

January 2022

Progress Report of Coca-Cola Department of Regional Water Studies

January 1- December 31, 2021



Highlights

This report gives information related to the activities of the Department carried out during January-December 2021. These activities include:

- Academic activities
 - Online Classes
 - Internships
 - Major Projects
 - Placements
 - PhD scholars graduated
- Admissions
- Certifications
- Events/Seminars/Workshops
- MoU signed
- Projects (Ongoing/Completed)
- Research Publications

1 Academic Activities

The campus is currently functional for all administrative purposes. All academic activities of the current semester are in hybrid mode – both on-campus and online. The students are allowed to attend on-campus classes while they have the option of online classes as well through MS Teams platform.

1.1 Online Classes

The department, aligned with our university guidelines, has adopted a hybrid model that allows flexibility in attending the classes to the students either on-campus or online mode. The class rooms are equipped with required facilities (cameras and projectors) to ensure smooth delivery of lectures through hybrid mode.

1.2 Special Achievements

Mr. Sandipan Samanta from 2019 batch (WREM) received invitation from Veolia Digital Summer School 2021. During Summer School, he could meet their experts and discover Veolia's business with young talents who come from all over the world.

1.3 Internships

Many students from 2020 batch have secured internships with well-known organisations, while others have applied and are in the process of interview and selection.

The following students have secured the prestigious C4Y WATER CHAMPIONS YOUTH FELLOWSHIP 2021:

- 1) Anubhuti Sekhar
- 2) Manika Saxena
- 3) Ayush Tyagi
- 4) Anil Kumar Maddipatla

The first three students have accepted this fellowship and started their internships with the allotted organisations.

5) Kasturi Basu – Royal Haskoning

1.4 Placements

The current status of the placement for 2019 batch is shown below:

Sl. No.	Student	Degree	Organisation & Designation
1	Shriyans Chaturvedi	MSc	Project Associate, Earthwatch
2	Bhuyashee Rajkumari	MSc	Preparing for UGC NET
3	Lipi Gandhi	MSc	Junior Analyst- Research, ISS ESG
4	Prutha Machiwal	MSc	Consultant, SG Analytics
5	Aayush Saigal	MTech	Consultant, Development Alternatives
6	Ekansha Khanduja	MTech	Researcher-Geoinformatics and Water Management, Development Alternatives
7	Preethi Vasudevan	MTech	Junior Technical Officer, Wetlands International South Asia
8	Niharika Labhsetwar	MTech	Consultant, KPMG
9	Sandipan Samanta	MTech	Consultant, Royal Haskoning
10	Sougata Bera	MTech	Open to jobs

2 PhD Scholars Graduated

The following research scholars from our department received their PhD degree during the convocation held on November 8, 2021:

Name	Supervisor/s	Thesis Title
Ranjana Ray Chaudhuri	Prof. Prateek Sharma	Extreme Meteorological Events in Megacities and their implication on Blue Green Urban System - An Application to Delhi, India
Snigdha Goel	Prof. Arun Kansal	Assessment of decentralized sewage treatment systems as a Phosphorus supply option for agriculture

3 Admissions

In 2021-2023 batch, a total of 12 students have taken admission for Master's programme out of which 4 students are in MSc while 8 in MTech programme.

S. No.	Name	Course
1	Bhumika Khatreja	M.Sc.
2	Kalpana Patel	M.Sc.
3	Rajeev Kanachanda Bopaiah	M.Sc.
4	Karamveer Yogendrasinh Jadeja	M.Sc.

5	Gaurav Fouzdar	M. Tech
6	Mohammad Imroz	M. Tech
7	Adeel Ahmed Siddiqui	M. Tech
8	Sayyad Sahil Ahmed	M. Tech
9	Yukti Sharma	M. Tech
10	Aditya Nath	M. Tech
11	Bharg Modi	M. Tech
12	Chetan Malusare	M. Tech

Five PhD scholars also have joined the department as follows:

S. No.	Name	Full time/ Part time
1	Deepak Virmani	Part time
2	Satyajit Dwivedi	Part time
3	Zeenat Niazi	Part time
4	Devendra Narayan Nimbokar	Part time
5	Himani Malhotra	Full time

4 Certifications

4.1 EIA-A requirement beyond Clearance organized by Centre for Science and Environment

Dr Fawzia Tarannum successfully completed an online course on EIA-A requirement beyond Clearance organized by Centre for Science and Environment, New Delhi from July 1- 10 2021.



4.2 Online FDP on Artificial Intelligence and Machine Learning

Dr Sherly M A successfully completed an online FDP on Artificial Intelligence and Machine Learning organized by the Centre for Continuing Education from November 22- 26, 2021.



5 Events/Seminars/Workshops

5.1 Organised by the department

5.1.1 SWASH 2021 - Online training in "Digital Tools for Water Audit" during 22 & 23 March 2021

As part of the World Water Day 2021, the Coca-Cola Department of Regional Water Studies at the TERI School of Advanced Studies conducted SWASH (Save Water Save Humanity) 2021 with a two-day online training programme in collaboration with the National Water Mission, Ministry of Jal Shakti and with the support of TATA STEEL



Ltd., to build the capacity of various stakeholders in managing water demand through water pricing and using digital tools for measuring the urban water and the agriculture water use. Prof. Kansal delivered the welcome address followed by Mr. Pankaj Satija, Chief Regulatory Affairs, Tata Steel and Sh G. Asok Kumar, IAS, Additional Secretary and Mission Director, National Water Mission, Ministry of Jal Shakti.

Youtube link: <https://www.youtube.com/watch?v=aj-yVYubhM4>

The following faculty members presented various topics on water audit and management:

- Urban water audit and AWWA software by Ms. Ranjana Ray Chaudhuri
- Agricultural Water Management in India and FAO's CROPWAT software by Dr. Sherly M. A.
- Pricing instruments for sustainable demand management by Dr. Sukanya Das.

- There was an overwhelming registration and participation with e-certificate awarded to all successful participants. The participants included Youth, Practitioners, Policy and decision makers, Representatives from Civil Society Organizations, Corporate, Academia and NGO.

5.1.2 Wednesdays For Water

The Wednesdays for Water (WfW) communication series has been initiated by the water enthusiasts from the Coca Cola Department of Regional Water Studies at the TERI School of Advanced Studies, TISS, WICCI, Fluxgen, Counterview and youth representatives from India. The objective of the initiative is to engage in conversation with water experts, grassroots practitioners, policy makers and students to explore the multi-dimensional issues associated with water and the associated solutions. We have earmarked the second and fourth Wednesdays of every month for the interactive discussion, the first Wednesday for National Level Quiz and the third and fifth (if it is there) for other awareness activities with the community members.

Dr Fawzia Tarannum moderated a session on 09 June 2021 on 'Ocean-Life and Livelihoods' which was organised to observe the World Oceans Day. Swati Ganeshan, Area Convener & Fellow, Centre for Resource Efficiency & Governance, TERI, Elsie Gabriel, Ambassador for India Ocean Quest Global International along with a youth discussant Parth Tandon, a student from the TERI School of Advanced Studies (TERI SAS) were invited to discuss the state of the ocean and its impact on people's life and livelihood. The conversation was converted into an article and published in Counterview (<https://www.counterview.net/2021/06/wednesdaysforwater-pollution-climate.html>).



5.1.3 Invited Speaker in the Wednesdays for Water on Sustainable Water Management – Rural Urban Continuum on 28 July 2021

Dr Ranjana Ray Chaudhuri was invited by the Wednesdays for Water, a communication series initiated by citizen collective and water enthusiasts from TERI School of Advanced Studies, TISS, WICCI, Fluxgen, Counterview and youth representatives from India. The session was moderated by Dr. Fawzia Tarannum. The YouTube recording of the session can be viewed at <https://www.youtube.com/watch?v=zQ28e8ic6MY>. An article on the session has also been published in counterview

<https://counterview.org/2021/09/27/wednesdays-for-water-urban-rural-water-sustainability-faces-multiple-challenges-on-the-ground/>



5.1.4 India Green University Network Stakeholder Dialogue on 17 September 2021

Dr Fawzia Tarannum organized the India Green University Stakeholder Dialogue on 17 September 2021 as part of the UNEP sponsored project. The program was attended by 148 participants from 23 Higher education institutes and 12 NGOs/Think Tanks in India. The vision of the dialogue was to enable higher education institutes to become key enablers in India's sustainability journey and provide them with a platform to synergize and work towards a common goal of building a greener society. The resources related to the dialogue including the report can be accessed at https://www.terisas.ac.in/unep_yea/#resources



Friday, 17 September 2021
4:00 PM (IST)

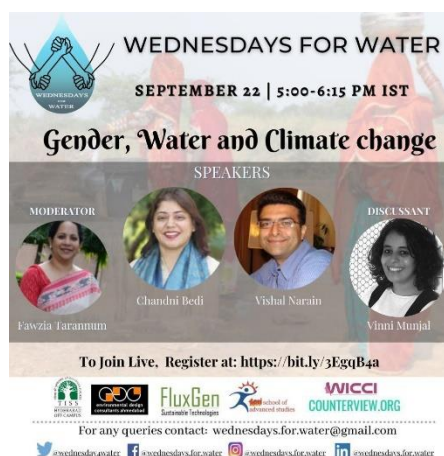
STAKEHOLDERS' DIALOGUE
FOR ESTABLISHING
INDIA GREEN UNIVERSITY NETWORK (IGUN)

Speakers

Dr. Eklabya Sharma, Vice-Chancellor, TERI School of Advanced Studies	Mr. Atul Bagai, Country Head, UNEP	Prof Anil Sahasrabudhe, Chairman AICTE	Mr. Sam Barratt, Chief of YEA, UNEP
Mr. Iain Patton, CEO, EAUC, the Alliance for Sustainability Leadership in Education	Mr. Abhijit Paul Zacharia, Program Manager, Sustainability & Education, WIPRO Foundation	Prof. Arjen Wals, Wageningen University	Dr. Debra Rowe, President of the U.S. Partnership for Education for Sustainable Development and Senior Advisor, AASHE
			Ms Carina Mutschele, Youth and Education Officer, UNEP

5.1.5 Moderator at the Wednesdays for Water conversation on Gender, Water and Climate Change on 22 Sep 2021

Dr. Fawzia Tarannum moderated the session on Gender, Water and Climate Change on 22 Sep 2021 in the Wednesdays for Water (WfW) conversation series. WfW was instituted in April 2021 with the objective to engage in conversation with water experts, grassroot practitioners, policy makers and youth to explore the complex-intertwined issues associated with water and explore possible solutions. The discussion focussed on the SDGs 5, 6, and 13 and how these crosscut with each other as well as with other 14 SDGs. The recording of the session can be viewed at https://www.youtube.com/watch?v=zFPAI_NpCnC.



WEDNESDAYS FOR WATER
SEPTEMBER 22 | 5:00-6:15 PM IST

Gender, Water and Climate change

SPEAKERS

MODERATOR Fawzia Tarannum	Chandni Bedi	Vishal Narain	DISCUSSANT Vinod Munjal
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To Join Live, Register at: <https://bit.ly/3EqB4a>

Partners: TERISA, FluxGen, WICCI, COUNTERVIEW.ORG

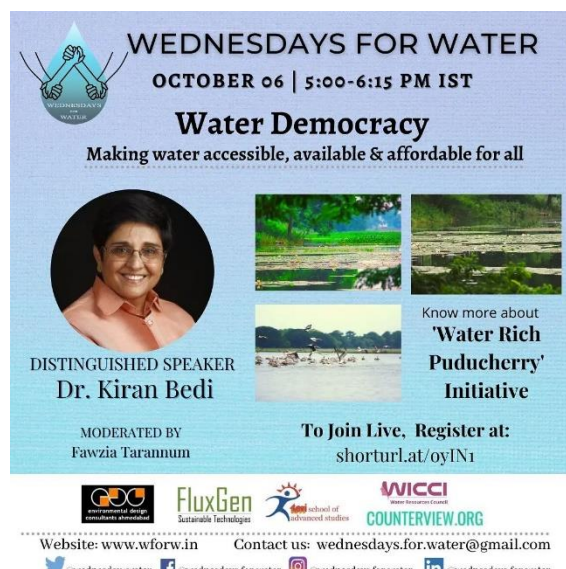
For any queries contact: wednesdaydays.for.water@gmail.com

Twitter: @wednesdaydays, Facebook: @wednesdaydays.for.water, Instagram: @wednesdaydays.for.water, LinkedIn: @wednesdaydays.for.water

5.1.6 Dr Fawzia Tarannum moderated the distinguished talk by Dr Kiran Bedi on Water Democracy in the Wednesdays for Water Communication Series on 06 Oct 2021

The constitution of India defines democracy as government 'Of the people, for the people and by the people'. Traditionally civilizations flourished around rivers. Water was considered as a community resource, meant for all and managed by the public. With the advent of the piped water supply and water becoming a state subject, people not only distanced themselves from the resource, the indiscriminate abuse of

www.terisas.ac.in



WEDNESDAYS FOR WATER
OCTOBER 06 | 5:00-6:15 PM IST

Water Democracy
Making water accessible, available & affordable for all

DISTINGUISHED SPEAKER
Dr. Kiran Bedi

MODERATED BY
Fawzia Tarannum

To Join Live, Register at:
shorturl.at/oyTN1

Partners: TERISA, FluxGen, WICCI, COUNTERVIEW.ORG

Website: www.wforw.in Contact us: wednesdaydays.for.water@gmail.com

Twitter: @wednesdaydays, Facebook: @wednesdaydays.for.water, Instagram: @wednesdaydays.for.water, LinkedIn: @wednesdaydays.for.water

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the water, also begun. As a result, we have lost 1000s of lakes, ponds, wetlands, and springs and many of our rivers are just about sewers. We have been talking about public participation since The Aarhus Convention in adopted 1998 that links environmental rights and human rights and government accountability and environmental protection. It establishes that sustainable development can be achieved only through the involvement of all stakeholders and focuses on interactions between the public and public authorities in a democratic context. The Puducherry water rich model, a project undertaken under by Dr Kiran Bedi when she was the governor has been considered a good example of water democracy. Here public participation is not about tokenism or placation but about inclusivity and community empowerment. The recording can be viewed at:

<https://www.youtube.com/watch?v=v0luq-sdqYs&t=2s>

5.1.7 Twitter Chat for Youth on Charting Sustainability Pathways organized as part of EU-SWITCH Asia UNEP Project on 29 Oct 2021

The involvement of youth is a topic that is being increasingly brought up in the global arena with regard to environmental issues. Yet, there remains a lack of adequate inclusivity for their diverse opinions and personal experiences. To bridge this gap and start a dialogue for the youth, EU-SWITCH Asia in partnership with UNEP and TERI SAS conducted a tweet chat around causes close to young people's hearts.

The tweet chat was titled Youth on Charting Sustainability Pathways and weaved a conversation among youth beginning from their general awareness and sensitivity towards the environment and then moved on to understanding what drives them to make sustainable changes in their daily lives.



5.1.8 Online Youth Dialogue on Sustainable Lifestyles in collaboration with Symbiosis Pune on 08 Nov 2021, Hybrid Youth Dialogue on Sustainable Lifestyles in TERI SAS Campus on 10 Nov 2021

TERI SAS in association with EU-Switch Asia and UNEP organized two Youth Dialogues to understand the youth lifestyle decision making and challenges on 08 Nov and 10 Nov 2021. The objectives of the dialogue were to:

- Understand youth perception of sustainable lifestyle choices and how they relate this to their daily actions.
- Document what influences their decision making in terms of the driving forces of youth consumption and especially the influence of media and globalization in shaping their aspirations and values.



- Recognition of the relation between lifestyle/ consumption pattern and environment/ human rights/social issues
- Understand barriers in adoption and drivers of change
250+ youth joined the dialogue from various parts of India. The recordings of the dialogue can be viewed at

Online Youth Dialogue on Sustainable Lifestyle Pune

(https://www.youtube.com/watch?v=nLOusV0Qc_o&t=1s), Youth Dialogue on Sustainable Lifestyle, Delhi (<https://www.youtube.com/watch?v=dmbFlysIC7A&t=1s>, <https://www.youtube.com/watch?v=XzKhYWobfgk&t=212s>)

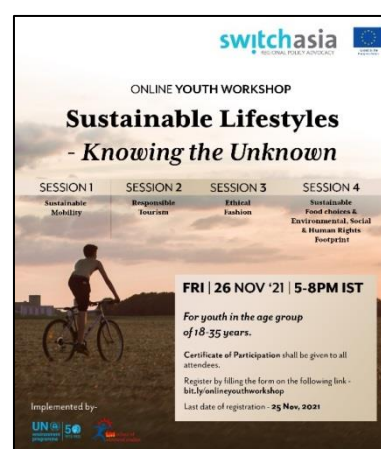
5.1.9 Twitter Chat on Youth on overcoming barriers to making sustainable transitions organized as part of EU-SWITCH Asia UNEP Project on 24 Nov 2021

The shift to a more sustainable future remains a pertinent issue and must be addressed in a multi-faceted manner. The identification of issues in the physical environment must also be accompanied by understanding the tangible and invisible barriers that hinder people today. Through this tweet chat, we aim to understand issues Indian youth face in their sustainability journey and what they feel must be changed to overcome them.



5.1.10 Online Workshop on Knowing the Unknown organised on 26 Nov 2021

A youth workshop was conducted on the four thematic areas to share practical examples of Responsible tourism, Sustainable Mobility, Sustainable food and Ethical Fashion by TERI SAS as part of the EU-SWITCH Asia Project on Regional Policy Advocacy Component. The aim of the workshop was to tap into four critical areas of consumption, namely, **Food, Fashion, Transportation and Tourism**, to raise awareness on conscious consumerism among youth while also understanding the existing bottlenecks that they face.



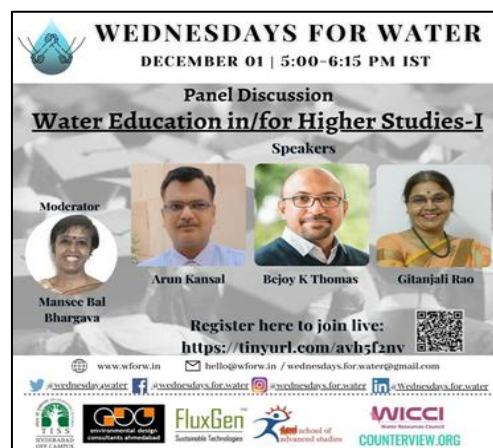
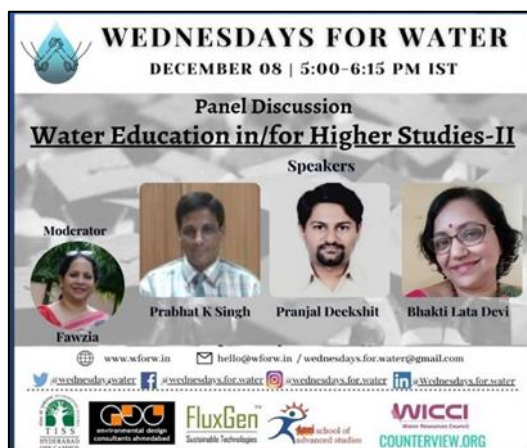
5.1.11 Water Education in/for Higher Studies -I organized by Wednesdays for Water on 01 Dec 2021

Prof Arun Kansal from the department was one of the Panelists in the discussion on Water Education in/for Higher Studies. He shared the findings of his published work in Water Policy and stated that water is primarily viewed using a technical lens and continues to be part of Engineering Programmes in India. He stressed upon the interdisciplinarity of water and the need for holistic learning.

5.1.12 Water Education in/for Higher Studies -II organized by Wednesdays for Water on 08 Dec 2021

Dr Fawzia Tarannum moderated the second part of the panel discussion on Water Education in/for Higher Studies. Along with discussions around how can water education become more holistic, the

employability options, the skills required to tackle the current water issues, pedagogy, the session also reflected on the New Education Policy 2020 and the emphasis on environmental education.



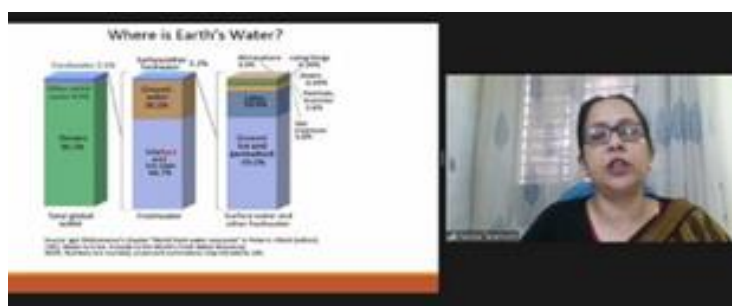
5.1.13 Online Workshop on Building Sustainable Campus on 17-18 Dec 2021 as part of the UNEP's LBGN Programme

Education is not about “doing as I say” but learning to “do as I do” – given that what we do is pivotal to how the world’s communities deal with the multiple challenges of climate change, resource efficiency, biodiversity protection and management of our growing legacy of waste and environmental pollution. Higher Education Institutions (HEIs) can be drivers of transformational change by adopting simple nudges to promote green behaviour. On 1st September 2020, the UN Environment Programme (UNEP) launched The Little Book of Green Nudges", which aims to inspire up to 200 million students around the globe to adopt environmentally friendly habits and greener lifestyles. The objective of the workshop was to build capacities of Higher Education Institutions to promote sustainable behavior in campuses and beyond in water harvesting and conservation, sustainable food, energy efficiency and renewable and waste management. The resources related to the workshop can be accessed at: https://www.terisas.ac.in/unep_yea/lbgn.php#resources

5.2 Organised by other organizations

5.2.1 Invited Speaker at the Sashakt Bharat Ambassador Program on 03 Jan 2021

As part of the SB Ambassador, Dr. Fawzia Tarannum spoke on Building Capabilities for Water Governance in India on 03 Jan 2021.



5.2.2 Panel Chair for 'ICITES-2021' during Jan 9-11, 2021

Dr. Sherly M. A. chaired a panel of the 2nd International Conference on Innovative Trends in Engineering for Sustainability (ICITES 2021) during January 9-11, 2021 organised by ToCh Institute of Science & Technology, Cochin, Kerala.

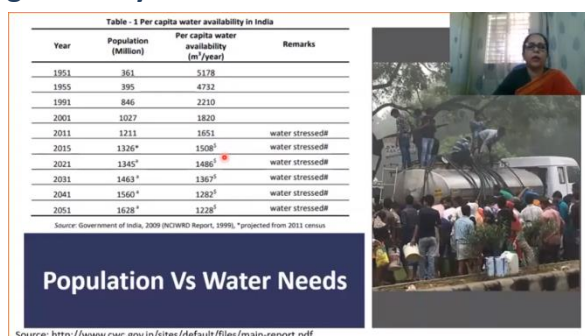
5.2.3 Training for 45 Loreto and CJ Schools on Hidden Water and Gender Equality, 16-17 Jan 2021

Dr Fawzia Tarannum, with the support of the students of the TERI SAS conducted training program for the IX and the XI grade students from 45 Loreto and CJ Schools across India and Nepal on the issues of hidden water in food, clothes and other consumer products and gender equality for sustainable development. This was part of the School University Network (SUN) initiative of the TERI SAS. The engagement was conducted to observe the 1st Mary Ward JPIC South Asia General Meet which took place on a virtual platform from 15th to 17th January 2021.



5.2.4 Training for the 650 Nehru Yuva Kendra District Youth Coordinators in Rainwater Harvesting from 25 Jan -06 Feb 2021 organised by the National Water Mission

Dr Fawzia Tarannum volunteered to conduct 10 training programs for 650 NYK District Youth Coordinators from pan-India. The training was organised by the National Water Mission, Ministry of Jal Shakti as part of the Catch the Rain Program. <http://nwm.gov.in/?q=training-session-nyks-officials-isa-2-catch-rain>



5.2.5 Invited lecture on 'Water sustainability assessment tools for urban areas' on Feb 17, 2021

Prof. Arun Kansal delivered an invited lecture on Water sustainability assessment tools for urban areas on Feb 17, 2021 in DST sponsored Advance Training Programme on Water Resources Management and Climate Change Studies; hosted by Sikkim University.

5.2.6 Invited lecture on 'Technology and Governance of Municipal Solid Waste Management' on Feb 24, 2021

Prof. Arun Kansal delivered an invited lecture on Technology and Governance of Municipal Solid Waste Management on Feb 24, 2021 in AICTE Training and Learning FDP on Waste Management: Challenges and Opportunities, hosted by Aligarh Muslim University.

5.2.7 Invited lecture on 'Catch the Rain where it falls, when it falls' on March 3, 2021

Ms. Ranjana Ray Chaudhuri delivered an invited lecture on "Catch the Rain where it falls, when it falls" at state level workshop organized by Nehru Yuva Kendra Sangathan, Delhi centre on 3 March, 2021 under Ministry of Jal Shakti Ministry initiative.



5.2.8 Invited lecture on 'Sahi Fasal' on March 4, 2021

Ms. Ranjana Ray Chaudhuri delivered an invited lecture on "Catch the Rain where it falls, when it falls" at state level workshop organized by Nehru Yuva Kendra Sangathan, Delhi centre on 3 March, 2021 under Ministry of Jal Shakti Ministry initiative.

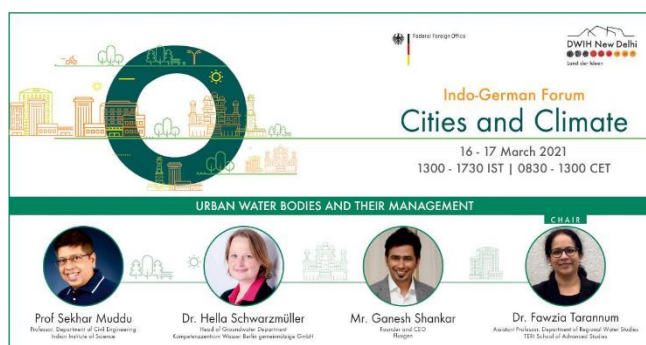
5.2.9 Invited Speaker at the Water Policy Center on International Women's Day, 08 March 2021

Dr. Fawzia Tarannum addressed the members, young volunteers, and stakeholders of the Water Policy Center, who are in the main women in water stressed regions of Maharashtra, on the occasion of Women's Day on March 8th, 2021. The Water Policy Center (WPC) Aurangabad, MH, India is an independent not-for-profit Think Tank established in 2014 under the aegis of the Venuganga Foundation to present constructive policy proposals and scientific research on water and sustainable development.



5.2.10 Chairing of Session on Urban Water Bodies and their Management at the Indo German Forum on Cities and Climate Change on 17 March 2021

Dr Fawzia Tarannum chaired the session on Urban Water Bodies and their Management at the Indo German Forum on Cities and Climate Change on 17 March 2021. The session focussed on the measures that can be undertaken to address our urban water issues, given the monumental changes that we have done to our urban landscape.



5.2.11 Invited Speaker by the Economics Department, St Xavier's College Mumbai on 22 March 2021 to speak on Role of women in fighting climate change

Dr. Fawzia Tarannum was invited by the Economics department of the St. Xavier's College, Mumbai to deliver a talk on Role of women in fighting climate change during their National Conference on "Gender and Economics: beyond theory".



5.2.12 Invited Speaker by Climate Reality India on the World Water Day on 22 March 2021

Dr Fawzia Tarannum was invited by the Climate Reality India to speak on the Water Issues in India on the occasion on the World Water Day on 22 March 2021.



5.2.13 Panelist in the panel discussion on Climate Migration in Indian Sub-Continent organised by IMPRI and NIDM on 23 March 2021

Dr Fawzia Tarannum was a panelist in the panel discussion on Climate Migration in Indian Sub-Continent organised by IMPRI and NIDM on 23 March 2021. She shared her thoughts on the impact of migration on women.



5.2.14 Invited Speaker at School of Planning Architecture and Design Excellence, Hindustan Institute of Technology and Architecture at the FDP on Revitalising Urbanism and Resilient Architecture on 24 March 2021

Dr Fawzia Tarannum was invited to speak on "Blue and Green Infrastructure in Resilience" by the School of Planning Architecture and Design Excellence, Hindustan Institute of Technology and Architecture at the FDP on Revitalising Urbanism and Resilient Architecture on 24 March 2021.

5.2.15 Panelist in the session on Efficient Water Management during the SMART Cities Expo in Pragati Maidan on 26 March 2021

Dr Fawzia Tarannum was one of the panelists in the session on Efficient Water Management during the SMART Cities Expo in Pragati Maidan on 26 March 2021. She spoke on the urban water crises and the need for revival of the blue green



infrastructure. She also discussed the gendered impact of non-availability of water.

5.2.16 Guru Jal Society Capacity Development Programme on 10 Apr 2021

As part of the Capacity Development Programme, 3-Day sessions were organised at Courtyard Marriot Hotel, Gurugram during 9-11 April 2021. Our faculty members, Dr. Fawzia Tarannum, Ms. Ranjana Chaudhuri and Dr. Sherly M. A. conducted a half-day session on 'Water Budgeting'. The various topics included, water audit and management, introduction to AWWA software, agricultural water management and demo of FAO's CROPWAT software.



The various specific topics included are:

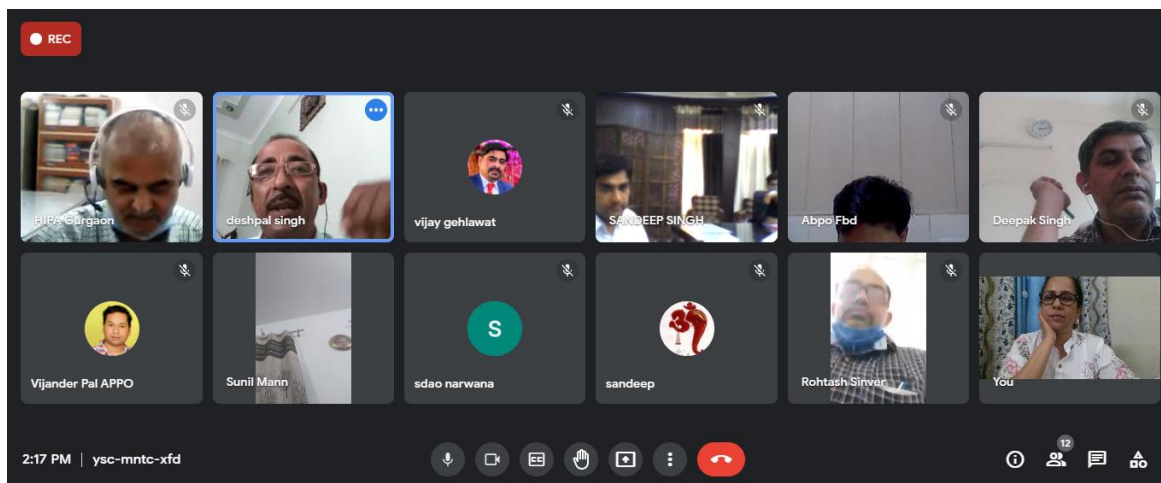
- Water Demand Management & Instruments of Water Pricing- Dr. Fawzia Tarannum
- Agricultural Water Managements and Tools- Dr. Sherly MA
- Water Audit and Tools for intervention- Ms Ranjana Ray Chaudhuri

5.2.17 Invited Lecture on 'Water Governance and Water-Energy-Food Nexus in India' for the School of Planning and Architecture, Bhopal on 23rd April 2021

Dr. Fawzia Tarannum was invited by the Department of Environmental Planning, School of Planning and Architecture, Bhopal on 23rd April 2021 to deliver a lecture on Water Governance and Water-Energy-Food Nexus in India for the students of their program.

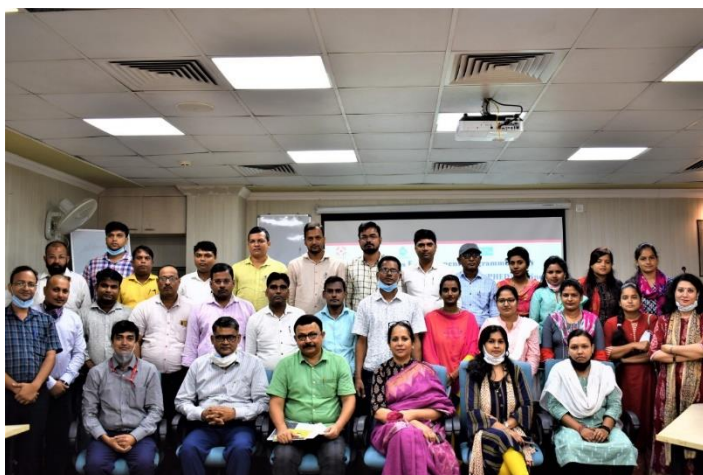
5.2.18 Invited Lecture on Role of Community & NGOs in Natural Resource Management in three days online training course on "Natural Resource Governance" Sponsored by DoPT, Govt. of India and organised by Haryana Institute of Public Administration (HIPA) on 23rd June 2021

Dr Fawzia Tarannum was invited to deliver a lecture on Role of Community & NGOs in Natural Resource Management during the three days online training course on "Natural Resource Governance" Sponsored by DoPT, Govt. of India, organised by Haryana Institute of Public Administration (HIPA) on 23rd June 2021. HIPA is an apex Institution primarily engaged in Training and Orientation programmes for the State. The objectives of the training course were to understand the origins of the concept of natural resource governance, how it has evolved, and how the word 'governance' is used, and misused and to understand the components and basic principles of natural resource governance and what they mean, and to develop basic skills needed to apply them in practice. The course was attended by Class-I & Class II Officers from the Department of Agriculture, Horticulture, Fisheries, Forest , Rural Development and ULBs.



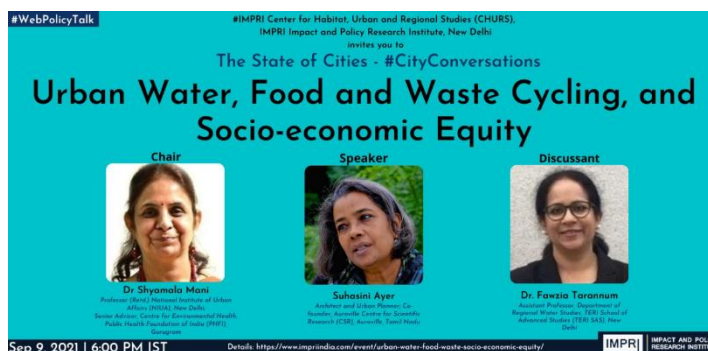
5.2.19 Invited talk by Dr Fawzia Tarannum at Development Management Institute, Patna in training program on Community engagement for O&M of piped water supply schemes for PHED Engineers on 7 Sep 2021

Dr Fawzia Tarannum delivered a talk at the Development Management Institute, Patna in training program on Community engagement for O&M of piped water supply schemes for PHED Engineers on 7 Sep 2021. The training was organized in the context of Har Ghar Nal Ka Jal, a flagship programme of the Government of India. She delivered the session on 'Understanding the importance of community participation in the context of Village Action Plan and Jal Chaupal'.



5.2.20 Discussant in the Webinar on Urban Water, Food and Waste Cycling, and Socio-economic Equity organised by IMPRI on September 9, 2021

Dr. Fawzia Tarannum was a discussant in the Webinar on Urban Water, Food and Waste Cycling, and Socio-economic Equity organised by IMPRI on September 9, 2021. The session was chaired by Dr Shyamala Mani and Ms Suhasini Ayer spoke on the distribution of Urban resources and the socio-economic inequities around it. The recording of the session can be viewed at <https://youtu.be/PBki6fquN90>



5.2.21 Invited Speaker at the three days Virtual Workshop on Rainwater Harvesting & Management under Jal Shakti Abhiyaan organised by the Haryana Institute of Public Administration during September 14th - 16th, 2021

A three-day Virtual Workshop on "Rainwater Harvesting & Management" under Jal Shakti Abhiyaan was organised from September 14th - 16th, 2021 by Haryana Institute of Public Administration. The workshop was set around the need for community level water conservation in the light of spatial and temporal variability in the rainfall due to climate change. The primary focus of the workshop was to build capacities in rainwater harvesting techniques for addressing Water Security Issues. Dr. Fawzia Tarannum delivered an invited talk on Water Issues in India in the workshop on 14 Sep 2021.

5.2.22 Invited Speaker at Five Days International Workshop on "Scanning the Horizon of Climate Change – Water Crisis - Disasters-Conflicts and Migration Nexus" from 21-25 Sep 2021

Dr Fawzia Tarannum was the Invited Speaker at Five Days International Workshop on "Scanning the Horizon of Climate Change – Water Crisis - Disasters-Conflicts and Migration Nexus" organised by Amity Mega Center for Natural and Man-Made Calamities (AMCNCAMC) in Collaboration with United Nations University Institute on Comparative Regional Integration Studies (UNU-CRIS) from 21-25 Sep 2021. She delivered a talk on Migration and Environmental Justice on 23 Sep 2021.



5.2.23 Invited panel speaker for the session on Synergies and trade-offs of SDGs and climate actions in the light of Covid-19 on October 22, 2021

Prof. Kansal was an Invited panel speaker at 'Synergies and trade-offs of SDGs and climate actions in the light of Covid-19' held on 22nd October 2021 at International Webinar on Sustainability in Higher Education, organized by UNU-IAS, Japan.

5.2.24 Dr Fawzia Tarannum was the Keynote Speaker at the Climate and Cities Conference on 28 Oct 2021

The Climate Alliance's Asian regional committee hosted a Climate & Cities virtual conference on the 28th and 29th October 2021. The conference was open to all and served as an important opportunity to share emerging research on how Asian cities are being impacted by climate change and identify the opportunities to transform future cities towards a net zero economy. Representing countries with some of the highest density cities on Earth, Asian cities have a critical role in both reducing emissions and planning for resilience. The organisers include Hokkaido University, Nanjing University, National University of Singapore and TERI School of Advanced Studies. Dr Fawzia



Tarannum was the Keynote Speaker at the Climate and Cities Conference on 28 Oct 2021 and she delivered a talk on Capacity Building in Higher Education sector in Asia.

5.2.25 Invited talk by Dr. Ranjana Ray Chaudhuri and Dr Fawzia Tarannum in the training program for Central Armed Police Forces (CAPF) on water conservation and quality organised by TERI on behalf of Ministry of Home Affairs on 14 Dec 2021.

Dr. Ranjana Ray Chaudhuri and Dr Fawzia Tarannum delivered invited lectures in the training program for Central Armed Police Forces (CAPF) on water conservation and quality organised by TERI on behalf of Ministry of Home Affairs on 14 Dec 2021. While Dr Fawzia engaged the sessions on "Participatory tools for water management" and "Behavioral aspects of water conservation and management", Dr Ranjana took a session on "Reducing water wastage and need for conservation". The session had 55 participants from different agencies of CAPF and from ranks varying from Sub-Inspector to Second-in-Command.

5.2.26 Online Training on Introduction to Household Water Treatment and Safe Storage from 01-31 Dec 2021 in collaboration with Sehgal Foundation

Sehgal Foundation collaborated with Coca-Cola Department of Regional Water Studies to conduct an online training programme on Household Water Treatment and Storage from 01 Dec- 31 Dec 2021. The training was supported by CAWST Canada. The training had 120 participants comprising of students, researchers and practitioners.



The banner features logos for TERI School of Advanced Studies, Sehgal Foundation, and CAWST (Centre for Affordable Water and Sanitation Technology) at the top. The main title "Introduction to Household Water Treatment and Safe Storage (HWTS)" is in a blue box, followed by "Virtual Certificate Course" in a smaller blue box. Below this, the course duration is listed as "December 1st – 31st, 2021", and registration closes on "Nov 27th, 2021". A link "Register Here" is provided. At the bottom, there is a link "Click here for Details and Guide" and a slogan "TOGETHER WE EMPOWER RURAL INDIA" with a graphic of a water drop.

6 MoU signed

The Department Signed **MoU with IPCA** for starting an entrepreneurship certificate course on **waste management for youths**. The course will be open for student pan India and includes online lectures and field visits. The first batch of the course will start from March, 2022.

7 Projects (Ongoing/Completed)

7.1 **Blue Green interventions for addressing flooding along Golf Course Road in Gurugram**

A 3-month duration project has been successfully completed for I Am Gurgaon on **Blue Green interventions for addressing flooding along Golf Course Road in Gurugram**. The project site is located between Sectors 26 and 56 along the Golf Course Road that is severely flood-prone in Gurgaon (Southwest of Aravalli biodiversity park) near the foothills of Aravalli Hills. The objective of the project is to propose blue green interventions for mitigating urban flooding with a special focus on:

- i) Existing creek network (Creeks 1 to 4) and runoff capacity
- ii) Existing stormwater drains and runoff capacity
- iii) Existing innovative blue green interventions within the study area
- iv) Proposing new blue green interventions to mitigate flooding



Three field visits were conducted to understand the hydrogeological characteristics of the site along with the flooding spots.

The findings from the study were presented to both IAmGurgaon and GMDA. The final report has also been prepared with a set of recommendations.

7.2 **To vet two DPRs for the Housing and Urban Development Department, Directorate of Urban Local Bodies, Ladakh**

The project aims to vet the two DPRs provided by Housing and Urban Development Department, Directorate of Urban Local Bodies, Ladakh. INR 218000 (excluding taxes). Project PI: Prof Arun Kansal.

7.3 **Towards sustainable water management in HKH Region: a participatory approach to improving water sustainability in mountain cities**

The project is funded by: Asia Pacific Network (APN) for Global Change Research, Japan for an amount of USD 28,000. Project team: Dr Fawzia Tarannum and Prof. Arun Kansal.

7.4 **Project on ‘Youth, Education and Advocacy’ by UNEP through India Green University Network**

This project aims at UNEP’s 2020/2021 Programme of Work under the Ecosystems management Sub-Programme with the project title as ‘Youth, Education and Advocacy’.

The project is funded by: UNEP, Nairobi for an amount of USD 30,000. Project team: Dr Fawzia Tarannum.

7.5 Environmental Quality Assessment Monitoring Plan, September 2021

Prof. Kansal has secured a project on Environmental Quality Assessment Monitoring Plan for ARBL industries at Nunegundla Pale and Karakambadi sites sponsored By Amara Raja Batteries Limited, Tirupati. The total project budget is Rs 12 lakh (excluding GST).

7.6 EU SWITCH Asia Project on Regional Policy Advocacy Component

Prof. Kansal has secured a project on 'Strengthening resource efficiency and sustainable consumption & production' by SWITCH Asia, Agreement Amount USD: 53,750.00, was awarded on 08 Oct 2021 by UNEP, Bangkok The project has four components, Youth Dialogue on Sustainable Lifestyle in India, Resource efficiency in Textile, Farm to Fork and Sustainable finance.

8 Research Publications

- Neha and **Kansal, A.*** (2021). "Acceptability of reclaimed municipal wastewater in Cities: evidence from India's National Capital Region". Jr Water Policy. (Accepted, In press) **(IF: 1.434)**
- Agasty S., **Tarannum F.**, Narula S. (2021), "Innovation for Sustainable and Inclusive Growth for a Self-Reliant Economy-A case study of Sambalpuri Ikat Handloom Cluster of Bargarh", Small Enterprises Development, Management & Extension Journal- SAGE Journal, DOI: 10.1177/09708464211055533.
- **Chaudhuri, R. R.***, Sharma, P. and **Kansal, A.** (2021). "Reducing the water footprint of megacities in Asia: Addressing water reuse and groundwater recharge (case study of Delhi, India)", In Urbanization in the Global South: Perspectives and Challenges, Routledge India, ISBN9:781003093282, DOI: <https://doi.org/10.4324/9781003093282>.
- Upadhyay, M. and **Sherly, M. A.*** (2021). "Analysis of large dam storage capacity and its effect on water demand management in India", Book chapter, Springer Nature (Accepted, In press).
- Chaudhary, S., Chua, L.H.C., and **Kansal, A.** (2021). 'Modelling wash off in temperate and tropical urban catchments'. Jr Hydrology 603, 26951. 11 pg. doi.org/10.1016/j.jhydrol.2021.126951. Elsevier. **(IF: 5.726)**.
- Nanda, M., **Kansal, A.***. (2021). 'Pathways of sustainable Phosphorus loop in Germany: Key lessons from Stakeholders' perspectives'. Jr. Current Research in Environmental Sustainability. 3, 100062. doi.org/10.1016/j.crsust.2021.100062. Elsevier.
- Goel, S., **Kansal, A.***, Stephan, P. (2021). "Sourcing Phosphorous for agriculture: Lifecycle assessment of three options for India". Jr. Resources Conservation and Recycling.174, 105750. doi.org/10.1016/j.resconrec.2021.105750 Elsevier. **(IF: 8.086)**.
- Ali, Q. S. W., Pandey, S. **Chaudhuri, R. R.**, Behera, S. Jeyakumar, L (2021). "Development of rainfall-infiltration measurement system and recharge strategies for urban flooding areas: a case study of Delhi, India", Modeling Earth Systems and Environment, Springer, DOI: <https://doi.org/10.1007/s40808-020-01050-y>
- **Chaudhuri, R.R.*** and Sharma, P. (2021). "An integrated stochastic approach for extreme rainfall analysis in the National Capital Region of India", J. Earth Syst. Sci. (2021) 130:16 Indian Academy of Sciences, URL: <https://doi.org/10.1007/s12040-020-01510-0>.
- Bera, S., **Sherly, M. A.*** and Janadri, K. K. (2021). "Impact of COVID-19 on Water and Sanitation in Mumbai Slums", Jr. Sustainability, Agri, Food and Environmental Research.

- Gandhi, L., **Chaudhuri, R. R.*** and **Sherly, M. A.** (2021). "Water Sustainability of Two Central Indian Cities: Indore and Nagpur", International Virtual Conference on Innovative Trends in Hydrological and Environmental Systems (ITHES-2021), 28-30 April 2021, Water & Environment Division Department of Civil Engineering, National Institute of Technology Warangal.
- Vasudevan, P., **Sherly, M. A.*** and **Chaudhuri, R. R.** (2021). " Hydrological Risk Assessment using SWAT Model and Drastic Method - An Application to Chennai", International Virtual Conference on Innovative Trends in Hydrological and Environmental Systems (ITHES-2021), 28-30 April 2021, Water & Environment Division Department of Civil Engineering, National Institute of Technology Warangal.