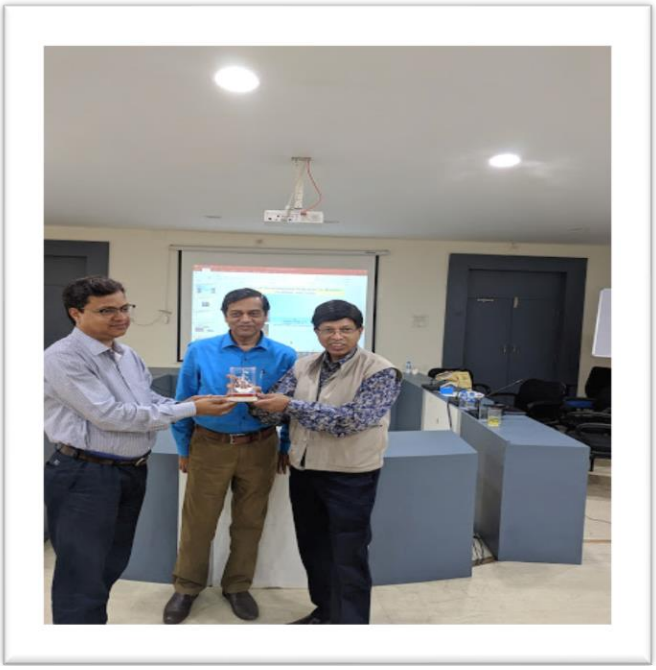




B. Technical (Water and Environment)

- **Drinking Water Treatment technologies –**
    - Natural Filtration, Riverbank Filtration, Sand Filters, Membrane Filtration, Solar Distillation, Solar pasteurization
- **Wastewater Treatment technologies -**
    - Standard clarifier, degradation, sludge removal system; a few other alternatives, and installations in India
    - **New!! Hydrodynamic cavitation technology applications for water treatment**
    - **New!! Water Distribution Network, Piping/Lift Stations – Design Considerations**
    - Other innovative treatment systems – Deep Pond system, Wetland-based treatment systems, and upcoming Micro Desal Technology performance and future developments
    - Wastewater treatment plants – operations issues and operator training needs.





Dr. Manas Mullick, Director, ITER , and Dr. Anup Samantaray, Dean, IBCS presenting an Award to Subijoy Dutta , ROW Foundation, USA

Storm water management alternatives – current practices

- Water Quality Testing and Monitoring – Tools and Techniques
- Municipal Waste Management –
    - Door to Door Collection, segregation at source, composting, waste to energy alternatives, and possible funding sources/agencies.
- Renewable and waste to Energy
    - Waste to Energy – evolving technologies towards safe conversion of waste to energy
    - Solar, Wind, and other alternatives
- Hazardous Waste Management –
    - Serious health impacts of hazardous wastes, need for proper management, systematic, safe handling and collection of household hazardous waste
    - Environmental treatment technologies for remediating hazardous wastes
- Medical Waste Management –
    - New!! Innovative medical waste management systems and technologies
    - Identification and Categorization of Medical Waste
    - Segregation of Medical Waste
    - Minimization, Treatment and disposal of Medical Waste
    - Education and Training of Medical professionals

Day 2

7. **Innovative Treatment Technologies and Operations**
    a. Wastewater treatment plant – Operations
    b. Innovative Water Treatment technologies
    c. New!! Applications on Drone/Remote Sensing Technologies

- Environmental Problems/Climate Change Factors
    - Some relevant studies and simple local observations of sea-level/temperature rise over a period of time, trend analysis
    - Climate Monitoring, State of the Climate by NOAA
    - Use of simple environmental indicators to monitor issues and problems.
- Remote Sensing Technologies –

- Hyper spectral analysis of streambeds, infidelity image processing by AVIRIS (NASA)and Indian ISRO for science and application research.

- Hyper spectral analysis of algal growth in water, forest cover and vegetation.

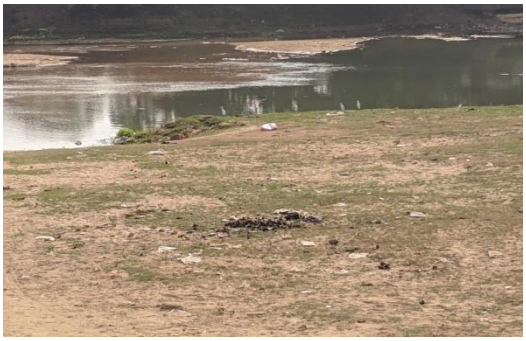
- Education/Awareness –

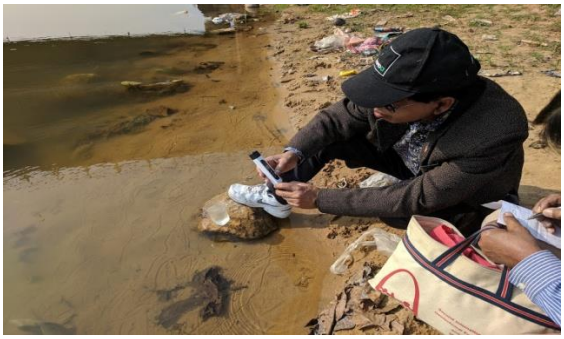
  - World water day activities involving river-bank cleanups, and other awareness practices including a seminar involving experts with full community participation

  - Interaction with the participants on new ideas and thoughts.

Day 3

- Visit to nearby Rivers with NGOs and others.





ROW team from USA tested the water quality of the Daya River on February 10th

Cyclone Impact to the area in May 2019

Extremely severe **cyclonic Storm Fani** made landfall close to Puri in Odisha on May 3rd with maximum sustained wind speeds of 180-190 km/h. ... Some of the deadliest tropical cyclones on record have occurred in the Bay of Bengal. This cyclonic storm, Fani caused extensive **damage** and impacted life and property of more than 16.5 million people in Odisha, India.

Chief Minister of the State of Odisha invited international agencies, national NGOs, the private sector and the civil society to come forward and join in the recovery and reconstruction efforts to rebuild Odisha.

This report was compiled by the ROW Foundation USA with supporting information from Dr. Anup Samantaray. Please send your questions and comments to the primary contact for the Workshop Dr. /Prof. Anup Samantaray at dean.ibcs@soauniversity.ac.in .