

June 2018

Progress report of Coca-Cola Department of Regional Water Studies

Progress report
April 1- June 30, 2018



Highlights

This report gives information related to the activities of the Department carried out during April 1- June 30, 2018. These activities include:

- Passing out students' Dissertation detail
- Students' Placement and Achievements
- Events/Seminars/Workshops/Meetings
- Research Publication

1 Passing out students' Dissertation detail

1.1 Graduating batch:

The students of the third batch of M.Sc/M.Tech of the department shall pass out on 15 Jul 2018. The batch had 06 M.Sc. students and 09 MTech students. The title of the thesis submitted by these 15 students are as follows:

Name		Thesis title
Ashu Balhara		To check the working efficiency and promoting the livelihood opportunities through adoption of bio-sand filters
Harsh Ganapathi		"Feasibility study of riverbank
Pragya Gangal		Filtration along Yamuna River in Agra and Mathura and numerical modeling using modflow"
Ravi Prakash		"Ground water flow modelling to study
Sonali Sanjay Agray		Hydrodynamics of parts of Ram Ganga"
Harsha		Assessment of biological treatment for removal of ammonia from drinking water under Delhi Jal Board
Aparajeeta		Design of 564mld (124mgd) capacity wastewater treatment plant at Okhla, New Delhi
Yashi Gautam		Value for money assessment of Swachh Survekshan 201
Zeba Zoaraih Ahsan	MTech	Past, present and future scenario of sanitation in India - a comparative study
Gunjan Chawla		Treatment methods for contaminated urban water bodies using combination of aquatic species
Lucas Robert Luhunga	M.Sc	Assessing water and sanitation status of Burundian refugees at Nduta refugee camp, Kigoma, Tanzania

Mayuri Phukan		Numerical simulation of stream aquifer interaction to assess groundwater flow and contaminant transport: a study on Hindon river, Saharanpur
Ranu Shukhla		Impacts of urbanization on water quality of River Yamuna
Shubham Satish Nandanwar		Comparison of solid waste management in Delhi and NCR on the basis of parameters of Swachh Survekshan 2018
Bommaraboyina Prithvi Ram		An investigation of chromium uptake in grafted and non-grafted tomato plants irrigated with treated waste water

2 Students Placement

The convocation ceremony for these students shall be held in November 2018.

The final placement status of the students as of date is as follows:

Name	Course	Placement Status
Ashu Balhara	M.Tech	TATA Centre for Development-University of Chicago
Bommaraboyina Prithvi Ram	M.Sc.	ICRISAT-Hyderabad
Pragya Gangal	MTech	Prism Cement
Ravi Prakash	MTech	NEERI-Delhi
Sonali Sanjay Agray	MTech	NJS Engineers India Pvt Ltd
Harsha	MTech	Prism Cement
Aparajeeta	MTech	Sehgal Foundation
Gunjan Chawla	M.Sc.	Placement Awaited
Harsh Ganapathi	M.Tech	Placement Awaited
Mayuri Phukan	M.Sc	Placement Awaited
Lucas Robert Luhunga	M.Sc	Returned to his country, Tanzania
Ranu Shukhla	M.Sc	Interested in B.Ed.
Yashi Gautam	M.Tech	Opted out to prepare for NET
Zeba Zoaraih Ahsan	M.Tech	Opted out to prepare for civil services examination

2.1 Students' Achievement:

Our Student Mr. Ravi Prakash of 2016-2018 MTech batch, won best poster presentation award in a National conference on ENVIRONMENTAL CHALLENGES FOR 'NEW INDIA'" organized by Environment and Social Development Association(ESDA) in collaboration with Dr. Bhim Rao Ambedkar College, University of Delhi, CSIR-National Environmental Engineering Research Institute & National Environmental Science Academy, Delhi. The event was held at Dr. Bhim Rao Ambedkar College, University of Delhi during June 2-3, 2018. The topic of his presentation was "Assessment of Biological Treatment for Removal of Ammonia from Surface Water". His research involved pilot study of controlled nitrification using cylindrical bio-reactor in which Gravel was used as a growth media for nitrifying bacteria. Ammonia was converted to nitrite with the help of bacteria. The rate of nitrification under different ammonia concentration was studied by analyzing ammonia, nitrite and nitrate concentration with respect to time. Orthophosphate dosing was done as it is a primary nutrient for nitrifying bacteria. Result of the study showed that 7mg/l of ammonia concentration can be removed per day by using this treatment scheme.



3 Events/Seminars/Workshops/Meetings

3.1 Interactive Session with students of Chaudhary Brahma Prakash Government Engineering College, Jaffarpur, Delhi on April 3 and with the students of Miranda House on April 5, 2018:

The faculty members of the department conducted a half day interactive session with students of Chaudhary Brahma Prakash Government Engineering College, Jaffarpur and Miranda House, DU. The platform was also used to inform students about the courses being offered by the Coca Cola Department of Regional Water Studies. As part of the program, Dr. Nirupam Datta delivered a lecture on "*Nature Based Solutions for Water*" stressing the important role played by wetlands in cleaning up the water, storing rainwater, groundwater recharge and in micro-climate management. Dr. Rinki Deo presented to the students on the use Remote Sensing and GIS technology for different water applications.

3.2 Delivered a lecture on "Economic Methods of Valuation of Forest Ecosystems" on May 18, 2018:

Dr. Nirupam Datta was invited by Indian Institute of Public Administration (IIPA), New Delhi to facilitate a session on "*Economic Valuation of Forest Ecosystems*" as part of a one-week training program on "Role and Scope of Environmental Economics in Sustainable Development" for senior Indian Forest Service (IFS) officers. The session involved explaining the rationale behind development of non-market methods for valuation and the required methods needed to assess the valuations depending on the context and the nature of the problem at hand. Dr. Datta also shared with the officers who came from across the country, the pitfalls and limitations of the methods thereby underlining the importance of discretion that needs to be exercised by the policy makers while considering the reports received based on such valuation methods and how to utilize the same for environmental impact assessment of different projects as far as their impacts on the services provided by the forest ecosystems are concerned. Dr. Anupam Sarkar on behalf of IIPA coordinated the entire session.

3.3 The HUC Water Group Second Meeting Held in Kunming, China, June 6-8, 2018:

As a follow-up to the first Water Group meeting in New Delhi in February 2018, **Prof. Arun Kansal** attended the second meeting of the HUC Water Group held during June 6-8, 2018 in Kunming, China. Established in November 2017, the Himalayan University Consortium (HUC) Thematic Working Group on Water (Water Group) is a regional initiative for systematic amalgamation



of widespread knowledge on water resources management in Himalayan region under a common platform which will in turn foster learning through an interdisciplinary approach. Apart from the academic value addition, the group also aims to strengthen regional cooperation around water resources by establishing networks of water management professionals.

The second meeting held at Yunnan University aimed to develop strategy document on actionable points and generate consensus among the members on the WG operational framework, for example, governance, communication, promotion, resource mobilization and joint actions through intensive group works. The members also discussed financial sustainability of the WG.

Representatives from Kandahar University in Afghanistan, Chittagong University in Bangladesh, Yunnan University in China, TERI School of Advanced Studies in India, Yezing Agricultural University in Myanmar, Kathmandu University in Nepal, Pakistan Agricultural Research Council in Pakistan, University of Reading in United Kingdom and University of North Carolina State in the USA attended the meeting. Two resource persons from HUC-ICIMOD active in water theme also participated. The meeting was organized by the Institute of International Rivers and Eco-Security of Yunnan University China in partnership with ICIMOD's Himalayan University Consortium (HUC) and jointly funded by Yunnan University China and World Bank.

Daming HE, distinguished professor at the Asian International Rivers Center (Yunnan University), warmly welcomed the participants to the meeting. He gave a comprehensive presentation on Yunnan University China and their programmes. Philippus Webster from ICIMOD also joined the meeting to share the findings from the Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP).

Some of the main agreements made by the end of the meeting included: - drafting the WG strategy for country level consultations by early July 2018; - sharing the strategy with the HUC members during the 2018 annual meeting; -reaching out to other HUC members for group expansion; -publish a joint knowledge product on comparative water governance and policies in the HKH in 2018; and -publishing the first newsletter in March 2019. Everyone agreed with the continuation of Arun Kansal as group Lead till the formation of WG organizational structure.



3.4 Invited to participate in the South Asian Young Talents China's Science, Technology and Innovation Trip during June 10-17, 2018:

Dr. Rinki Deo was nominated and invited to participate in the South Asian Young Talents China's Science, Technology and Innovation Trip on June 10-17, 2018 in the cities of Shanghai and Kunming China. This trip was organized by the Department of international cooperation, Ministry of Science and Technology (MOST) and P.R. China and China-South Asia Technology Transfer Center (CSTTC). The trip was to enhance mutual understanding and friendship among young scientists of China and other South Asian countries, and further to explore future possibilities for cooperation. The motive of this trip was to bring together the young scientists from India,



Pakistan, Nepal, Afghanistan, Srilanka and China and serve as a bridge for them to build mutual understanding and exchange ideas through activities such as field visits to STI enterprises and science parks in the city of Shanghai and Kunming, interactive communication etc. The invited scientists also attended the 3rd Forum on China-South Asia Technology Transfer and Collaborative Innovation.

Young scientists from Information & Communication Technology Institute (ICTI) in Afghanistan, Nepal Academy of Science and Technology (NAST) in Nepal, Industrial Technology Institute (ITI) in Sri Lanka, Pakistan Council of Scientific and Industrial Research (PCSIR) in Pakistan, Sikkim Univ, WII and TERI School of Advanced Studies in India participated in this trip. The trip included visit to Pudong software park, Shanghai Industrial Technology Institute, World Agroforestry centre, Kunming Institute of Botany, Fudan, Tongji and Yunnan University.



3.5 Participated in Pre-Conference event “Water and Science for Sustainable Future” held in Dushambe (Tajikistan) on June 19, 2018:

Prof. Arun Kansal participated in the pre-conference meeting panel discussion on 19th June, 2018. In the meeting Prof. Kansal put across beneficial experience we had with industry linkages, important links between practical work and teaching of IWRM issues, example of e-learning programme and role of multi-stakeholder partnerships in making best of education in this area. Further, advantages of forming network of experts from HKH region through HUC which helped develop a shared understanding of limitations and opportunities in regional level resource sharing, coherence in sectoral issues, need for convergence in approaches to public policy development and governance framework. The co-panellist were Dr Xi Chen, University of Wisconsin-Madison, USA; Dr Christina Leb, The World Bank group and Dr Jenniver Sehring, IHA Delft for water Education, Netherland. The discussions were moderated by Ms Julia Komagaeva, The World Bank, Russia. Prof. Kansal also had a chance to give 2-minute interview to a local TV channel.

3.6 Participated on invitation in a High-level International Conference on International Decade for Action “Water for Sustainable Development” June 20-21, 2018:

Prof. Arun Kansal participated in a high-level conference on International Decade for Action “Water for Sustainable Development” organized in Dushambe (Tajikistan) during June 20-21, 2018. The conference had participation of about 1000 delegates, mainly from Central Asia and Europe and the sessions space were given to heads of various Ministries in Central Asia, UN representatives and donor agencies. The participation in the conference was also good in terms of interaction with experts from Central Asia and making them aware of Coca-Cola Department of Regional Water Studies at TERI SAS and Water group of HUC-ICIMOD.



4 Research Publications

Research Article published in the Journal “Urban India”:

Ms. Ranjana Ray Chaudhary published a research article for the *Journal “Urban India*. The co-author of the article are the students of the 2014-2016 batch of TERI SAS, Mr. Syed Waman Ali Qazi and Mr. Shashank Pandey from the Water and Energy departments respectively. The study presented in this paper assesses the negative impact of anthropogenic disturbance on soil hydrology and soil texture in urban green spaces, since these spaces play a vital role in absorbing rain water and reduce flooding.

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INFLUENCE OF URBANIZATION ON SOIL INFILTRATION RATES-A CASE STUDY

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ABSTRACT

Delhi is a mega city which has undergone immense transformation. It is dominated by urban landscape, flyovers, elevated corridors and roads which are being constantly widened and improved. The provision of urban underground utilities is disturbing the soil quality, the roots of existing trees is injured in the process and therefore the tree cover do not survive beyond a few seasons after the construction activity. Urban parks and other open spaces are often intruded upon, even the peri-urban areas around Delhi are fast expanding, reducing quality green cover. Though urban green spaces (including residential parks) exist in Delhi, the urban soil has poor physical qualities, further there is loss of soil cover, alteration of existing natural drainage network. The objective is to assess the negative impact of anthropogenic