

January 2020



# Half Yearly Report of Coca-Cola Department of Regional Water Studies

**July- December 2019**

## Highlights

This report gives information related to the activities of the Department carried out during July -December 2019. These activities include:

- Student Admissions/Placements/Major Projects
- PhD scholars graduated
- Events/Seminars/Workshops
- Field Based Learning
- Projects
- Research Publications

The table below summarises the activities carried out by/achievements of the department during July-December 2019:

Items	Count
Research/Conference Publications	19
PhD scholars graduated	2
Events/Seminars/Workshops	22
Field Based Learning	2
Projects	1

### 1 Student Admissions/Placements/Major Projects

The total number of admissions in the department for the batch 2019-21 was 10- six in M.Tech Water Resources Engineering and Management (WREM) and four in M.Sc Water Science and Governance (WSG).

The student placement for the batch 2017-19 is as follows:

S.No.	Name	Program	Organisation
1.	Divyansh Upadhyay	MTech WREM	CII Triveni
2.	Vilina Engheepi	MTech WREM	ATREE
3.	Animesh Sarkar	MTech WREM	Family business
4.	Prashant Pandey	MTech WREM	TCD UChicago
5.	Monish Wankhede	MTech WREM	Navjyoti Foundation
6.	Yapri Jamatia	MSc WSG	Tripura University
7.	Anju Bhaskaran	MSc WSG	Pradan

The student major projects for the batch 2018-20 are still in progress. Majority of the students secured offers from various organisations. However, some of them have not confirmed their position as they are searching for further opportunities.

S.No.	Name	Program	Organisation
1.	Aishani Goswami	MTech WREM	Center for Environment Education
2.	Nitish Rai	MTech WREM	MOEF
3.	Apoorv Bhawani Nandwana	MTech WREM	WaterAid
4.	Manjaut Kaur Saluja	MTech WREM	Hindustan Unilever Foundation
5.	Palash Raghava	MTech WREM	CEDAR
6.	Akash Gaur	MTech WREM	NIH Roorkee
7.	Sidhant Raheja	MTech WREM	TERI SAS
8.	Hardi Sukhadya	MTech WREM	ICRISAT
9.	Vinni Munjal	MTech WREM	UNDP
10.	Dikshita Arora	MSc WSG	NIH Roorkee

## 2 PhD scholars graduated

This year, two PhD scholars from our department graduated - Dr. Madhuri Nanda and Dr. Sudeshna Mayasen.

S.No.	Name	Topic	Date of PhD defence	PhD Supervisor
1.	Dr. Madhuri Nanda	Analyzing Vulnerability to Global Phosphorus Scarcity	11 Nov 2019	Prof. Arun Kansal
2.	Dr. Sudeshna Mayasen	Sustainable Planning of a niche crop system in Indian Himalayas using value chain approach – A study of large cardamom spice from Sikkim Himalayas	11 Nov 2019	Prof. Arun Kansal

## 3 Events/Seminars/Workshops

### 3.1 Organised by the department

#### 3.1.1 Special Session on 'Climate change and Water Management' in the Waterfuture

**Conference organised by the Future Earth held in Bangalore during 24-27 Sep 2019**

A half-day special session on Climate change and Water Management was organized on 27 September 2019 at the Indian Institute of Science, Bangalore. Ms. Ranjana Ray Chaudhuri was the main organiser and Dr. Sherly M. A. also participated in the session. The session covered topics, namely, 1) Water cooperation for climate resilience: path to achieve water security and avoiding conflicts; 2) Assessing climate smart urban water availability, accessibility, affordability and well-being; 3) Sustainable water perspectives in the context of Disaster Risk and Climate Resilience; and 4) Experience of working in the field of climate change and water management at grass root level.



The event was organised at the prestigious Indian Institute of Science, Bangalore on 27 September 2019.

### 3.1.2 School University Network (SUN) Outreach activity at RPVV School, Dwarka on 5 Aug 2019

An event of SUN was organised at RPVV School, Dwarka on 5<sup>th</sup> August 2019 along with the students from our department. The theme of the event was 'A Drive for Water Conservation' and was well received among the audience that comprised of both school students and elders as well.



### 3.1.3 Guest talk by Sh Mohinder P. Gulati on “Energy-Water-Agriculture Nexus: From Awareness to Action” on 27 Sep 2019

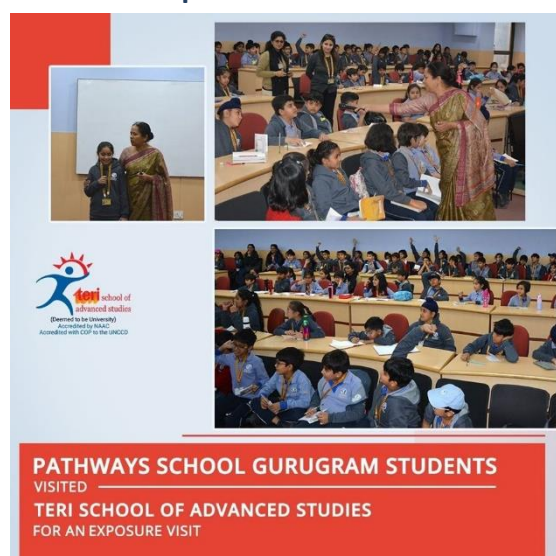
A guest talk on “Energy-Water-Agriculture Nexus: From Awareness to Action” by Sh Mohinder P. Gulati, former Chief Operating Officer, Sustainable Energy for All and former Adviser (Energy), World Bank was organized on 27 September 2019. Mr. Gulati spoke about the nexus framework and the reason for adopting a nexus approach and the associated challenges. He also shared some of the initiatives in India.

### **3.1.4 Expert lecture by Commodore S M Urooj Athar, Principal Director II, Naval Oceanology and Meteorology, Indian Navy on “Effect of Climate Change on Maritime Environment” on 20 Nov 2019**

An expert lecture on “Effect of Climate Change on Maritime Environment” by Commodore S M Urooj Athar, Principal Director II, Naval Oceanology and Meteorology, Indian Navy was organized on 27 September 2019. Commodore Urooj spoke about the causes of climate change, the prediction system of extreme weather events and their applications in maritime environment with specific examples from Indian Navy.

### **3.1.5 Visit of students from Pathways School at TERI SAS Campus on 04 Dec 2019**

140 students of Grade 4 accompanied by 10 teachers visited TERI SAS to understand the concept of Green Building and Renewable Energy on 04 Dec 2019. TERI SAS, as part of the School University Network is involved in creating awareness on Environmental issues and Sustainability across schools in Delhi for the past three years.



### **3.1.6 Climate Emergency Walk on Air Pollution as part of 24 Hours of Reality on 21 Nov 2019**

As part of Al Gore's Climate Reality Program 24 Hours of reality, Dr Fawzia Tarannum, on behalf of TERI School of Advanced Studies organized a Climate Emergency Walk on the theme “Air Pollution” from TERI School of Advanced Studies to the Sarvodaya Vidhyalaya Vasant Kunj. The students and faculty members of TERI SAS played games and conducted awareness session for 150 students and teachers of the school.



## **3.2 Organised by other organizations**

### **3.2.1 Talk on “Growing Concerns on depleting ground water levels” by Dr. Fawzia Tarannum on 27 Jul 2019 at the HOPE Health Conclave in Gurugram**

HOPE Health Conclave is an annual function organized by HOPE Initiative as a part of month-long campaign of World Hepatitis Awareness Day (July 28). Doctors (Medical



Representatives), Corporate partners, NGO Partners, School Management, Experts from the various sectors etc. attend this seminar. The Conclave also brings to focus other health issues affecting various strata of our economy like various life style disorders afflicting our country. As part of this conclave Dr. Fawzia Tarannum delivered a talk on “Growing Concerns on depleting ground water levels” where she presented the reasons for groundwater depletion and actions people can take at the personal and community level to mitigate the issue.



### 3.2.2 TROSA 2<sup>nd</sup> Annual Learning Forum (TROSA ALF) during 21-23 Aug 2019

Transboundary Rivers of South Asia (TROSA) is a five year (2017-2021) regional water governance program working with riverine communities in the transboundary basins of the Ganges-Brahmaputra-Meghna (GBM) and Salween basins. The second TROSA ALF was organized by OXFAM in partnership with TERI School of Advanced Studies and the South Asian University at New Delhi, 21-23 August 2019.

The inaugural session was held at TERI School of Advanced Studies (TERI SAS) in which Dr. Leena Srivastava, Ex-Vice Chancellor, TERI SAS delivered the keynote address while Dr. Manipadma Dutta delivered the welcome address. During the session on “Private Sector and Water Governance” perspectives from the private sector on ways they contribute to inclusive water



governance through responsible business investments, water stewardship, dialogue with communities and role of civil society organizations was discussed in which the Coca Cola’s corporate water stewardship programme was discussed by Mr. Rajesh Ayapilla, Director-Sustainability and CSR at Coca Cola.

In the panel discussion on “Strengthening cooperation on shared waters in South Asia”, ways in which water governance mechanisms and practices could be more inclusive through participation and ownership of communities and other water users within the South Asia

region was discussed. Focus was also on ways water issues are critical to SDGs, climate actions and role of universities as knowledge platforms was discussed by Ms. Ranjana Ray Chaudhuri, from Coca Cola Department of Regional Water Studies, TERI School of Advanced Studies. Three of our students, namely, Ms. Sudeshna, Ms. Mudita and Ms. Tejaswi worked as rapporteurs.

### **3.2.3 Participation in the Fourth Indus Basin Forum in Kathmandu, Nepal on 23-24 Aug 2019**

Dr Fawzia Tarannum participated in the fourth Indus Basin Forum in Kathmandu on 23-24 Aug 2019. She was also a panellist in the panel discussion which addressed engagement and inclusiveness in research which, was jointly moderated by Darryl Day, Managing Director of ICE WaRM, and Kosar Bano, Gender Specialist with ICIMOD. The session, Engagement and Inclusiveness in Research, explored key issues on how research could be impactful through collective engagement and inclusiveness of policymakers and scientists. The session vividly brought out the need for gender disaggregated data, gender budgeting and gender impact assessment for equity and inclusiveness.



### **3.2.4 Workshop and Awareness Campaign in Kalakho and Gothda Panchayats in Dausa District, Rajasthan during 30-31 Aug 2019**

Dr. Fawzia Tarannum was the key resource person for the Workshop and Awareness Campaign in Kalakho and Gothda Panchayats in Dausa District on 30-31 Aug 2019 organised by the Centre for New Perspective. The Centre for New Perspective initiated the community engagement program for revival of Kalakho Dam by undertaking a site survey and organizing workshops and awareness campaign in Kalakho and Gothda Panchayats from 30 Aug -01 Sep 2019. Both Panchayats were found to be water stressed resulting in agricultural stress. A visit

to the Kalakho Dam site was conducted along with the Sarpanch, officials from the Irrigation Department and the Village Development Officer. It was learnt that the dam which once had water and was used for recreation and tourism dried up a decade ago due to construction of anicuts in the upstream. Resource mapping, a participatory rural exercise was conducted along with the community members to understand the topography of the region and explore the possibility of channelizing/harvesting the rainwater for revival of the dam.



### 3.2.5 The 4<sup>th</sup> IMA International Conference on Flood Risk, Swansea, UK during 12-13 Sep 2019

Dr. Sherly M. A. presented a paper on 'Fuzzy cognitive mapping of flood risk perception and adaptive capacity of slum communities over the most flood-prone city in India' at the 4<sup>th</sup> IMA International Conference on Flood Risk organised by the Institute of Mathematics and Its Applications (IMA) and hosted by the Swansea University, Wales, UK on 13<sup>th</sup> September 2019. The paper focused on evaluating slum-based adaptive capacity to flooding for selected slums in Mumbai using geospatial and mathematical techniques.



This study considered multiple relevant factors of flood risk perception and adaptive capacity (proximity to hazard, experience with floods, magnitude of exposure, awareness, literacy, employment, type of slum settlement, gender, age, access to basic amenities etc.). The differences in risk perception were investigated through fuzzy cognitive mapping (FCM). Finally, the various slum communities within each ward were categorized based on their flood risk perception and the resultant adaptive capacity. Hence, this study may be considered as a guiding tool by the local civic bodies to support slum communities on a priority-basis.



### 3.2.6 Invited session on climate change and gender on 5 Sep 2019

Dr. Anjal Prakash was invited by Dr. MCR HRD Institute (MCRHRD) for taking sessions on climate change and gender for the IAS\IPS\IRS trainees during September 2019. Dr. MCR HRD Institute is the premier administrative training institute under the Government of Telangana. The objective of the institute is to create and sustain a dedicated work force for the government. The institute specialises in conducting training using both in classroom and e-learning modes.



### 3.2.7 Second Joint Session of IPCC Working Groups I and II, and the 51<sup>st</sup> Session of the IPCC (IPCC-51) during 20-23 Sep 2019

Dr. Anjal Prakash is the coordinating lead author of the Inter-governmental Panel on Climate Change (IPCC)'s special report on the Ocean and Cryosphere in a Changing Climate. He travelled to Monaco during 20-23 September for attending the Second Joint Session of IPCC Working Groups I and II, and the 51<sup>st</sup> Session of the IPCC (IPCC-51). The session approved the 'Summary for Policymakers' of the report.



IPCC, 2019: Summary for Policymakers. In: IPCC Special Report on the Ocean and Cryosphere in a Changing Climate [H.- O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, M. Nicolai, A. Okem, J. Petzold, B. Rama, N. Weyer (eds.)]. In press.

### **3.2.8 Conference paper presentation by Ms. Ranjana Ray Chaudhuri at the International Conference GLOBEWARM '19 during 3-4 Oct 2019, Bangkok, Thailand**

Ms. Ranjana Ray Chaudhuri presented a paper on “A comparative Assessment of Uncertainty Estimates of Model Parameters corresponding to Different Rainfall Intensity Levels using Bayesian Framework”. The talk was appreciated by the expert panelists and they commented that this kind of framework is very much needed for the cities in the South and Southeast Asia.

### **3.2.9 Prof. Kansal as Panel speaker at the 10th World Environmental Education Congress (WEEC) in Bangkok, Thailand, UNESCO Bangkok on 4 Nov 2019**

Prof. Kansal was a panel speaker at the 10th World Environmental Education Congress (WEEC) in Bangkok, Thailand, UNESCO Bangkok on 4 November 2019, in cooperation with the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS). The panel discussion was on 'Education and Learning in and through Environmental Assessment: Experiences from Higher Education Institutions in Asia'.

The session brought together panelists from four institutions that are/have been involved in environmental assessment in Asia. Through the exchange of experiences and discussion on lessons learnt, the session aimed to draw insights into how higher education may be able to contribute effectively to the achievement of the UN Sustainable Development Goals.



### 3.2.10 Dr. Fawzia as invited speaker in the National Consultation on Climate Change held in XIDAS, Jabalpur on 12-13 Nov 2019

A two-day National Consultation workshop on Climate Change was organized by Indo Global Social Service Society (IGSSS) in Xavier Institute of Development Action and Studies (XIDAS) in Jabalpur on 12-13 Nov 2019 to understand the impact of climate change from local to and global perspective and to collectively review and understand the Climate Change Crisis from community members and CSOs. Dr Fawzia Tarannum participated and presented in the inaugural session of the workshop. The dialogue during the consultation focused on the following themes:



Tarannum participated and presented in the inaugural session of the workshop. The dialogue during the consultation focused on the following themes:

- Mainstreaming debate on climate change from global to local to global: Awareness on the emerging issue of climate change crisis and its impact on rural and urban areas is minimal.
- Making Public policy on climate change more inclusive: Policy is not only made by the government. Civil society organizations also play a bigger role in helping government to shape up the policy for the benefit of the common people. Policy response requires creating more inclusive and resilient rural and urban settlements that provide poor families with decent and dignified lives and livelihoods, affordable housing, access to health and education and improved water and sanitation facilities to help them deal with climate shocks.



### 3.2.11 Prof. Kansal as Invited speaker for Metabolism approach for sustainable cities. Fourth International Conference on Sustainable Energy and Environmental Challenges during 27-29 Nov 2019 at CSIR-NEERI, Nagpur, India

Prof. Kansal was an invited speaker with the topic, “Metabolism approach for sustainable cities” as part of the Fourth International Conference on Sustainable Energy and Environmental Challenges held during 27-29 November 2019 at NEERI Nagpur.



### **3.2.12 Dr. Fawzia as invited speaker in IV- International Conference on-Sustainable Energy & Environmental Challenges (IV-SEEC)” during 27-29 Nov 2019 at CSIR-NEERI, Nagpur, India**

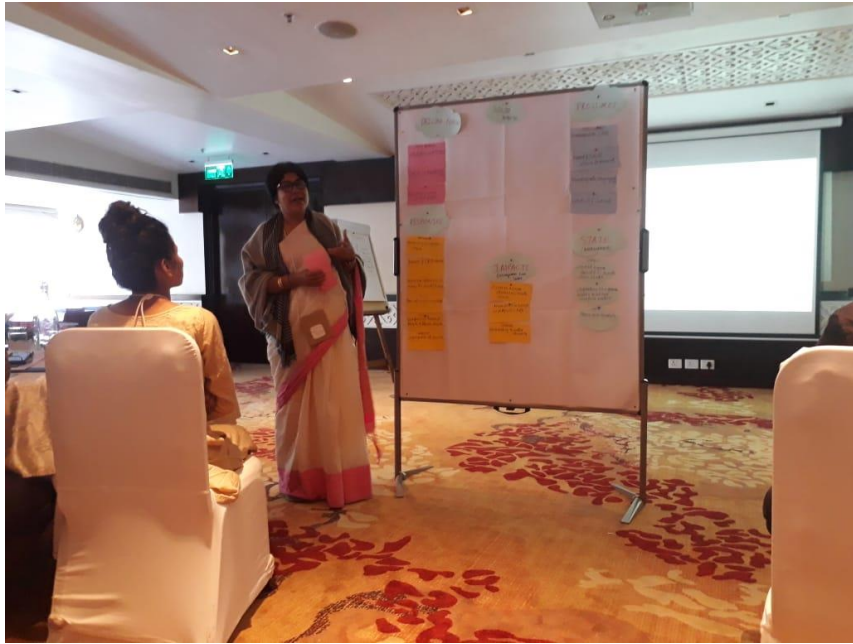
Dr. Fawzia Tarannum was an invited speaker in the IV- International Conference on-Sustainable Energy & Environmental Challenges (IV-SEEC)” during 27-29 November 2019 at CSIR-NEERI, Nagpur, India. She spoke on ‘Inclusive governance for water-energy-food nexus sustainability’. The nexus approach to governing the three critical domains, namely, water, energy and



food, dates to the World Economic Forum in 2008, where the global challenges associated with economic development were first viewed from the water-energy-food nexus perspective. The interconnectedness of these sectors can be vividly witnessed in various developmental initiatives and have resulted in significant water, food and energy security issues both in global south and north. The impacts of water-energy-food insecurity are disproportionately felt by different sections of the society depending on the region, socio-economic status, and gender. Empirical evidence reveals that the threat associated with the variability are contextual, and equitable and sustainable governance demands a multi-stakeholder approach, which is characterized by an array of crosscutting social, economic, political and environmental variables.

### **3.2.13 Participation in the workshop for the trainers of National Mission for Clean Ganga during 3-4 Dec 2019, Dehradun and 6-7 Dec 2019, Lucknow**

As part of the National Mission for Clean Ganga (NMCG), GIZ along with NMCG organised a workshop for training of the trainers for river basin management of Ganga. It was a 2-day workshop held at the Sheraton Hotel, Dehradun during 3-4 Dec 2019 in which experts from various organisations participated and share their knowledge. The session dealt with holistic approach to river basin management that included scientific, social, economic and governance aspects. Ms. Ranjana Ray Chaudhuri and Dr. Sherly M. A. participated in the workshop in Dehradun, while Dr. Fawzia Tarannum participated the same workshop during 6-7 Dec 2019 in Lucknow.



### **3.2.14 Ms. Ranjana Ray Chaudhuri as panel speaker for the session on “River Restoration and Conservation” at Vigyan Bhawan, Delhi under the National Mission for Clean Ganga during 7-8 Dec 2019**

Ms. Ranjana Ray Chaudhuri attended the session organised by IIT Kanpur under the aegis of NMCG during 7-8 Dec 2019. Dr. Sherly M. A. also attended the session. The session was about inclusion of cities in the restoration and conservation processes of rivers as they produce major share of waste water.





### **3.2.15 Panel speaker by Dr. Sherly M. A. on “A glimpse of Water Stress: Mumbai vs Delhi” by Dr. Sherly M. A. on 18 Dec 2019 at the 11th GRIHA Summit, IHC, New Delhi**

GRIHA or the Green Rating for Integrated Habitat Assessment, under the umbrella of TERI and UNSW organised their 11<sup>th</sup> GRIHA Summit during December 17-18, 2019 with the theme, ‘Approach to Integrated Sustainability’. Dr. Sherly delivered a presentation on “A glimpse of Water Stress: Mumbai vs Delhi” in the plenary session of Water Challenge. The topic dealt with the water stress experienced by both the cities with contradicting geographical and climatic features. The talk emphasised on the importance of sustainable water conservation strategies including rainwater harvesting and sewage treatment.



### **3.2.16 Conference paper presentation by Dr. Sherly M. A. at the International Conference HYDRO 2019 during 18-20 Dec 2019, Hyderabad, India**

The HYDRO International conference is being held every year in India under the aegis of the Indian Society of Hydraulics (ISH). The HYDRO conference will mainly focus on various challenges faced in the Water Resources, Hydrology, Coastal Engineering and Environment in the changing scenario and provide viable solutions. HYDRO 2019 was organised by the Department of Civil Engineering, Osmania University, Hyderabad.

A paper on “Waterscapes through Multi-stakeholder Approach for a Water-stress Region in Delhi NCR, India, co-authored by Ms. Ranjana Ray Chaudhuri, Dr. Sherly M. A. and Dr. Fawzia Tarannum was presented by Dr. Sherly M. A. on 20<sup>th</sup> Dec 2019. The paper mainly focussed on the waterscapes approach and participatory water management. It also emphasised on the scientific aspects both water quantity and quality for the study area within Delhi NCR where salinity is a grave concern.



## 4 Projects (Ongoing/Completed)

### 4.1 Project Guru-Jal with District Administration of Gurugram, June 2019

The project aims at recommendations for integrated water and wastewater management for selected villages and municipal council of Sohna block. The various objectives include review of the current status of the water projects, comprehensive mapping and qualitative and quantitative analysis of drinking water, surface water, groundwater and wastewater, geospatial analysis of cropping pattern and soil health along with recommendations on efficient water use for improved crop production and assessment of the feasibility of various sustainable watershed management practices and recommendations for a conjunctive use of surface and groundwater. The field survey and analyses have been completed in Sohna MC, Sohna Rural, Ullawas, Ghangola and Gairatpur Bas.



Multiple presentations and interim report have been submitted on the progress of the project. The project captures the changing waterscapes and landuse pattern in the suburban and peri-urban villages of Gurugram.



## 5 Field Based Learning



### 5.1.1 Field trip to Rajokri Pond, Old Gurugram Road, Delhi on 3 Aug 2019

Rajokri is one among the multiple lakes that Delhi government has planned to revive as part of their water conservation initiatives. In the lake rejuvenation project at Rajokri, the lake is filled with treated sewage of the locality. A visit was made to the site on 3 August 2019 with the students of both 2018 and 2019 batches accompanied by the faculty members, Dr. Fawzia Tarannum and Ms. Ranjana Ray Chaudhuri.





The students learned about the various treatment methods, economic and technical feasibility along with the ongoing monitoring and maintenance. As part of the visit, the students were instructed to prepare a report on the existing issues, reasons and potential solutions, for which they submitted a detailed report of the visit.

## 5.2 Academic field trips to Orchha, Madhya Pradesh for the batch 2019-2021 during 16-19 Oct 2019

Dr Fawzia Tarannum accompanied the student group who visited Orchha in Madhya Pradesh for the academic field trip in the first semester. As part of the trip they visited the following project sites of TARAGRAM (a Development Alternative initiative):



- Gaushala: A shelter created for 100 abandoned cows and governed by an all women society. The Gaushala uses the cow dung for producing biogas which provides electricity to the setup and manure which they sell for INR10 per kg.
- Poultry Farm and Drinking Water Project: The government of Madhya Pradesh is providing support to the Scheduled Tribe community in the region who are landless for setting up poultry farms. The village also had community led drinking water supply through piped network in stand posts installed at regular intervals.
- Handmade paper by recycling waste cloth pieces
- Tiles from quarry dust and fly ash from thermal power plants
- Solar village



## 6 Research Publications

**Kansal A.** (2019). Invited speaker- *Metabolism approach for sustainable cities*. Fourth International Conference on Sustainable Energy and Environmental Challenges. 27-29 November 2019. NEERI Nagpur.

Mousumi Ghosh, **Sherly M. A.**, and Karmakar S. (2019). *Flood Risk Assessment under Various Socio-economic Scenario*, ISH-HYDRO 2019 International Conference, Osmania University, India, 18-20 December 2019.

**Kansal A.** (2019). Panel Speaker- *Education and Learning in and through Environment Assessment: Experiences from Higher Education Institutions in Asia*. In 10<sup>th</sup> World Environmental Education Congress, Nov 3-7, 2019, Bangkok, Thailand. Organized by UNESCO.

**Chaudhuri, R. R., Sherly M. A., and Tarannum F.** (2019). *Waterscapes through Multi-stakeholder Approach for a Water-stress region in Delhi NCR, India*, ISH-HYDRO 2019 International Conference, Osmania University, India, 18-20 December 2019.

Sen S. M., **Kansal A.\*** (2019). *Integrating value-chain approach with participatory multi-criteria analysis for sustainable planning of a niche crop in Indian Himalayas*. Journal of Mountain Science 16(10). DOI: <https://doi.org/10.1007/s11629-019-5437-4>.

**Chaudhuri, R. R.,** Sharma, P. (2019). *A comparative assessment of uncertainty estimates of model parameters corresponding to different rainfall intensity levels using Bayesian framework*, 2<sup>nd</sup> International conference on Global Warming and Climate Change 2019, 3-4 October 2019, Bangkok.

Goswami, A., **Chaudhuri, R. R.** (2019). *CityRehydrate - Comprehensive toolkit for sustainable city water projects*, Waterfuture Conference – Towards a sustainable water future, September 24-27, 2019, Bangalore, India.

**Sherly, M. A.\***, Janadri, K. K., Karmakar, S. (2019). *Fuzzy cognitive mapping of flood risk perception and adaptive capacity of slum communities over the most flood-prone city in India*, 4th IMA International conference on Flood Risk (IMA 2019), 12 - 13 September 2019, Swansea University, UK.

Resurrección, B. P., Goodrich, C. G., Song, Y., Bastola, **A., Prakash, A.**, Joshi, D., Liebrand, J., Shah, S. A. (2019). *In the Shadows of the Himalayan Mountains: Persistent Gender and Social Exclusion in Development*, In The Hindu Kush Himalaya Assessment (pp. 491-516). Springer, Cham.

Goodrich, C. G., **Prakash, A.**, & Udas, P. B. (2019). Gendered vulnerability and adaptation in Hindu-Kush Himalayas: Research insights. Environmental Development, 31, 1-8.

Dilling, L., **Prakash, A.** Zommers, Z., Ahmad, F., Singh, N., de Wit, S., Nalau, J., Daly, M., Bowman, K. (2019). *Is Adaptation Success a Flawed Concept?* Nature Climate Change. July 22.



Goodrich, C. G., **Prakash, A.**, Udas, P. B. (2019). *Gendered Vulnerability and Adaptation in Hindu-Kush Himalayas: Research insights*, Environmental Development. Volume 31, September 2019, Pages 1-8. DOI - <https://doi.org/10.1016/j.envdev.2019.01.001>.

Acharya, A., **Prakash, A.** (2019). *When the river talks to its people: Local knowledge-based flood forecasting in Gandak River basin, India*, Environmental Development. Volume 31, September 2019, Pages 55-67. <https://doi.org/10.1016/j.envdev.2018.12.003>

Dilshad, T., Mallick, D., Udas, P. B., Goodrich, C. G., **Prakash, A.**, Gorti, G., Bhadwal, S. et al (2019). *Growing social vulnerability in the river basins: Evidence from the Hindu Kush Himalaya (HKH) Region*. Environmental Development. Volume 31, September 2019, Pages 19-33. <https://doi.org/10.1016/j.envdev.2018.12.004>.

Rao, N., Mishra, A., **Prakash, A.**, Singh, C., Qaisrani, A., Poonacha, K., Vincent & Bedelian, C. (2019). *A qualitative comparative analysis of women's agency and adaptive capacity in climate change hotspots in Asia and Africa*. *Nature Climate Change*, 1-8.

Dasgupta, P, Sahay S, **Prakash, A.** and Lutz, A. (2019). *Cost effective adaptation to flood: sanitation interventions in the Gandak river basin, India*. *Climate and Development*, DOI: 10.1080/17565529.2019.1682490.

Goodrich, C. G., **Prakash, A.**, & Udas, P. B. (2019). Gendered vulnerability and adaptation in Hindu-Kush Himalayas: Research insights. *Environmental Development*, 31, 1-8.

Lisa Dilling, **Anjal Prakash**, Zinta Zommers, Farid Ahmad, Nuvodita Singh, Sara de Wit, Johanna Nalau, Meaghan Daly & Kerry Bowman (2019). *Is Adaptation Success a Flawed Concept?* *Nature Climate Change*.

### Resource book

Nepal, S., Shrestha, A. B., Goodrich, C. G., Mishra, A., **Prakash, A.**, Bhuchar, S., Vasily, L. A., Khadgi, V. & Pradhan N. S. (eds.) (2019). [\*Multi-scale Integrated River Basin Management from a Hindu Kush Himalayan Perspective\*](#), Resource Book, ICIMOD, Kathmandu

### Special Achievements

Prof Kansal has been given an honorary position to Lead Water Thematic Group by Himalaya University Consortium, ICIMOD, Nepal.

Dr. Anjal Prakash is involved in a special issue in peer reviewed journal – Environmental Development (Elsevier) focusing on gendered vulnerabilities. The special issue titled - *Conceptualizing and Contextualizing Gendered Vulnerabilities to Climate Variability in the Hindu Kush Himalayan Region* has been published. One can access the special issue by clicking [here](#).

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Dr. Anjal Prakash has resigned from the department effective from January 2020 and joined as the Research Director and Associate Professor at the Indian School of Business. We wish him a great success in all his future endeavours!