MINUTES OF THE SECOND MEETING OF RESEARCH ADVISORY COMMITTEE HELD ON JULY 2, 2020 AT 11.30 AM.

The second meeting of Research Advisory Committee (RAC) was held on 02 July 2020 at 11:30 AM on Microsoft Team Platform.

PRESENT:

The following were present:

Prof Manipadma Datta, Chairperson Prof Shaleen Singhal Prof Atul Kumar Dr Rajesh Tandon Dr Yogendra Singh Dr Sejal Worah Dr Sudipta Chatterjee Dr Chaithanya Madhurantakam Dr Kamna Sachdeva Dr Sukanya Das Dr Fawzia Tarannum Dr Montu Bose Dr Vidhi Madaan Chadda Capt Pradeep Kr Padhy (Retd.), Secretary **Special Invitees** Prof J K Garg Prof Arun Kansal Dr Vishnu Konoorayar Dr Shantanu De Roy Dr Gopal Sarangi

Dr O.S. Sastry could not attend the meeting.

The Vice Chancellor welcomed the members at the second meeting of RAC.

- Item No.1. To confirm the minutes of the First meeting of the Research Advisory Committee held on 29 April 2019. The Registrar informed that the minutes of 1st meeting of the RAC held on 29 April 2019 were circulated to the members and no comments have been received on the same.
- **TS/RAC/2.1.1.** The RAC confirmed the minutes of 1st meeting of the Committee held on 29 April 2019.

Item No.2. Matters for Information: -

(a) Institution Innovation Council (IIC). The Registrar informed the members that as required by MHRD, an Institution Innovation Council (IIC) had been set up at TERI School of Advanced Studies to foster a spirit of innovation and entrepreneurship amongst the students while taking into consideration the infrastructure and other facilities available. Prof Atul Kumar informed that the idea of setting up Institution Innovation Council was to promote innovation skills

among students. He informed that the IIC had representation from both faculty, students, experts from outside and alumni who have set up start up activities. He stated that students were encouraged to attend several activities organized on subjects like innovation, entrepreneurship, start-ups and IPR and Quarterly Plans, Reports and Minutes prepared on the activities of IIC had been uploaded on the IIC portal of MHRD. Prof Atul Kumar intimated that students were not coming up with innovative ideas with regard to start ups and it would take some more time such ideas to fructify. Dr Yogendra Alagh suggested that TERI SAS could think of attaching a student with a faculty member who could help them to develop their idea on startups. In response, Prof Shaleen Singhal said that TERI SAS had been thinking in that direction and had started appointing faculty as mentor to students to help them out. He apprised members that TERI SAS was also thinking of collaborating with experts/scientists at TERI on this aspect.

Members noted the matter.

(b) **Establishing Appropriate authority under IPR Policy**. The Registrar stated that a Committee had been formed under the Chair of Dean (R&R) which would act as the authority to deal with issues related to Patent and IPR applications as per existing IPR policy. He stated that the IP and Technology Transfer Cell of TERI SAS would function under the supervision of the Committee coordinated by its Secretary. Dr Chaithanya Madhurantakam suggested that amplifying rules with respect to consultancy and revenue sharing modalities should be explained in detail in the IPR Policy. Dean (R&R) stated that efforts are on to finalise a consultancy revenue sharing policy at an early date.

Members noted the matter.

Item No.3(a). TERI School of Advanced Studies research goals and progress. Prof. Shaleen Singhal, Dean (Research & Relationship) apprised members that thematic **TERISAS** research agenda of was being spearheaded through respective Departments. He emphasized the need for Departments to further enhance their collaborations with leading institutions and funding organisations for strengthening TERI SAS's research portfolio. He also raised the concern relating to decline in funding from research projects in past few years and urged that outputs from research projects ; such as publications, patents, policy briefs, and working papers be improved substantially. He informed the Committee members that all the Departments were working on their medium-term and long term research plans, of which 3 Departments/Centre would be giving brief presentation. Prof. Shaleen Singhal acknowledged the challenges being faced by faculty members during the ongoing pandemic period, in terms of securing research funds. He invited the Centre for Post Graduate Legal Studies, Department of Regional Water Studies, Department of Business & Sustainability to brief the RAC about their ongoing research activities and plan.

(i) Centre for Post Graduate Legal Studies. Dr Vishnu Konoorayar informed the members about the activities undertaken by the Centre (Encl 1). He stated that since the Centre had been established recently, it was in the development stage. He informed about the research outcomes,

collaboration with partners, MoUs signed, workshops/seminar organized, publications brought out by the faculty members and future plans of the Centre. Members appreciated the efforts initiated by CPGLS with respect to collaborations and bringing out journals / publications. Dr Vishnu Konoorayar presented that the Centre would like to develop the LLM programme as a research programme while strengthening other collaboration areas and the Center would like to become financially self-dependent. Prof. Shaleen Singhal stated that since the external funding for research projects had gone down, CPGLS could work with other Departments for multidisciplinary projects.

Members noted the progress made by CPGLS.

(ii) Department of Regional Water Studies. Prof. Arun Kansal presented the research works of DRWS (Encl 2). He mentioned that the Department had been doing research projects covering three domain areas namely Technology development, Area-wide community issues and Policy advocacy & governance. He then explained key outcomes of some of projects undertaken by the Department. He informed that the Department projects had generated surplus revenue for TERI SAS, been able to support some Master's and PhD students stipend every year and received media visibility. He informed that the Department had been consistently publishing in high impact non-paid journals from Elsevier and Springer. Members appreciated efforts of DRWS for their accomplishment in research. Prof Shaleen Singhal enquired about short-term and medium terms plans for research by the Department. Prof Kansal informed that short-term and medium- terms research themes set by the department were: rejuvenation of urban water bodies, bench-marking and auditing and nexus studies. He stated that long-term agenda was to develop expertise in the area of AI and data analytics application in water sector. To Prof Atul Kumar's enquiry about patents, Prof Kansal informed that the technology on P-recovery could be patented and it had huge commercial potential to generate revenue and TERI SAS needed to do the logistic and bear financial costs related to securing patent and technology related inputs would be provided. Prof Datta urged the department to explore continuation of relationship with Coca-Cola beyond the 10 years of existing commitment. Prof Kansal informed that the Department would work towards the goal set by the Chair.

Members noted the progress made by DRWS.

(iii) Department of Business & Sustainability. Dr Montu Bose presented the activities undertaken by Department of Business & Sustainability (Encl 3). He highlighted the activities carried out with respect to research, events organized, publications, projects and future plans. Dr Bose intimated that the Department was focusing on areas of Sustainability, CSR, Corporate Finance, Circular Economy, Green Finance, Strategy, Business Sustainability, International Trade & Investment Law, Commercial Arbitration & Dispute Resolution, Health Economics, Health Financing, Economics of Social Sector. He apprised members that as part of future plan conducting a greater number of PDP, MDP and FDPs were being considered. He informed members that the Department was also focusing on a successful conduct of ICBESD conference. He stated that efforts were on to develop research articles and data collection for research through help of IGC of TERI SAS. Members were of the view that the Department should make a perspective plan for research. It was also suggested by members that CSR and Circular Economy had good opportunity for research, the Department could focus in these areas.

Members noted the progress made by DBS.

- Research Centers. Update on establishing and operationalising Research Item 3 (b) : Centers. Prof J K Garg gave a detailed presentation on setting up of TERI SAS Centre for Sustainable Development (TERISAS-CSD) (Encl 4). He stated that the Centre would provide inter disciplinary solutions to the real challenges of the society pertaining to ecological, economic, social, environmental and governance domains of sustainability. He stated that the Centre would have dedicated human and financial resources and departmental faculty could become adjunct/associate faculty to the Centre based on their academic knowledge and skill-sets and a seed money of ten lakhs would be required to operationalize the Centre. He presented a list of likely funding agencies who could be approached for the Centre. A few internal members enquired with respect to the need for setting up a Centre since there were constraints in infrastructure resources. Dr Chaithanya Madhurantakam suggested that equivalence of credit load of faculty members could be worked out since some faculty members would be part of Department as well as Research Centre. Dr Kamna Sachdeva suggested that the vision and mission of the Centre should be under the TERI SAS overall vision on sustainability. Prof Rajesh Tandon said that setting up a research Centre was a good idea and it should have clear action research plan. Dr Gopal Sarangi suggested that the existing projects could be identified and placed in one or two areas under such a Centre. Prof Atul Kumar, Dean (Academic) stated that TERI SAS needed to decide whether to set up Centre or not and to take concrete action accordingly. He shared his experience of setting up two such Centres in TERI and recommended that TERI SAS should go ahead with setting up of a research Centre after considering various formalities. The Chair stated that the proposed Centre should evolve as a net revenue generating entity, he requested Prof Garg to submit a revised proposal with a clear business development strategy and plan to the Dean (Research & Relationships) and accordingly the proposal could be processed as per the rules.
- **TS/RAC/2.3.1.** Prof JK Garg is requested to share a comprehensive proposal on setting up the Research Centre with a clear business development strategy and plan with the Dean(R&R) for further processing.
- Item No. 4. Update on changes in PhD programme. Dr Shantanu De Roy gave a detailed presentation on the rules and other salient aspects of the PhD programmes offered by TERI School of Advanced Studies. Prof Shaleen Singhal advised that more emphasis should be laid on publications from scholars and suggested that PhD

scholars should be actively engaged with the faculty research in the respective areas.

The members noted the PhD programme rules.

There being no other agenda item, the Chairperson thanked all the members for joining the meeting and taking active participation.

The meeting concluded at 3.00 pm.

Enclosures: -

- 1. Copy of presentation of CPGLS
- 2. Copy of presentation of DRWS
- 3. Copy of presentation of DBS
- 4. Copy of presentation on proposed Research Centre

TERI SAS Centre for Post Graduate Legal Studies RAC Presentation

July 2, 2020

Centre for Post Graduate Legal Studies

- Established in 2016 to facilitate One-Year LL.M Programme as per UGC Directive
- From 2016 to March 2019 was part of DoPS & Independent since March 2019.

Faculty and Researchers

- Current Faculty Strength:
 - Dr. Vishnu Konoorayar, Associate Professor, LL.B; LL.M; PhD (Joined Feb 1, 2018)
 - Dr Vidhi M Chadda, Assistant Professor, LL.B; LL.M; PhD; FCS (Joined Jan 2, 2020)
- Researchers
 - CPGLS has 06 doctoral researchers (05 part-time/01 full-time)

Research outcomes of last 5 years:

• Externally funded research (ongoing and completed):

 Impact analysis of the Arunachal Pradesh Panchayati Raj Act, 1997 on traditional institutions in the State: A case study of two districts of East Siang and East Kameng (Indian Council of Social Science Research)

Institutional MoUs done through CPGLS

- With *Delhi Legal Services Authority* (approved by TERI SAS)
 - Legal Aid; Legal Awareness (Had discussed on a project in with DSLSA- in association with MoEFCC; State Govts of Delhi; Haryana and Punjab on Stubble Burning)
 - Currently engaged in legal aid and legal awareness activities
 - Planning to establish a virtual legal aid clinic in collaboration with DSLSA
- With *Maadhyam Council for Mediation and Conflict Resolution* (discussion stage-Proposal to establish 'Centre for Conflict Resolution and Sustainable Solutions')
 - First event scheduled in the 3rd week of July on 'Online Dispute Resolution: Challenges and Opportunities' with (1) Justice AK Sikri, Rtd Judge Supreme Court of India & Judge Singapore Commercial Court ; (2) Justice Sanjeev Sachdeva, Judge Delhi High Court (3) Mr AS Chandhiok; Former ASG Senior Advocate ; (4) Ms Sadhna Ramachandran; Senior Mediator; (5) Prof. Shri Prakash, TERI SAS on the panel

- With *Confederation of Indian Industries (CII)* : TERI SAS as an Institutional member (approved by TERI SAS)
- With *Thomason Reuters/Newgen Technologies*:
 - Journal of Law and Sustainability (First issue in December)
 - Books on LL.M courses
 - Urban Infrastructure Law (edited by Prof. Shri Prakash and Dr Vishnu)
 - Mining and Mineral Laws (edited by Dr Vishnu and Ms Manisha)
 - Business and taxation laws in infrastructure projects (edited by Dr Jaya and Dr Vidhi)
- With *Live Law* (<u>https://www.livelaw.in/</u>) and *Delhi Post* (<u>https://delhipostnews.com/</u>) for publishing student research.

Publications by faculty members:

- Dr. Vishnu Konoorayar
 - "Building the Global Climate Change Regulatory Regime: An Overview" Vol 9 Issue 2 International Journal of South Asian Studies, ISSN 0974 2514 (2016)
- Dr Vidhi M Chadda
 - "Wages under Employee Provident Funds and Miscellaneous Provisions Act, 1952 and draft Code on Social Security, 2019: A Comparative Appraisal" Chartered Secretary Vol.49 Iss. 11 (November 2019) ISSN 0972-1983
 - Competition Act, 2002: Law and Practice (Bloomsbury Professional India) ISBN 978-93-88630-70-2 (2019)
 - Law and Procedures under NCLT and NCLAT (Co-authored) (Wolters Kluwer India Pvt. Ltd.) ISBN 9789387506176.
 (2016) Revised Editions 2018 & 2019
 - "Case Comment on Competition Commission of India v. Coordination Committee of Artists and Technicians of WB Film and Television and Others" NLUA Law and Policy Review Vol 3 No. 1 ISSN 2455-8672 (2017)
 - "(Relevance) of relevant market delineation in abuse of dominance cases: The Indian Experience" in Manoj Kumar Sinha ed. "Emerging Competition Law" (2017), Wolters Kluwer CCH ISBN 13:978-93-86691-28-6

Medium and Long-term Research Plans

• Medium Term

- Develop TERI SAS LL.M as a research programme
- Strengthen PhD programme (CPGLS has 11 PhD applications this time)
- Annual Conference/Workshop for students and scholars
- TERI SAS publication for every course offered
- Useful collaborations
- Externally funded projects
- Long Term
 - COMPLETE Law School and Research Center
 - Financially self-dependent
 - Useful for the society and the country

Coca-Cola Department of Regional Water Studies

Accredited with grade 'A' by NAA



The Department

Arun Kansal, Ranjana Chaudhuri, Fawzia Tarannum, Sherly M A.



Background

- Started in May 2014 with 2 full-time faculty members.
- From Inception- Offers Two Master's Programme (M.Sc., M.Tech.) and a PhD programme.
- Current Faculty strength of the department is 4.
- <u>Key strength areas</u> of existing faculty members are:

Water technology, Hydrology, Modelling, Gender, Irrigation, water audit and demand management









Types of Research being pursued in the Department

Faculty and student led researchFunded projects

Principles

Collaboration

- ✓Internal
- ✓With TERI and
- ✓With external organizations
- Creating a unique research niche in near future
- □Fundamental research
- □To feed into- or emerge out of- programme and courses.



Type of projects

□Science and technology (fundamental)

Area-wide community issues (fundamental and applied)

□Policy advocacy and governance (fundamental)

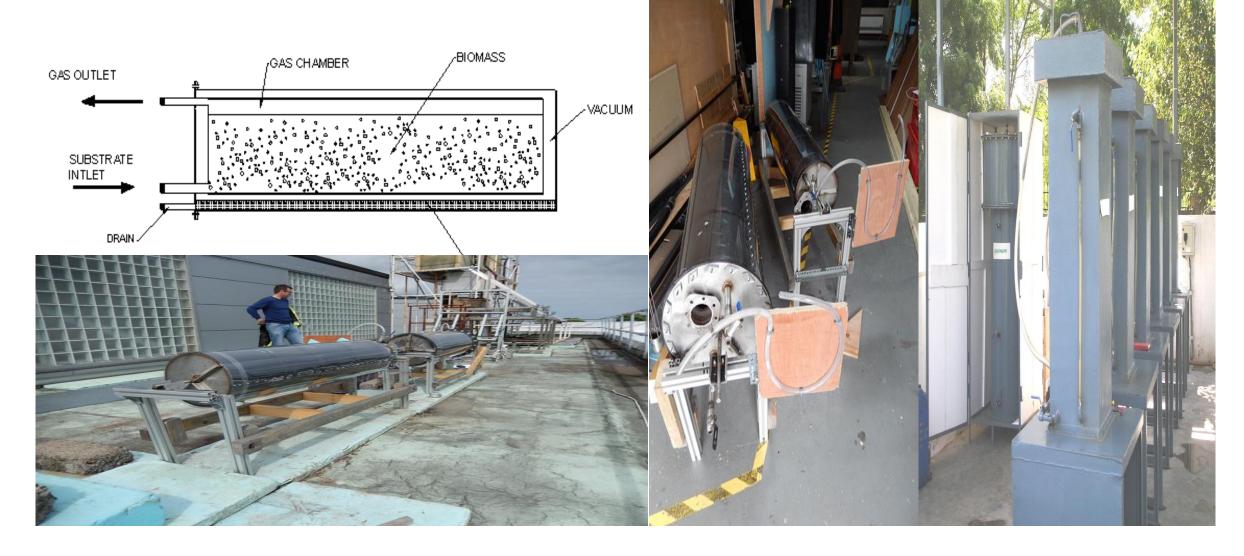
Summary of research activities of the department



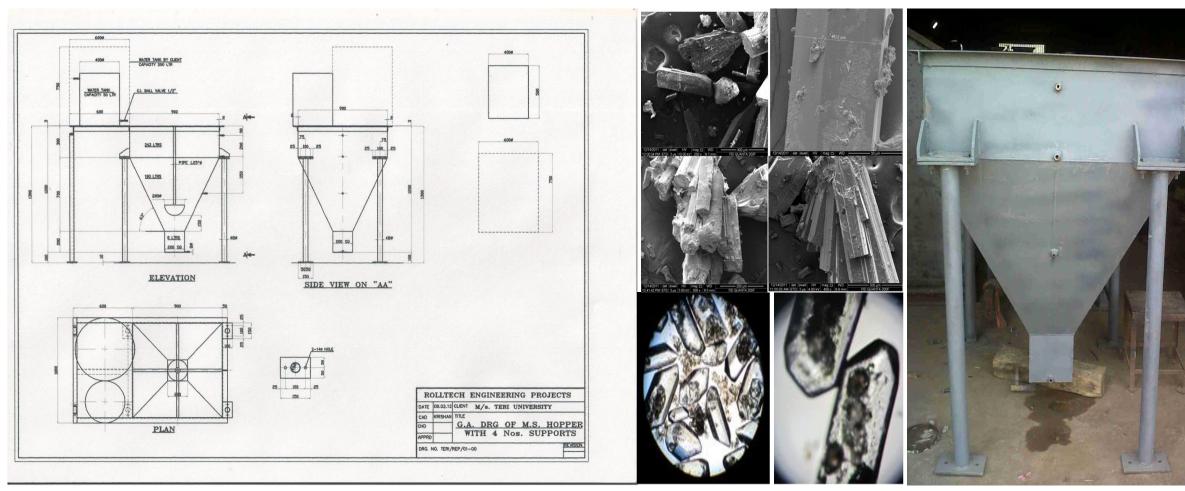
Project/Research	Nature		
Science and Technology			
Arsenic removal	Faculty and Student led		
Solar accelerated AD	Student led, funded		
Phosphorus recovery	Faculty and student led		
Area-wide community issues	S		
WQM for YAP	Faculty and student led		
Perception analysis of water quality	Faculty and student led and		
	funded		
Policy advocacy and governan	ce		
Strengthening Urban WASH	Funded (USAID)		
WEC nexus	Funded (Asia Pacific Network)		
Urban water metabolism	Funded (Enel Foundation)		
Socio-ecological metabolism study for Urban water planning	Funded		



Solar Accelerated Anaerobic Digestion



Low cost technology for P-recovery from sewage sludge





Research Outcome- Urban Water Metabolism

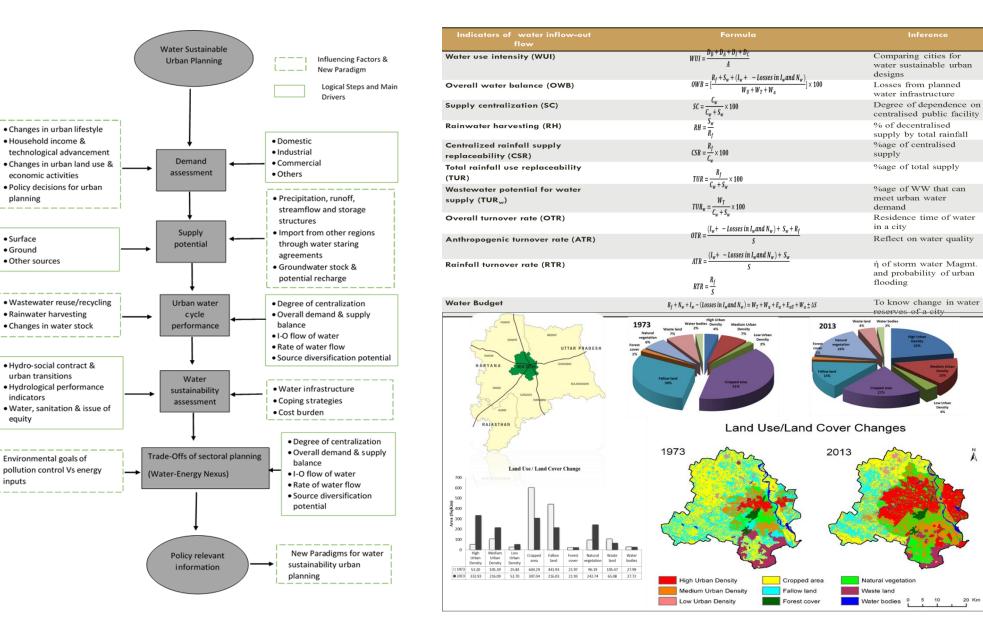
planning

Surface

Ground

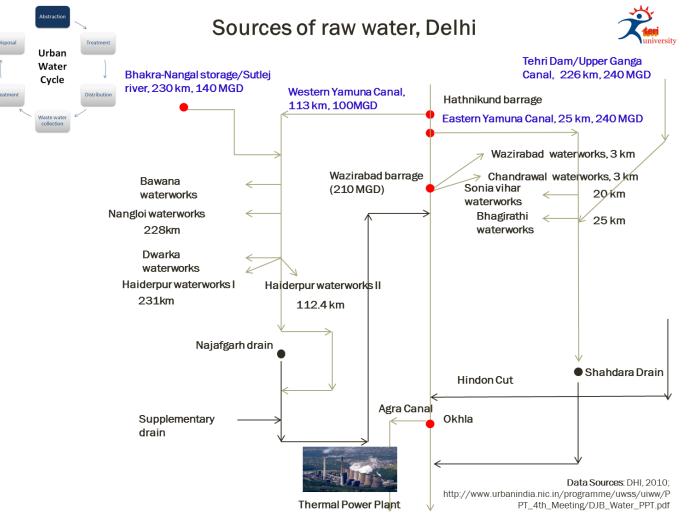
equity

inputs



chool of dvanced studies Knowledge for Sustainable Development (Deemed to be University under Section 3 of the UGC Act) Accredited with grade 'A' by NAAC

Water-Energy Carbon Nexus

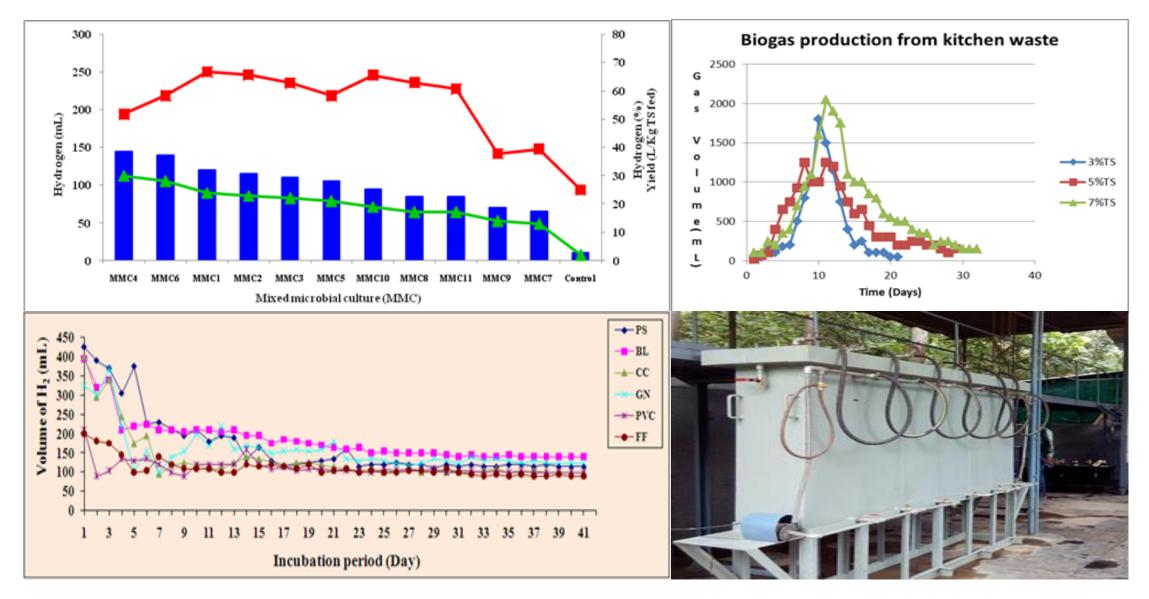






Bioenergy from waste- Hydrogen and Methane





Review of Dar Es Salaam City Water and Sewerage Services



Type of recommen dations	No. of recommen dations	Annual Energy Saving Potential kWh 642338	Annual cost saving potential, million T2 154.2	Cost of implemen tation, 25 46.9	Annual saving potential, USD 70,734	Cost of implem entation 21,514	Payback period, years 0.3		Authorized Consumptio	Billed Authorized Consumption	Billed Metered Consumption (including water exported) Billed Unmetered Consumption	Revenue Water
term, (payback less than one year) Medium term, (payback	7	4542300	737.7	598.85	338,395	274,702	0.8	System Input	n	Unbilled Authorized Consumption	Unbilled Metered Consumption Unbilled Unmetered Consumption	
between 1 to 3 years) Long term, (payback more than 3 years)	14 32	200721 5,385,359	86.1 978.0	474.5	39,495 448,624	217,660 513,899	5.5	Volume (corrected for known errors)	Water	Apparent Losses	 Unauthorized Consumption Customer Metering Inaccuracies Leakage on Transmission and/or Distribution Mains 	Non- Revenue Water (NRW)
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Landscape Approach For Mid-Ganga Basin Management

OBJECTIVES

Depth

Typeof

Sources

Handpy Borewel Well Ponds

Populati Water drawn Per day(per handpu Water consume

per househo

Study of CETP functioning
Mapping of effluent canal & study of waste water quality used for irrigation
Ground water mapping for villages
Water & soil quality testing

Best practices in tanneries •Salt Shaker •Hair Removal Machine •Chrome Recovery Unit •Water meter at source & outlet

Number

Depth



Effluent concl. starts from CETD Is

Effluent canal, starts from CETP, Jajmau

Sample	CETP	Irrigation	EPA
	Outlet	Canal	Standards
Total Chromium(mg/l)	23.40	1.98	2.0

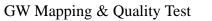
•		Dimensions		Dimension		Dimension		Dimension	
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ump	30-40	35-41 m	20-25	36m	70-75	41m	26-28	36m	Sample
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	4-5	30-45 m	3	46m-91m	4	37 m	4	34m	рН
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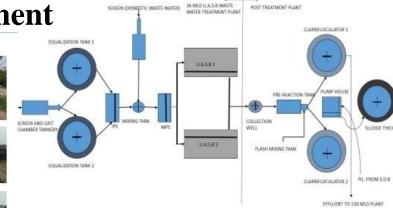
Number

Depth

Number

Samples / Parameters	SHEIKHPURA	GADHYAMPURVA	KARBI	AIMA	BIS STANDARDS
рН	6.4	6.55	6.71	6.71	6.5-8.5
Conductivity	1.96	0.67	1.16	0.86	0
Total Alkalinity (mg/L)	422	412	516	374	200
Hardness(mg/L)	860	294	358	336	300
Chloride(mg/L)	407.87	9.99	79.97	690.98	250





36 MLD U.A.S.B TANNERY WASTE WATER TREATMENT PLANT, KANPUR





eters	Result	S.N	Sample Code	Cr conc. (µg/g)
cal Conductivity(mS)	0.92	1	Soil Site-1	52.9
rganic Carbon content(O.C)	2.29	2	Soil Site-2	24.4
en content	Low	3	Soil Site-3	81.5
orus content	Medium	4	Sludge	121.7
um content	Medium	Plant- 1	Shoot	2078.4
	Wheat, Rice, Cauliflower	Plant- 2	Shoot	65.9





Urban Sanitation Project

Lectures Recorded and posted on YouTube

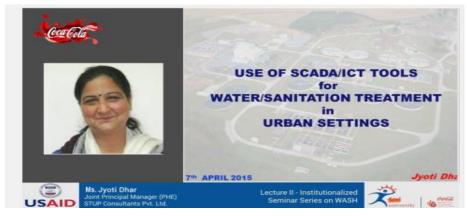




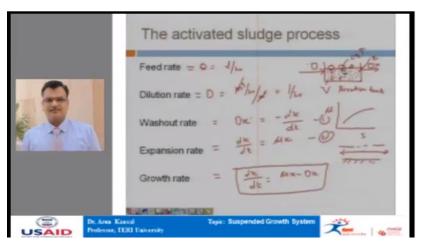
Topic:Water Quality Management - By Prof. Arun Kansal



Topic: Swachh Bharat Mission and Entrepreneurship Opportunities for Youth - By Mr. Ashish Jain, Founder Director, Indian Pollution Control Association



Use of SCADA/ICT Tools for Water/Sanitation Sector in Urban Settings - By Ms Jyoti Dhar , Expert Consultant on SCADA



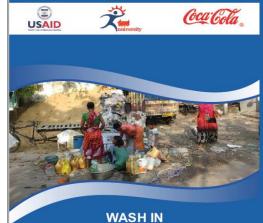
Topic: Aerobic Suspended Growth System Waste Water Technology -By Prof Arun Kansal

Other outputs









HIGHER EDUCATION

















JUNE 2017

MDPs and workshops



Training programme for Engineers of WAPCOS



Organised MDP on Gender, Equity and Water Management at TERI SAS



Workshop on "Indo German Dialogue on Sustainable Water Resources Management" held at TERI SAS in partnership with Indo-German Centre for Sustainability, Freie University Berlin and Technical University Munich.



Organised MDP on Gender, Equity and Water Management at Guwahati

























Linkages with other Institutions





Partnership workshop at Tribhuvan University, Nepal



Visit to Royal University of Bhutan, Thimpu



Annual Meeting of Himalayan University Consortium at Chengdu, China



Summary of Funded projects (2014-20)

- Total number of Funded projects completed: 24
- Total funding Amount: Rs 654 Lakh
- Net Savings from funded projects: Rs 351 Lakh
- Coca-Cola Funding: Rs 650 Lakh
- Net revenue contribution to University: 10.01 Crore

Media Visibility

Water Resources Management competition organised by TERI highlights need for sustainable management of water



NT KURIOCITY

ERI University and The Energy and Resources Institute (TERI) recently organised the 'Regional Inter-University Competition on Water Resources agement (IWRM) Management' for students at the undergraduate level to promote engagement of youth for sustainable management of water

participants

resources at ICG, Dona Paula. The two-day event also addressed key problems related to water bodies in the vicinity. Additional chief engineer, Department of Water Resources, Goa, Hosamani inaugurated the residential programme which was attended by senior officials from the Department of Water Resources

Coca Cola, TERI and TERI University along with a host of student

to participate and compete at the National Level. Under this programme, stu-At the western regional round. dents are working on developing a multi-stakeholder, evidence-based, the first place was bagged by participative and practically im-Hislop College Nagpur, while the second place went to GVM's GGPR plementable project proposal on College, Ponda. Integrated Water Resources Man Arun Kansal said: "It's evident Students and faculty members/ that educational institutions are mentors from colleges across Goa, making a point to address and at Maharashtra, and Gujarat pretend to water related issues and sented their proposals before the are coming out as important parjury that comprised of professor, ticipants who can assist to tackle Department of Earth Science, Goa and help resolve these problems University, Chachadi Adiveppa related to water bodies." G, professor Dhempe College of A G Chachadi added that the

Arts and Science Miramar Manoi nation is undergoing severe drought conditions as of these Ibrampurkar, head, Coca-Cola Department of Regional Water Stud recent times. Hence the event by ies, TERI University, New Delhi, TERI is not only a competition but Arun Kansal. This meet was also a an awareness programme also. part of the regional selection pro-Similar programmes were cess, which will result in short-listalso organised at Kochi, Kolkata, ing of two teams from the region Jalandhar, and New Delhi. The

programme aims to create aware ness amongst youth on water and sanitation challenges and instil an ownership of solutions at a wider stakeholder level. It also aims to encourage a systemic. multi-disciplinary approach to understanding and solving water and sanitation problems, engage academia and students with local communities governments and other stakeholders, and, also to encourage local governments to mobilise research expertise of local universities for evidence generation. Attractive awards will be given to the winning teams at regional

and national levels. The programme will also include international knowledge exchange between German experts and selected teams at the National



How to be a water professiona

TIMES NEWS NETWORK

* ith water conservation emerging as the most crucial environment concern. the need for more 'water professionals' which has become a lucrative career option, is on a rise. Arun Kansal, dean research and relationships), head of lepartment, departient of Regional Arun Kan Vater Studies, TERI hool of Advanced tudies (SAS) explains the require

proprents in defining quanty

WITHO ATTRE WAATTRA PROFESSIONALS? Water professionals are those who have attained basic degree in any discipline, like mathematics, science, economics, engineering, urban planning etc and have attained the skill

tic manner transcending technical, social, economic, political and legal perspectives. Water skills available in India have mainly come from institutions offering civil engineering and allied post

problems. There is a need for water professionals, who can provide multifaceted perspectives on water-related issues than just technical ones, thereby contributing to development of both technical insights and policy opt for a single set

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present approach of expanding supply to higher water requir continue to be a re interests of the dev developing countrie present, at least in t that should be accor the international po

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WHAT IS THE NEE

WATER PROFESSIO

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The Department of R Studies at TERI School Studies offers MTech Resources Engineer ment and MSc degr

After the exams tra

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ജലവിഭവ പരിചരണത്തെ അടി

സ്ഥാനമാക്കി ദക്ഷിണേന്ത്യയ്യി

(Badat)

മക്കച്ചി: ഡൽഹിയിലെടെറിസർ ത്സരങ്ങൾ കല്പർ ഗോകലം പാർ ടനം ചെയ്തു. നഗാസഭ സ്ഥിരം സ ദോഗിണി ക്രമാർ, രഞ്ജന സൈ വകലാശാലയുടെനേതൃത്വത്തിൽ ക്ക്കൺവെൻഷൻ സെന്ററിൽ മിതി അധ്യക്ഷ സമമിനി ജയിൻ, കിയ,എന്നിവർ പ്രസംഗിച്ച, ഇ ഹിന്ദസ്ഥാൻ കൊക്കകോള എ ന്ന രണ്ടിന സമാപന സമ്മേളന നെല്കാന ജലസേച്ന ഒക ക്സ്മാണൽ അഹരയണ്ഡ്നാഷ ത്തിൽക്കോസ്മാസ്ചാന്സ ലെ കോളളുകളിലെ ബിൽദ് വി ചിപ്പ്രിർസിലൽ സെക്രട്ടറി ഡോ. നൽ ഹെഡ് അത്ത് കരാർ, ഡോ. ലർ ഡോ. ബി. ഡ്രെസ്ട്രണക്കുറപ്പു ദ്ധർത്ഥികരിക്കായി നടത്തുന്ന േ കെഷാലന്ദ്രകമാർയോഷി ഉദ്ഘാ അശങ്ങികൻസാൽ, ആനന്ദ് ആദ്രം പ്രൊതിഥിയായി പങ്കെട്ടക്കും



KAKKATHARA RAGHAVAN VAIDYAN'S



സുദനക്കുറുപ്പ് കുഖ്യാതിഥി യായിരിക്കും.

തെലകാന ലെസേചന വ കൂപ്പ് പ്രിൻസിപ്പൽ സെക്രട്ട



Careers in Water Resource Management





Media Visibility





Media Visibility



L To R: Prof. Arun Kansal, Dean and Head of the Department of Regional Water Studies, TERI SAS; Dr. Ian Reid, Chief Academic Officer, ICE Warm, Australia; Dr. Shailendra Kumar Joshi, Chief Secretary, Government of Telangana; Sh. B. Kalyan Chakravarthy, Director General, EPTRI; and Dr Rajiv Seth, Pro Vice Chancellor of the TERI SAS



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Auto





A two-day Management Development Programme on Gender, Equity and Water Management aimed at building the capacity of Engineers in the Department of Irrigation and CAD to chalk out future directions in understanding and analysis of water inequalities specifically incorporating the gender component and the role of women was inaugurated today by **Sh. Shailendra Kumar Joshi**, Chief Secretary, Government of Telangana. Present on the occasion were **Sh. B Kalyan Chakravarthy**, Director General EPTRI; **Ian Reid**, Chief Academic Officer, ICE WaRM, Australia; **Dr. Rajiv Seth**, Pro-VC TERI SAS and **Dr. Arun**



Research Publications (2014-20)

Туре	Numbers
Total	46
Journals	28
Policy Briefs	3
Book Chapters	3
Conference papers	12
Invited lectures	>30

Google Scholar: Citations ≈5350;

Max. Scopus h-index: 13 Per Faculty/year: 2

Publications in Journals having Impact Factor >10 : 2 Impact Factor > 7 : 6

Peer-reviewed SCI/Scopus; None in paid journal; Most publications are not open access



Future Research Plans

Medium Term

- Rejuvenation of urban water bodies
- Benchmarking, auditing
- Nexus studies

Long Term

DATA Analytics

Thank You



Department of Regional Water Studies, TERI School of Advanced Studies, Plot No. 10, Institutional Area, Vasant Kunj, New Delhi- 110070 Tel. +91 11 71800222 ; Fax +91 11 26122874; E-mail registrar@terisas.ac.in

2nd Research Advisory Committee Meeting

DEPARTMENT OF BUSINESS & SUSTAINABILITY

TERI SCHOOL OF ADVANCED STUDIES

Completed – Sponsored Research

Manipadma Datta –

- Assessment and Implications of Rationalizing Fossil-Fuel Subsidies (ADB TA 7834): Analytical Framework (Sponsor: ADB)
- Scoping and Project Design Work on Climate Resilient Housing Pilot Program in Bangladesh (Sponsor: IFC)
- Feasibility Study for Establishment of a Centre of Excellence for the Study of Biodiversity in Guyana (Sponsor: WB)
- Scoping and project design work on climate resilient housing under Pilot Program for Climate Resilience (PPCR)-Nepal (Sponsor: IFC)
- Forming Internal Promotion Scheme for Executives and Employees (Sponsor: Institute of Company Secretaries of India)

➢ Invited by the Asian Circular Economy Leadership Academy, Bangkok, Thailand, co-hosted by UN Environment Programme, HSM PERDO and Chulalongkorn University of Thailand to conduct a whole day international workshop on Circular Economy Finance, for participants who were environment professionals from across Asia. All the support services were sponsored by SWITCH ASIA which funded by EU;

➤ Authored 'Finance for Circular Economy', a complete chapter in the book 'Circular Economy' webpublished by ACELA, Bangkok in 2019.

> Member, Academic Committee, SWITCHASIA, an initiative funded by EU.

Sapna Narula –

- Decentralized Off Grid Electricity Generation in Developing Countries (Sponsor: University of Dundee)
- Sustainable livelihood activities on reclaimed open cast coal mines: a technology enabled integrated approach in Indian Coal sector (Sponsor: Ministry of Coal)
- > A study of MSME Enterprises (Sponsor: University of Guelph)
- Sustainability Strategies of Indian Hotel Industry (Sponsor: Deakin University)

Ritika Mahajan –

Key Person of Module-4 'Business Models' in Asian Circular Economy Leadership Academy (Sponsor: Chulalongkorn University and United Nations Environment Programme)

Completed – Sponsored (Research) Events

- 1. International Conference on Business, Economics & Sustainable Development (ICBESD)
- ICBESD 2018: Amar Ujala Publications Limited, Bharat Petroleum Corporation Limited, Mature Media Limited, Orient Cement Limited, Agriculture Skill Council of India, Jindal Saw Limited, Container Corporation India Limited, The Cotton Corporation of India Limited
- ICBESD 2019: E&Y, MNRE (GoI)
- ICBESD 2020: NISM (SEBI)

2. International Conference on Agribusiness – Sponsor: Sonalika Social Development Society, Agriculture Insurance Company of India Limited, Indian council of Agricultural Research, Agricultural Insurance Corporation of India, TATA Trusts, Syracuse University, CSIR

3. International Workshop on Strengthening International Agribusiness Trade – Sponsor: UNGC, GNSD, CII, RMIT University, Deakin University, South Asia Center, Tata Cornell Institute and others

- 4. Finclusion: Empowering Women through Digital Finance Sponsor: L&T Financial Services
- 5. Building Learning in Sustainability Science (BLISS) Sponsor: Registration
- 6. MDP on Sustainability Reporting Sponsor: Indian Oil, PPAP Automotives, SB Energy

Sustainable Development'. Various diverse and significant sub-themes have also been thoroughly covered. Many chapters are selected from the papers presented at the Annual International Conference on Business Economics and Sustainable Development (ICBESD-2019) organized by the TERI School of Advanced Studies in January 2019.

Publication

Manipadma Datta, PhD, FCS, is the Vice-Chancellor and Professor of Business Sustainability at the TERI School of Advanced Studies. The Conference Chair of ICBESD-2019, he has been in management teaching, Book. Idea academician, he has been invited as speaker by IAAER at Mexico and Las Vegas USA and as the keynote speaker at the conference organized by Szczecin University of Poland. Business, Economics & Sustainable Development

Studies, MINIT Jaipur. Prior to this, she was a faculty in the Department of Business and Sustainability, TERI School of Advanced Studies. She was the Co-Chair of ICBESD-2019. A regular contributor to international Journal schedules (AS guest editor):

International Journal of Management Practice, Inderscience
International Journal of Management Practice, Inderscience

International Journal of Comparative Management, Inderscience

Manipadma Datta Ritika Mahajan Montu Bose

the emerging issues

BUSINESS

Completed – Non-Sponsored Research

Jaya Vasudevan

✓ **Publication:** Book -1, edited volume -1

✓ Conference: 2

International

• "Gender Discrimination in the Appointment of Arbitrators", Annual Meting of the Law & Society Association, from May 30-June 2, 2019 in Washington, US;

National

• "Challenging trends of International Commercial Arbitration in India," International Workshop on International Commercial Law & Arbitration held on August 30, 2019 at the University Institute of Laws, Punjab University, Ludhiana;

✓ Invited Speaker: 2

"Green Infrastructure & Environmental Regulations" Training programme for Probationary officers at the National Institute of Financial Management, GOI

"Environmental Laws in India"; Training programme as part of Green Skill Development Programme sponsored by MoEF at NEHU Shillong

Manipadma Datta

- ✓ Publication: Journal 15
- Best author award by ICSI for the paper published in the Chartered Secretary
- Appointed as Adviser to Association of Business Chambers of Commerce & Industry
- Appointed Member, Editorial Board of "Effulgence", the management research journal published by RD Institute of Management, Delhi
- ✓ PhD (awarded): 2
- ✓Conference: 10
- ✓ Invited Speaker: 20

Montu Bose

✓ Publications: Research Articles- Journal – 5; edited volume – 2 & News paper - 1

✓ Conference: 4

International

- Presented a paper titled "Health Financing Strategies for Universal Health Coverage: A Comparative Study of Three Indian States" at the International Health Economics Association (iHEA) Congress, Basel, Switzerland.
- Presented a paper titled "Innovative Health Financing in India: A Comparative Study from Equity Perspective" at the Human Development & Capability Association (HDCA) Annual Conference, Cape Town, South Africa.

National:

- Presented a paper titled "Curative Versus Preventive Healthcare in Developing Countries: The Case of Menstrual Hygiene in India" at the 7th Annual Conference of Indian Health Economics & Policy Association (IHEPA) in Trivandrum.
- Presented a paper titled "Innovative Health Financing in India: A Comparative Analysis of Three States" at the IGC-Jadavpur University-ISI West Bengal Growth Conference organized by Department of Economics, Jadavpur University.

Invited Speaker (8):

- Speaker of a session on "Measuring Financial Risk Protection" at the workshop on Measuring Health Systems Performance organized by Health Systems Transformation Platform (HSTP) & Harvard T.H. Chan School of Public Health;
- Invited lecture on "Extraction of NSS Data" at the Department of Business Economics, University of Delhi;
- Invited lecture on "**Research Issues in Education & Health Sector using NSS Data**" at the Department of Business Economics, University of Delhi;
- Invited lecture on "Advance Panel Data Econometrics & Application" at the Department of Financial Studies, University of Delhi;
- Taught "**Principal Component Analysis Theory and Application**" at a Two-day Research Methodology Workshop for PhD & M.Phil. students at the Department of Economics, University of Calcutta;
- Invited Lecture on "Panel Data Econometrics" at the Department of Financial Studies, University of Delhi;
- Special lecture on "Factor Analysis" at the Department of Business Economics, University of Delhi;
- Invited lecture on "Principal Component Analysis" at the Department of Business Economics, University of Delhi;

Shruti Rana Sharma

Publication: Journal - 1

🛛 Ritika Mahajan

Publication: Journal – 4

Award: Awarded Nancy Raina Best Research Paper Award by Integrating Spirituality and Organizational Leadership (ISOL) Foundation at the India International Centre, New Delhi

Invited Speaker: 5

Sapna Narula

PhD Scholar: 7 (Awarded 2)

Publication: Journal -12, Edited volume -6, Newspaper article -3

Invited Speaker: 8

Sponsored project	Conference Organization	MDP & similar research events	Book & Journal (Published)
13	4	3	3
Publication	Conference attended	Invited speaker	PhD Scholars (Awarded)
51	21	43 + 6	13 / 18 (4)

Ongoing Research

- Jaya Vasudevan
- ✓ PhD Scholar: 2
- ✓ Ongoing/proposed research:
- Status of Wetlands in Kerala: Threats & Conflict Management Strategies (Project in collaboration with the State Wetlands Authority, Government of Kerala)
- Community Participation & Conflict Resolution in *Vembanad Kol* Wetland Conservation: The Post-flood Scenario (Project in collaboration with the Meridian Institute, US)
- ADR techniques for middle level managers of business organizations (training programme in collaboration with *Madhyam*, Delhi)
- ✓ Publication: Book-1, Research article 2

Manipadma Datta

✓ Leading the Centre for Case Studies in collaboration with TERI

✓ PhD Scholar: 7

✓ Publication: Working on various research papers with the scholars

✓ Advisor/Member: Serving as PhD Committee member and examiner in various international & national institutes

Ongoing Research

Montu Bose

- ✓ PhD Scholar: 3
- ✓ Publication: 5 research articles
- ✓ Conference: EUHEA

✓ Collaboration: University of Calcutta, OP Jindal Global University, University of Delhi, University of Kalyani, WHO, NHSRC, HSTP

Shruti Rana Sharma

✓ PhD Scholar: 1

✓ Publication: 1 research article

Area of Research

✓ Sustainability, CSR, Corporate Finance, Circular Economy, Green Finance

✓ Strategy, Business Sustainability

✓ International Trade & Investment Law, Commercial Arbitration & Dispute Resolution

✓ Health Economics, Health Financing, Economics of Social Sector

Future Plan



Professional Development Programme, MDP & FDP



International Conference on Business, Economics & Sustainable Development (ICBESD)

₽

Internal Grants Committee – developing research articles/ data collection for research

Thank You!



Concept Note/Proposal on

TERI SAS CENTRE FOR SUSTAINABLE DEVELOPMENT*

July 2, 2020

Prepared by Anandajit Goswami@ (since left TERISAS) and JK Garg

Background

- TERI SAS has various departments focusing on the domains related to *natural resource* management, energy and environment, biotechnology, water studies, policy studies, and sustainable business development focusing on post graduate studies in areas of energy, environment and natural resources.
- However, in the present context of rising global, national and local challenges, study of sustainability encompasses all of them together with a holistic inter and transdisciplinary frameworks.
- For real sustainability solutions to the governance, institutional, economic, environmental, social and ecological challenges of sustainability it is important to look onto sustainability solutions from an interconnected horizontal and vertical lens.

 With this background context, TERI School of Advanced Studies, aims to establish and create a - "TERI SAS Centre for Sustainable Development" or TERISAS-CSD which will provide inter disciplinary solutions to the real challenges of the society pertaining to ecological, economic, social, environmental and governance domains of sustainability.

 The Centre will avoid any duplication of activities with the departmental research and teaching but will rather act as a fulcrum to provide sustainability solutions to the various sectors within the country and across the world by means of its Research Staff complemented by the intellectual inputs from all Departments of TERI School of Advanced Studies. In view of the foregoing

a Concept Note/proposal on

TERI SAS CENTRE FOR SUSTAINABLE DEVELOPMENT

has been prepared and submitted

Vision:

To provide long term sustainability solutions in an interdisciplinary and integrated manner for stakeholders

Mission:

To address long term integrated interdisciplinary sustainability solutions to a wide range of ecological, social, economic and governance related challenges of sustainable development

OBJECTIVE:

To enable sustainability studies and solutions in an inter/transdisciplinary framework in selected domains by incorporating academic rigour, disciplines, sustainability and policy practices, interdisciplinary networks and frameworks in a time bound manner (over short, medium and long term) Stakeholder Consultation Policy Advocacy Solutions

Awareness building through outreach and print, digital, social media

 Solicitated and Unsolicited Proposal based Research Projects

• Training and Capacity Building

- South-South Collaboration Activities
- •Annual Working Paper and Newsletter Series

Short Term (for 5 years) Stakeholder Consultation

Policy Advocacy Solutions

Awareness building through outreach and print, digital, social media

 National, Regional and International Partnerships through training and capacity building

Funded Research (Solicitated and Unsolicited Proposal based)
Annual Publication Series, Peer Reviewed Papers

Mid Term (for 5 years -10 years)

Stakeholder Consultation

Policy Advocacy Solutions

Awareness building through outreach and print, digital, social media

Blue Skies Research

 Funded Research (Solicitated and Unsolicited Proposal based)

&

•Edited and Internationally Peer Reviewed Paper and Books

Long Term (for 10 - 15 years)

PROPOSED THEMATIC THRUST AREAS OF WORK IN WHICH TIME BOUND PERSPECTIVE PLAN TO BE IMPLEMENTED

Environment, Energy, Water and Natural Resources

- o Ecological Restoration / Rehabilitation of terrestrial and aquatic ecosystems
- o Mountain Ecosystems, Ecological Security, Resilience, Disaster and SDGs
- Integrated Approaches to Biodiversity Conservation and SDGs in aquatic (freshwater, marine waters) and terrestrial ecosystems
- $\circ~$ Remediation of wastes and waste water
- $\circ~$ Energy for All and Sustainability and SDGs ~
- $\circ~$ Water, Sanitation and Health
- Natural resource access, security, geopolitics and SDGs

0 -----

Integrated Policy Analysis and Sustainability Solutions

 Integrated Policy Modelling for Ecological, Economic, Environmental and Social Domains of Sustainability

15 year goals and targets:

- 2 blue skies research projects
- 2 solicited and 2 unsolicited research projects through grants
 - 2 edited books
 - 10-15 peer reviewed publications

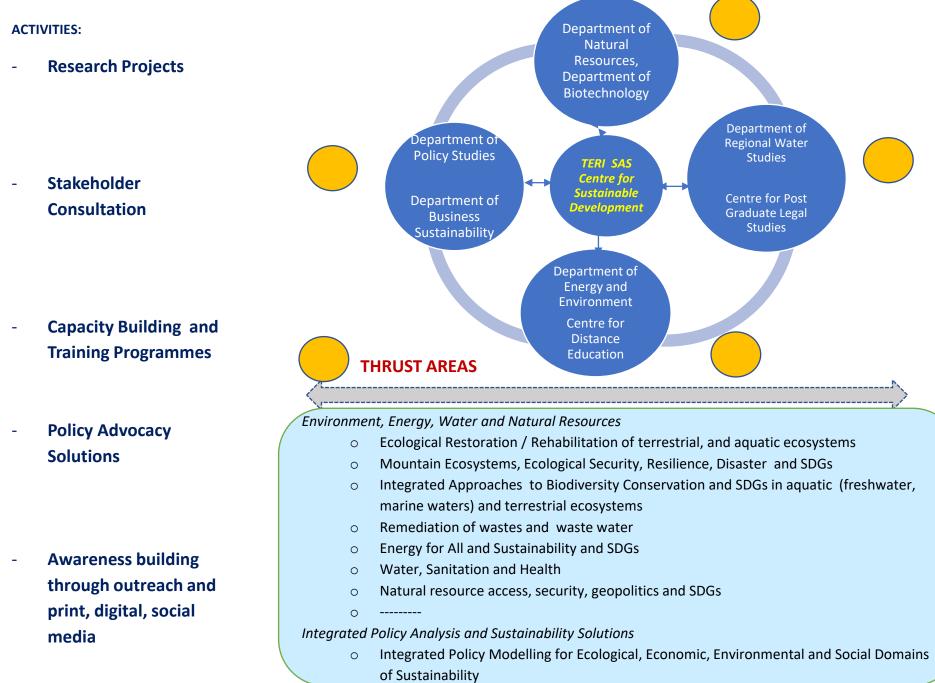
10 year goals and targets:

- 1 international, 1 regional and 1 national workshop
 - 2 solicited and 2 unsolicited research projects
- 1 annual publication. 4 working papers and 5-10 peer reviewed papers

5 year goals and targets :

- 2 solicited and 2 unsolicited research projects
- 2 South-South Training and Capacity Building Programme
 - 1-5 Peer reviewed publications

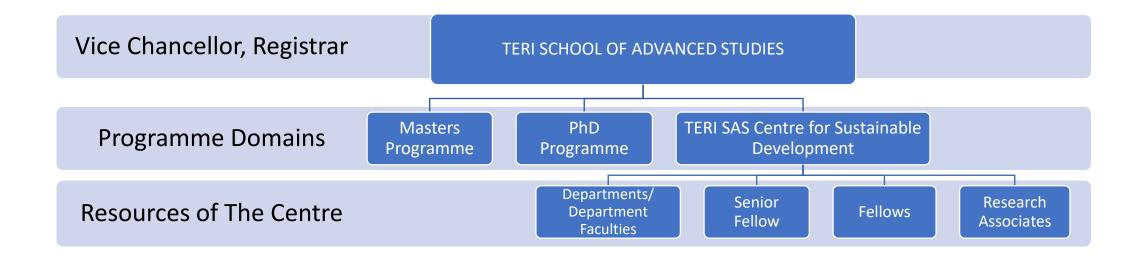
CENTRE STRUCTURE, THRUST AREAS AND FUNCTIONING



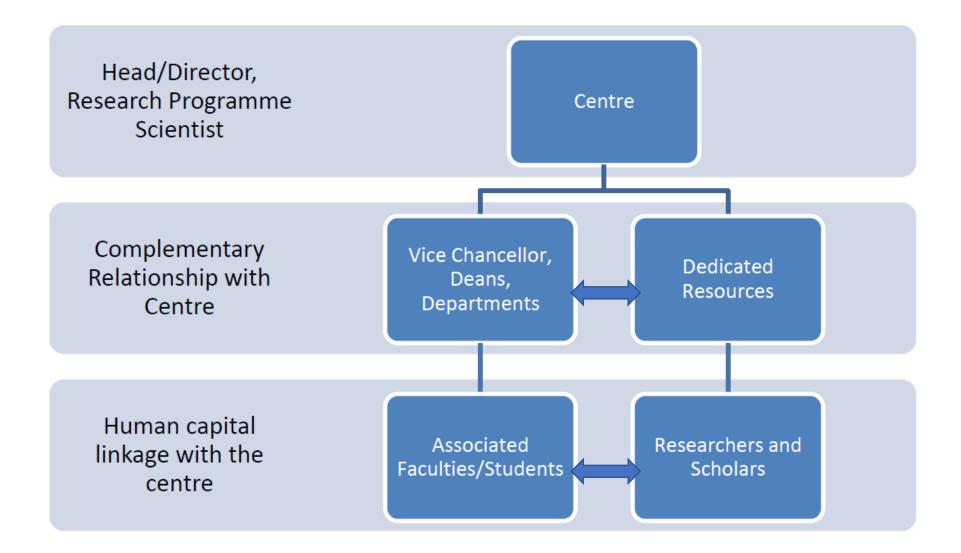
FUNDING:

- MOEFCC
- MoES
- DST
- Ministry of Agriculture, Fishery and Animal Husbandry
- Jal Shakti
- Ministry of Steel & Mines
- Ministry of Health
- Railways
- State Environment and Science Departments
- State Planning Departments
- State Water Departments
- State Forest Departments
- State Land Use Boards
- Mining Departments
- State Public Health and Engineering Departments
- ICIMOD
- World Bank
- IUCN
- UNEP
- UNDP
- ADB
- UNICEF
- MacArthur Foundation
- Water Aid
- Action Aid
- World Bank
- SIDA
- CIDA
- -----

Centre and TERI SAS Relationships



Senior Fellow as desired by the Academic Council will head the centre



IMPLEMENTATION THROUGH

INSTITUTIONAL SYNERGIES BETWEEN DEPARTMENTS AND CENTRE

- Centre will have dedicated human and financial resources
- Departmental faculty to be an adjunct/associate faculty to the centre based on their academic knowledge and skill-sets so that in case of relevant projects their academic rigour, skill-sets and intellectual inputs are also incorporated for the smooth operation of all activities of the centre

HUMAN RESOURCES

Research Staff Designation	Equivalent Designation (UGC nomenclature)	Research staff Number (Requirement to start the research centre*)
Senior Fellow	Professor	1 (1)
Fellow	Associate Professor	1 (1)
Associate Fellow	Assistant Professor	2
Research Associate	Lecturer	2 (1)
Junior/Senior Research Fellows		4 (1)
Office Assistant		1 (1)

* Need for implementation of the TERISAS-CSD

Tentative Budgetary Generation/outlay Projections

Activities	Short term	ort term M1id term		Budget (lakhs)		
	1-5 years	1-10 years		Short Term	Mid Term	Long Term
Solicited and Unsolicited Proposal Based Research Projects	4*	4	4	200	500	1000
Training and Capacity Building	1	3		20	40	60
South-South Cooperation Programmes	2			20	30	40
International Training, Capacity Building and Awareness Generation Programme	-	1		20	40	60
Blue Skies Research			2	30	40	100
Annual Publications (approx.) (jointly with the faculty)	1-5	5-10	10-15	20	30	40
	Total			310	680	1300

* Numbers

Grand Total: 2290 lakhs = 22.90 crores

Operationalisation of TERISAS-CSD will require

- Notification of the Centre
- Appointment of Centre Head/Director
- Researchers
- Seed money (say Rs. 10,00,000)
- Office

From Existing Faculty

To initiate Centre's activities it is proposed to prepare concept notes on:

- Regional Ecosystem Integrity Assessment studies in the Himalayas
- Rehabilitation of abandoned mined area

thanks for your patience

Activities-wise Likely Funding Agencies

Activity	Short Term	Mid Term	Long Term
Solicited and Unsolicited Proposal Based Research Projects	MOEFCC State Environment and Science Departments State Planning Departments ICIMOD, World Bank IUCN, UNEP, UNDP etc.	ICIMOD World Bank IUCN UNEP UNDP	State Environment and Science Departments, State Planning Departments, Water Aid, Action Aid, World Bank, ADB, UNICEF, UNDP, UNEP, MacArthur, SIDA, CIDA UNDESA, Shakti Foundation UNEP, UNDP, Oil and Gas Public Sector Companies, GIZ, KFW, Ministry of Petroleum and Natural Gas, Foundations (like KAF and other countries); Tata and other Trusts etc.
Training and Capacity Building	Jal Shakti, MOEFCC, MES, Ministry of Agriculture, Fishery and Animal Husbandry, State Water Departments, State Forest Departments, Corporate CSRs, Thermal Power Plants, NHPC, NTPC	Water Aid, Action Aid, World Bank, ADB, UNICEF, UNDP, UNEP MacArthur, SIDA, CIDA	UNDESA, Shakti Foundation, UNEP, UNDP Page, UNDP, Oil and Gas Public Sector Companies, GIZ, KFW, Ministry of Petroleum and Natural Gas, Foundations (like KAF and other countries), Tata and other Trusts

Activities-wise Likely Funding Agencies

Activity	Short Term	Mid Term	Long Term
South-South Cooperation Programmes	UN Agencies	UN and Multilateral Agencies	Intergovernmental Agencies
International Training, Capacity Building and Awareness Generation Programme	International Donor Community	International Donor Community and Trust and Charity Organisations	Intergovernmental Agencies
Blue Skies Research	Corporate R&D Funds	Government and Corporate Funds	National Science Foundations and International Science Foundations
Annual Publications	Corporates Medium Size Publication Houses	Large Academic and Popular Publication Houses Online Sale of Publications	Large Academic and Popular Publication Houses Online Sale of Publications

Thematic Areas, likely Funding Agencies and TERISAS Departments

Current Thematic	Likely Funding Agencies	Likely TERI SAS Departments to be
Thrust Areas		engaged
Mountain Ecosystems,	MOEFCC, State Environment and Science	Department of Natural Resources
Ecological Security and SDGs	Departments, State Planning	Department of Policy Studies
	Departments, ICIMOD, World Bank, IUCN,	Department of Business Sustainability
	UNEP, UNDP	Department of Energy and Environment
Integrated Approaches to	Jal Shakti, MOEFCC, Earth Sciences,	Department of Natural Resources
Biodiversity Conservation	Ministry of Agriculture, Fishery and	Department of Regional Water Studies
and SDGs in aquatic	Animal Husbandry, State Water	Department of Policy Studies
(freshwater, marine waters)	Departments, State Forest Departments,	Department of Energy and Environment
and terrestrial ecosystems	Water Aid, Action Aid, World Bank, ADB,	
	UNICEF, UNDP, UNEP, MacArthur, SIDA,	
	CIDA,	
Ecological Restoration /	MOEFCC, Earth Science, State Land Use	Department of Natural Resources
Rehabilitation of land,	Boards, Mining Boards, Ministry of	Department of Regional Water Studies
wastes, waste water	Agriculture, Fishery and Animal	Department of Policy Studies
	Husbandry, Corporate CSRs, Thermal	Department of Energy and Environment
	Power Plants, NHPC, NTPC	

Thematic Areas, likely Funding Agencies and TERISAS Departments

Current Thematic Thrust Areas	Likely Funding Agencies	Likely TERI SAS Departments to be engaged
Natural resource access, security, geopolitics and SDGs	MOEFCC, Jal Shakti, MORD, Ministry of Agriculture	Department of Natural Resources Department of Regional Water Studies Department of Policy Studies Department of Energy and Environment
Energy for All and Sustainability and SDGs	UNDESA, Shakti Foundation, UNEP, UNDP Page, UNDP, Oil and Gas Public Sector Companies, GIZ, KFW, Ministry of Petroleum and Natural Gas, Foundations (like KAF and other countries), Tata and other Trusts	Department of Natural Resources Department of Regional Water Studies Department of Policy Studies Department of Energy and Environment
Water, Sanitation and Health	Jal Shakti, Ministry of Health, State Health, Departments, State Public Health and Engineering Departments	Department of Natural Resources Department of Regional Water Studies Department of Policy Studies Department of Energy and Environment