

Progress report of Coca-Cola Department of Regional Water Studies

Progress report
January 1- March 31, 2018



Highlights

This report gives information related to outreach activities of the Department carried out during January 1- March 31, 2018. These activities include:

- Events/Seminars/Workshops/Meetings
- Study Trip
- Participation in other events
- Research Publications
- New Project Funding

1 Events/Workshops/Seminars/Meetings

1.1 Meeting with Hon'ble Minister of Housing and Urban Affairs, January 9, 2018:

Project on 'Strengthening water and sanitation in urban settings' funded by USAID was successfully concluded on October 31, 2017.

One of the outcome of the project is the report on 'State of Urban Water and Sanitation in India'. The report got a lot of visibility in Media and recognition by Development Organisations. A copy of the report was presented to Hon'ble Minister of Housing and Urban Affairs Sh. Hardeep Singh. Representatives from Coca-Cola, USAID and TERI SAS were present on the occasion.



1.2 Hosted training programme for Engineers of WAPCOS, 16-22 January, 2018:

The Department organized a training programme for engineers of WAPCOS, which is a consultancy organization under ministry of water resources. The programme was held between 16-22 January, 2018 and spread over 7 days including weekends, wherein

hands-on training with real life situation with instruments for flow measurement was carried out. The training programme encompasses *water demand management*, *water audit* and *integrated river basin planning*. Engineers of WAPCOS



are engaged in various consultation assignment related to these topics. In the training, we provided the latest status of the art knowledge and renewed theories and thinking on these topics which is not generally included in the graduation programme of the students. Most of

the participants have appreciated and gave feedback in structured format and the suggestion came over was to have such training programmes of more duration and on annual basis with TERI School of Advanced Studies. The overall rating emerged out to be 8.5 on the scale of 10. At the end of the programme, there was sufficient value addition in their knowledge base and programme was fruitful from the point of view to discharge their duties.

1.3 Invited as resource person in a regional capacity building workshop, January 27-28, 2018:

Prof Arun Kansal was invited as a resource person in the workshop on Regional Capacity Building Water Governance, held in Bangkok on January 27-28, 2018. The workshop has participation of experts from SAARC nations. Representatives of institutions present made presentations on the current programmes offered by their respective institutions. Further, participants discussed areas and initiatives for collaboration. Following initiatives were identified:



- Quantity and quality of water in the GBM and Indus River Basins.
- Joint pollution monitoring of trans-boundary rivers and identification of mitigation measures
- Understanding change in land use and its impact on surface and groundwater flows; including research on water-efficient crops
- Transboundary navigation in Bangladesh, Bhutan, India and Nepal Sedimentation
- Ground water issues, including mitigation measures for arsenic and package of practices in India, Bangladesh, Pakistan and Nepal.
- Compendium of traditional knowledge on water management by communities in South Asia.

1.4 Hosted Exposure visit, January 31-Feb 1, 2018:

The Department, on behalf of Himalayan University Consortium-ICIMOD organised an 'Exposure visit to Water Studying Institutions in India' for the delegation from Afghanistan, Bhutan, Nepal, and Bangladesh on January 31-Feb 1, 2018. Joint Secretary MoWR Sh D.P. Mathuria delivered inaugural address. Apart from Coca-Cola Department of Regional Water Studies, experts from various university such as Jamia Millia Islamia, Shiv Nadar, South Asia University, National Institute of Hydrology, IIT Kanpur, JNU, Centre for Policy Research and others interreacted with delegation. A Thematic Working Group on Water is started in HUC where the department will take the lead role for first 3 years. Some action points for the TWG on water are:

- Continue to expand the Water Group through HUC members' signing up

- Consolidate the Group's governance structure
- Maintain contact and reach out to experts in the field who are not based in HUC members but can serve as individual members of the advisory group.
- Build a compendium of expertise and experts in and on waters of the HKH to facilitate sharing of trained manpower, to be hosted by the HUC Online Portal



- Facilitate an online open accessible database
- Jointly develop research proposals for upcoming HUC Calls and eventually for international funding
- Jointly develop training programmes
- Jointly develop policy dialogues and policy briefs addressing trans bounding issues of water governance.

1.5 Hosted HUC India members meet, Feb 2, 2018:

The Department hosted Himalayan University Consortium India Members' Meet on Feb 2, 2018. It has gathered eight (08) Vice Chancellors/Directors/Pro-Vice Chancellors and another eight (08) senior representatives of higher education and research institutions which are current and prospective members of the HUC in India. Almost twenty participants took part in five sessions, including Inaugural, Update of Consortium Building Activities, Members' Consultation on HUC Strategy, The Need to Establish an HUC India Chapter and Process to Nominate an HUC Steering Group Member, and Closing Session.



Shri Brij Rathore, Senior Policy Advisor, ICIMOD, welcomed the participants. The meeting was chaired by **Dr P P Dhyani**, SGRR University Vice Chancellor and HUC Steering Group member. **Dr Savita**, FRI Director, **Prof Jyoti P Tamang**, Sikkim University Vice Chancellor, **Prof Arun Kansal**, TERI School of Advanced Studies and **Prof Ramesh Chanda Sharma** served as session chairs. **Ms Bulbul Baski**, PBA Partnership Specialist, served as resource persons for an introduction of partnership approach. **Prof Mahendra Lama**, Founding Vice Chancellor, Sikkim University, **Dr V C Goyal**, Head/ Scientist G, National Institute of Hydrology, and **Prof Rajeswari Raina**, Shiv Nadar University, took part in the capacity of long-term supporter of HUC and representatives of institutions with special interests on SMD higher education.

1.6 Meeting with Chairman UGC, February 2, 2018:

The department organised a meeting with the Chairman UGC for selected members of HUC on February 2, 2018. The HUC provided an overview of the objective of the meeting. We summarized the visions and mandates of the Consortium and highlighted the role of current HUC members in India in research and training on and for sustainable mountain development (SMD) in the Himalayan states. Dr Savita, Director FRI summarized the outcome of the HUC India Members' Meet. She provided a brief summary of recommendations by the Vice



Chancellors concerning common interests on SMD and the process of establishing an HUC country chapter in India. Prof Mahendra Lama shared his recent experience in higher education and think tanks in China and Asia at large, calling forth collective efforts across institutions and government's support to promote the leadership of Indian universities and research institutes in the region. Prof J P Tamang highlighted the needs for capacity building in research and training on mountain-specific issues among universities in hilly areas of India. Prof M Koirala summarized the process of consultation and drafting the HUC Strategy and emphasized the common interests among members in other countries in the Hindu Kush Himalayan region. The Honorable Chairman offered his endorsement of the endeavours of the Consortium. He agreed that higher education in the Himalayan states of India would need an extra boost in research and training capacity, aiming for quality human resource and betterment of livelihoods for the people in the hilly region.

1.7 Visit to Royal University of Bhutan, Thimpu, Feb 16-20, 2018:

The Himalayan University Consortium (HUC) provided seed grant (Grant number: CONIS00739) to Samtse College of Education, Royal University of Bhutan (RUB), to partner with TERI SAS, Delhi, India and Tribhuvan University, Nepal institutions with the objectives to build understanding amongst each other so as to leverage on each other's strengths, expertise, and to work towards long term solution on water sustainability challenges that Himalayan region is facing. More specifically, the objectives of the seed grant stated in the offer are as follows:



- i. Establish a strong network and team building with the partner institutions in relation to sustainability of water resources management.
- ii. Identify the strengths and needs of each partner on water sustainability issues.
- iii. Acquire knowledge and innovative ideas through sharing of innovative practices on water sustainability management in the Himalayan cities.
- iv. Apply creative and innovative ideas of partner institutions on water sustainability management.
- v. Identify potential thematic areas or topics for future collaborative research.

Partner institution has developed interest in working for sustainability aspects of Himalayan region with focus on water and its nexus with food, energy, climate change, livelihood and economic development. One of the major outcome of this joint activity is agreeing on concept to convert into a major research proposal and project activity for joint action on water sustainability. Partners have also recognized role and importance of involving other HUC members for this future joint action. Long term impact of this joint activity is seen in term of multiplier effects achieved through in cooperation of water sustainability theme in graduate student course curriculum. This will help long term impact in term of sensitizing youths to think about linkage of their action and their activities for impact on water resources.



1.8 SWASH 2018, 28 Feb 2018:

The event SWASH (Save Water and Save Humanity), is an annual event of the department which is a student led event to bring together youths from various academic and professional fields to discuss on water issues and come out with probable solution to address it. This year, the SWASH event which was 4th in the series was initiated by the alumni of the department which is heartening. The event was organized on February 28 and was totally led by the student in terms of planning, logistics etc. The theme of this year was “SDG 6 and Priorities for our shared water future”. The event was organized as an interactive dialogue between experts and university students and young professionals. The experts presented the broad contours of social,



economic, and, political challenges around water and sanitation in India. This was followed by a group discussion in four groups of the participants along with their expert mentor, addressing four components of SDG 6, i.e., *Drinking Water, Sanitation, Integrated Water Resources Management & Water Quality*. Each group presented on the contribution of young professionals to address global water issues and defined a call for actions for different stakeholders for engaging youth to address these issues. The outcome of this event will be submitted to World Water Forum and will be a part of a publication that showcases outstanding youth-led initiatives. This was the first time when the event was organised by the combined effort of our alumni and existing students. The live streaming of the event was available on Facebook page where around 125 viewers participated from all around the world. There was a total of 73 online registration for participation, however, only 35 turned up finally. Maybe we need to reach to the enthusiastic youths in a more effective way and encourage better number of participation from the next time.

1.9 MDP on Gender, Equity and Water Management at Guwahati, March 14-15, 2018:

This was organised during March 14-15, 2018 at administrative Staff College, Guwahati. The programme was attended by 23 participants representing 8 organizations in Guwahati. We have 7 resource persons to deliver the programme, 4 were from Guwahati and 1 from Shilong. Additional Chief Secretary (Finance) Sh V B Pyarelal was the Chief Guest and Ms KARLENE



MAYWALD, Chair ICEWARM gave keynote address. The awareness level of participants was good and hence most sessions had rich discussions between resource persons and participants. Some participants shared their experience on the theme. In that sense the programme was informative for us as well and we learnt the differences in Gender dynamics existing in NE region in contrast to North West region of India. Our experience in Kolkata and Chennai while working on USAID funded project also came handy to engage one session. Faculty members of the department prepared very good literature for dissemination. This was appreciated by participants. A similar programme will be organized in Hyderabad on August 22-23, 2018.

2 Participation in other events

2.1 **Workshop at ONGC, 20 March 2018:**

Dr. Rinki Deo and Ms. Ranjana Ray Chaudhuri participated in a half day workshop of Industrial Water Benchmarking study to brainstorm and help co-create an index which becomes an industry gold standard for water management. The event was organized at ONGC, Vasant Kunj, New Delhi This was a pioneering effort by **ONGC, UN GCNI and Accenture India** in understanding the industry water use, global and Indian benchmarks across seven sectors. The overall objective of this study was to conduct a Water Index for the industry.



The proposed Water Index aimed to help the companies to attain following objectives:

- a. Benchmark their water metrics against Indian and global averages
- b. Understand their performance on strategic direction, operational excellence and overall impact
- c. Identify areas of improvement
- d. Learn from the best practices in India and abroad
- e. Create an ecosystem in India to create a water efficient industry beating the global standards

The scale of this effort and the intended objectives call for a co-creation approach where the industry, water experts, regulators and all other stakeholders get together and identify the approach and methodology for this pioneering work.

2.2 **World Water Day, 22 March 2018:**

Faculty members and the students of the department attended the launch of two valuable reports, the “**World Water Development Report (WWDR 2018)**” and “**Industrial Water Index**” on the occasion of World Water Day at ONGC, New Delhi. The 2018 edition of the UNESCO’s World Water Development Report (WWDR2018), titled “Nature Based Solutions for Water”, seeks to inform policy and decision-makers, water professionals and entire water community, about the potential of nature-based solutions (NBS) to address contemporary water management challenges across all sectors. NBS use or mimic natural



processes to enhance water availability and reduce risks associated with water-related disasters and climate change (e.g., floodplain restoration, green roofs). The Report demonstrates how nature-based solutions (NBS) offer a vital means of moving beyond business-as-usual to address many of the world's water challenges while simultaneously delivering additional benefits vital to all aspects of sustainable development. WWDR is the flagship publication of UN-Water and is designed, prepared and coordinated annually by the World Water Assessment Programme of UNESCO. The WWDR benefits from the guidance, support and substantive inputs from the 31 UN Agencies and 39 partner organizations that comprise UN-Water. Therefore, WWDR is a functional example of the UN system 'delivering as one' in the field of water.

The Industrial Water Benchmarking Study is being carried out in three phases. Phase 1 culminated in a report titled 'Industrial Water Benchmarking Study' which provided an overview of the industrial water landscape in India covering trends, challenges, risks and industry best practices. This phase incorporated a detailed examination of the (i) Thermal Power Generation and (ii) Iron & Steel industries and Phase 2 of this water study was on the building upon the foundational insights from Phase 1 adding six more sectors i.e (i) Oil & Gas, (ii) Fertilizers, (iii) Paper & Pulp, (iv) Beverages, (v) Automotive, and (vi) Heavy Engineering. Insights from Phase 1 and 2 of the study, driven from a deep understanding of 8 key water consuming industries in India, will be leveraged for the preparation of a comprehensive Water Index, to be developed in Phase 3.

3 Study Trips

Field Visit of second semester M.Sc. and MTech Students to Goa, 05 -09 Mar 2018:

The second semester students of M.Sc. and MTech Water Science and Governance visited Goa during March 3-8, 2018, to gain practical understanding of the courses that they are taught in their second semester. Dr. Nirupam Datta from the department accompanied the students on this visit. They visited the following sites:

National Institute of Oceanography– The visit was organised with the support of TERI Goa. It is a CSIR funded institute of excellence in the field of marine science. The institute itself is an excellent example of being a nerve centre of interdisciplinary research in marine systems cutting across different streams and collaborations. The students interacted with the principal scientists and got themselves updated on the various aspects of research in marine systems and their applications in domestic, industrial and agricultural sectors.



TERI Hub, Goa: The students visited the sites of river bed water filtration systems in South Goa near Madgaon. Here the students gained knowledge from onsite demonstration of the

filtration process and how it is being used to clear the river water off the effluents discharged into it by the industrial units and use the same for agriculture and domestic purpose.

4 Research Publications

Research Article published in Journal of European Geosciences Union Biogeosciences”:

Prof. Arun Kansal as one of the co-authors published a research article for the *Journal “Biogeosciences”*. This journal of European Geosciences Union, is an international scientific journal dedicated to the publication and discussion of research articles, on all aspects of the **interactions** between the biological, chemical, and physical processes in terrestrial or extraterrestrial life with the geosphere, hydrosphere, and atmosphere. The objective of the journal is to cut across the boundaries of established sciences and achieve an interdisciplinary view of these interactions. In this paper, CO₂, organic and inorganic carbon concentrations and physico-chemical parameters are measured at 9 stations in the NT2R and 16 stations downstream of the dam and the powerhouse. This weekly to fortnightly sampling was conducted in order to estimate emissions from the reservoir surface and downstream emissions during 4.5 years of monitoring after impoundment. CO₂ emissions from the large drawdown area of the NT2R was also measured that represented seasonally up to 65 % of the maximum reservoir area during the study. The spatial, seasonal and interannual variation in emissions by all of the above-listed pathways and their contribution to total gross CO₂ emissions are discussed.



5 New Project Funding

The Department has received two funded projects, one by HUC-ICIMOD and the other one by ICEWARM-Australia.

- The HUC-ICIMOD funded project is for preparing an assessment report on “Water Study Higher Education Institutions in India”. The main objective of the project is to produce a preliminary inventory and analysis of the publicly available information on current state water studying higher education and research institutions in India. It started from March 1, 2018 and will end by May 15, 2018. Prof. Arun Kansal and Dr. Rinki Deo are coordinating this project.
- The ICEWARM-Australia funded project is for organising Management Development Programmes (MDPs) on equity, gender and water management. Under this project 4 MDPs are to be organized in 4 different cities of the country which started from January 2018 and will end by June 2019.