



AMITY UNIVERSITY

UTTAR PRADESH

Amity Academic Staff College

Organizes

Five Days On-Line Faculty Development Programme

On

“Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals”

(Under GURU-DAKSHTA Faculty Induction Programme (Module 9: Environmental Consciousness and Sustainable Development Goals)

From

Date: 1ST -5TH June 2021



PROGRAMME SCHEDULE

Faculty Development Programme	
<i>Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals</i>	
Day 1: 01/06/2021 (Tuesday) Inaugural Ceremony	
11:30pm-11:35pm	Lighting of Lamp & Saraswati Vandana
11:35pm-11:50pm	Welcome Address by Dr. S.P Singh, Director ASNRSD & Dr. Manju Ranjan Rawat (Joint Coordinator, AIES)
11:50pm-12:00pm	Introduction to FDP by Dr. Renu Dhupper, Joint Coordinator, AIES
12:00pm-12:05pm	Address by Prof. Tanu Jindal , <i>Group Additional Pro- Vice Chancellor (R&D), Amity University Uttar Pradesh, India</i>
12:05pm-12:10pm	Address by Prof. D. K. Bandyopadhyay Chief Advisor FPO / Chairman, Amity Law School, Mentor, Amity Institute of Environmental Sciences, Amity University Uttar Pradesh, India
12:15pm-12:25pm	Address by Prof (Dr.) Balvinder Shukla Vice Chancellor, Amity University Uttar Pradesh, India
12:25pm-12:45pm	Address by Guest of Honour Prof. (Dr.) Anil K. Gupta Professor & Head of Division, National Institute of Disaster Management, Ministry of Home Affairs, Government. of India Topic: "Ecosystems, Disasters and Development in Post-2021, and Context to Pandemics"
12:50pm-01:10pm	Address by Guest of Honour Mr David W. Everhart Co-Founder & CEO, Ionis international (London, UK)
01:10pm-01:20pm	Vote of Thanks by Prof. (Dr.) Sujata Khandai Dy. Dean (Academics) & Director, ACCF, Amity University, Noida
01:20pm-02:00pm	LUNCH

Program Coordinators:

1. Dr. Renu Dhupper, Joint Coordinator, AIES, rdhupper@amity.edu 9810804964
2. Dr. Manju R Rawat Joint Coordinator, AIES mrranjan@amity.edu 9868966482
3. Dr. Ambrina Sardar Khan AP-II, AIES, askhan@amity.edu; 8586069760
4. Dr. Maya Kumari AP-II, ASNRSD, mkumar@amity.edu 9873658891
5. Dr. S P Singh Director, ASNRSD, spsingh12@amity.edu 9870391654

Inaugural Session:

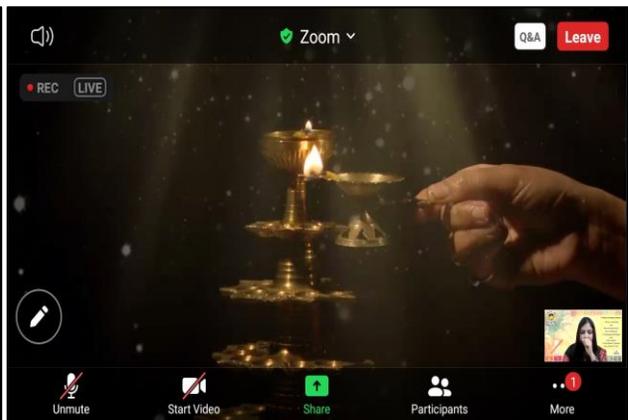
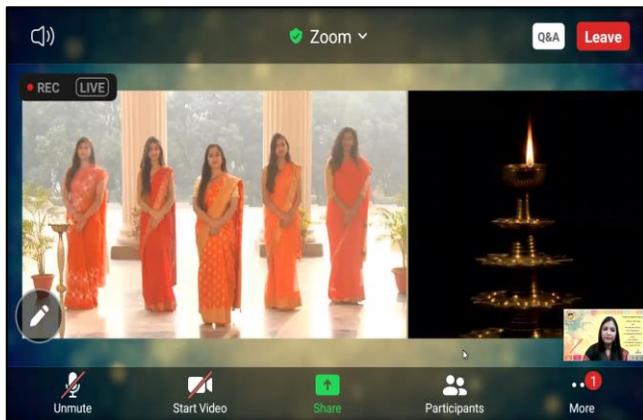
The Five Days On-Line Faculty Development Programme On “*Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals*” (Under GURU-DAKSHTA Faculty Induction Programme (Module 9: Environmental Consciousness and Sustainable Development Goals) was started from June 1, 2021. Total 381 people have registered for the event and 361 attended the event on the first day.





Welcome Address:

Presiding the inaugural of the Faculty Development Programme, Dr. Ambrina Sardar Khan, Assistant Professor, Amity Institute of Environmental Sciences, AUUP on behalf of Hon’ble Founder President Sir, Hon’ble Chancellor Sir and Hon’ble Vice Chancellor, welcomed all the respected dignitaries and the participants of the Faculty Development Programme. She gave a brief introduction of all resource persons and about Amity University and FDP. The event started with the curtain raiser followed with the invocation of Goddess Saraswati by rendition of Saraswati Vandana and the lighting of the lamp of knowledge in virtual mode.



Prof. S. P. Singh, Director, ASNRSD



He welcomed all the panelist, eminent participants, Hon’ble Vice chancellor, Dr. D.K. Bandyopadhyay and Dr. Tanu Jindal and thanked them for sparing their time for FDP, he also welcomed all the respected dignitaries and the participants of the Faculty Development Programme. He talked about the Overview of SDGs. He said that if we want to restore our environment, the green technology is the only way out and it is the time that we focus on the green technologies. He emphasized on the role of the stakeholders, who are nonetheless but the teachers. He also congratulated the entire organizing team of FDP and wished the success of the program.

Dr. Manju Ranjan Rawat, Joint Coordinator, Associate Professor, Amity Institute of Environmental Sciences, Amity University Uttar Pradesh



She welcomed all the dignitaries, participants for having spared their time and thanked the revered guides & experts, colleague from connected institution. She has emphasized how important these sustainable development goals are and how we can achieve them with the help of the knowledge we gain from these five days FDP program. She said that in the light of growing global problems, countries need to employ technologies and approaches towards economic activity that are environmentally less harmful and that preserve resources for future generation. This FDP is one of the initiatives.

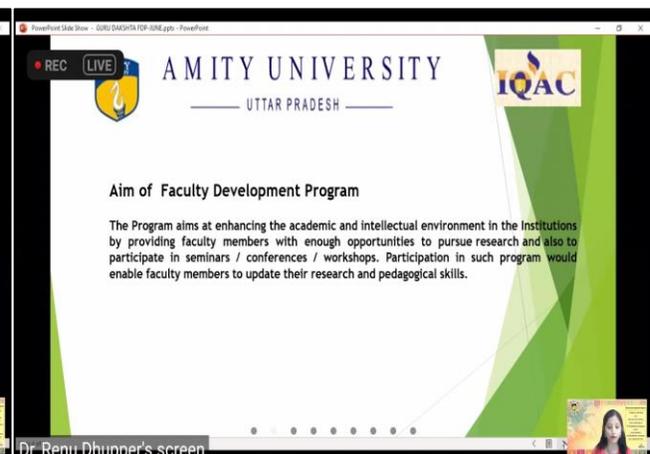
Introduction of the FDP

Dr. Renu Dhupper, Joint Coordinator, AIES:



Addressing to more than 350 participants are attending the FDP from all over the country Dr. Dhupper explained about the Objectives, Expected Learning Outcomes and Themes/Focus Areas of the FDP. She mentioned the importance of FDP that how it will help the participants to build sensitivity and develop awareness on Green Technology and Sustainable Development Goals (SDG) among participants, to foster skills in thinking, reasoning, enquiring, and making decisions about the environment and world around them, to promote critical evaluation of the status and future potential of India about SDG. At the end of the module

participants will be able to: Appreciate the role of Environmental Consciousness and SDG for a future society., Identify their critical role in the march of nation towards attaining SDG., realize this role by appropriately integrating SDG into their teaching and research.



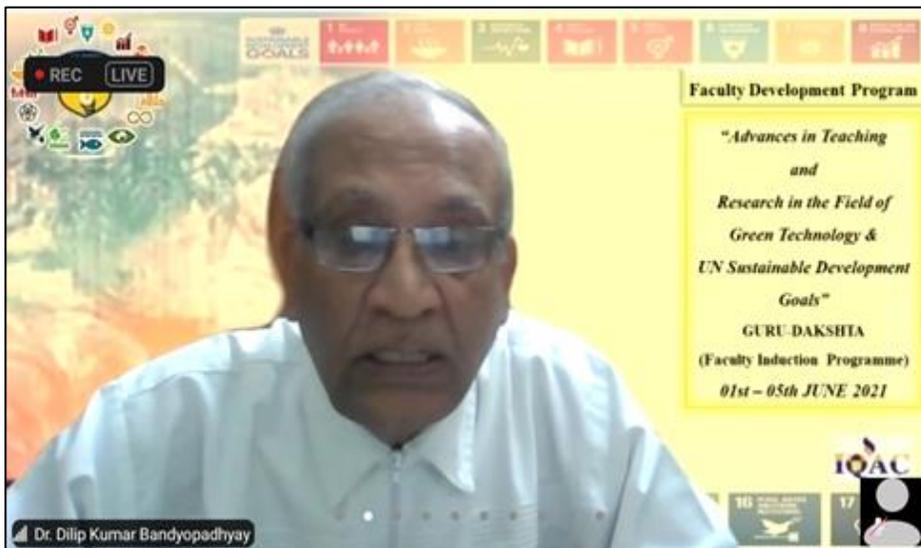
Prof. Tanu Jindal, Group Additional Pro- Vice Chancellor (R&D), Amity University Uttar Pradesh:



She addressed the gathering and welcomed all the dignitaries and participants. She gave a presentation about green technology for sustainable development. Going green means developing a new technology. She spoke about circular economy and sustainable development, Emerging Green Technologies (EGTs), with respect to Circular Economy and Sustainability, about industry leaders in key sectors like cars, aviation, consumer goods, food and drink, household products clothing etc. She also gave examples of the different companies related to key sectors like BMW-Germany, Electrolux, Nestle- Switzerland, H & M and Levi Strauss and company. She also appreciated the entire team of FDP.

Prof. D. K. Bandyopadhyay, Chief Advisor FPO / Chairman, Amity Law School, Mentor, Amity Institute of Environmental Sciences, Amity University Uttar Pradesh

He said that UGC came up with the 11-quality mandate. One of the quality mandates is GURU-DAKSHTA. What are the activities to be done in those mandates and manifestation is that we are successfully implemented it and all thanks and credit goes to our Hon'ble Vice Chancellor. This is all due to tremendous amount based on Hon'ble Founder President and Hon'ble Chancellor.



He has given definition of Sustainable development Goal by giving examples. He said Development states that Humanity could make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. He talked about the definition of Sustainable development most provided from "Brundtland Report". Brundtland Report: "Sustainable

development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The Board of Sustainable Development of US, National Science of Academic. The basic aim of the report was to clear the definition of sustainable goals by four basic points: what should we sustain, what should we develop, and how long should it all take. He also Introduced the four pillars of sustainability: Human, Social, Economic and Environmental. He appreciated and congratulated all the team of FDP. He also shows desire of having more FDPs.

Prof (Dr.) Balvinder Shukla, Hon'ble Vice Chancellor, Amity University Uttar Pradesh:

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01st - 05th JUNE 2021

Prof. (Dr.) Balvinder Shukla
Vice Chancellor
Amity University Uttar Pradesh, Noida, India

- Prof. (Dr.) Balvinder Shukla is a Ph.D. from Queen's University, U.K.
- She has over 3 decades of rich scholarly experience in Industry & Academia.
- She is Professor of Entrepreneurship, Leadership & IT and the Vice Chancellor of Amity University Uttar Pradesh.
- She has been one of the key team members, spearheading, and instrumental in, the exponential growth of Amity Group engaged in Higher Education.

Dr. Maya Kumari's screen

She appreciated and congratulated all the team for organizing such important and professional program for the faculty development. She said that the real sustainable goal is the mandate which we all contribute for attaining the sustainable development goals. She has talked about how the environmental shift is happening and its need immediate attention of researchers and academicians. She was hopeful that the five days FDP will give more ideas of research and green technologies in the coming time. She has congratulated the entire team of NRES domain and wished to see many more event like this in future.

Prof. Balvinder Shukla

Mr. Naresh

Prof. Balvinder Shukla

Dr. Ambrina Sardar Khan

Dr. Maya Kumari

Prof. (Dr.) Anil K. Gupta Prof. Professor & Head of Division, National Institute of Disaster Management, Ministry of Home Affairs, Government of India

He was the Guest of Honour for the FDP. He talked about Ecosystems, Disasters and Development in Post-2021, and Context to Pandemic. He said that first of all, questions are important. For any kind of academic, research and development, questions are most important. We mostly ask the student to frame the question. He spoke about "environmental awakening" journey in 1972 with UN conference on human environment. He gave some examples related to Bhopal disaster. How it took place. All legal frameworks came after Bhopal disaster. We will need to approach, promote green technology and ecofriendly culture not only as a luxury or fashion or self-appreciation, but the green technology, eco friendliness and environmental safeguards is needed to be promoted as a basic requirement of human sustenance and sustainability.

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Prof. (Dr.) Anil K. Gupta
Professor & Head of Division, NIDM, Ministry of Home Affairs, GOI

- Dr. Anil Kumar Gupta is a sustainability - risk management strategist working in the area of disaster management, environment and climate resilience for more than 25 years with national, sub-national and business administrations.
- He steered international and national projects of policy research - planning and capacity building and established new approaches, viz. ecoDRR, CCA-DRR integrated mainstreaming Loss & Damage focused Climate Risk Management Framework, Industrial, Urban, Business continuity resilience and Tools like DIA (with EIA/SEA, Auditing & LCA), Mitigation analysis, PDNA, etc.
- He was member of Government / Ministerial delegations contributed to international policy processes including Ban HFA-2/SFDRR, etc.

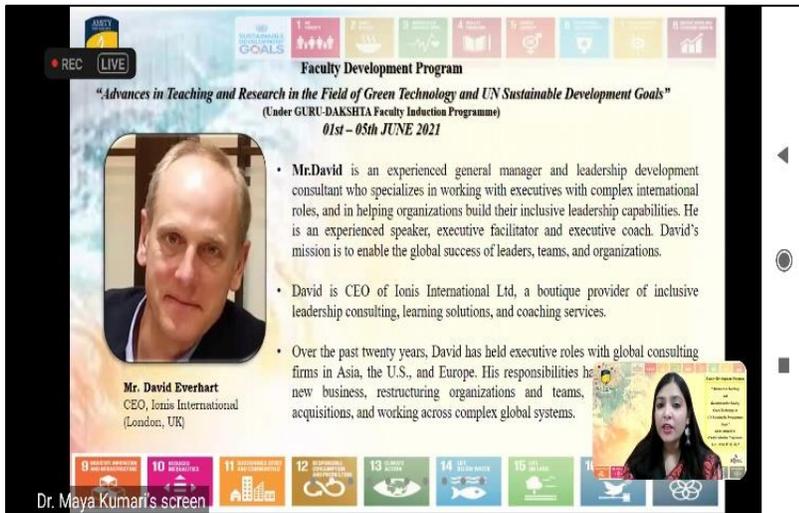
Dr. Maya Kumari's screen

Zoom

REC LIVE

Unmute Start Video Share Participants More

Mr David W. Everhart, Co-Founder & CEO, Ionis international (London, UK)



He was the Guest of Honour of FDP. He spoke about Integrative global leadership. Next generation leader's must be inclusive and global to solve the climate crises.

He explained about his studies and work. He said that the world is more volatile. He talked about VUCA +DI (uncertain, complex, ambiguous (VUCA) + diverse and interdependent). He said that CAUVID (COVID) reality needs a refreshed leadership approach. Preparing the next generation for requires a shift from predominate knowledge focus to a mindset focus. The next generation

needs mystery of three domains i.e. Inclusion, sustainability, leadership. He explained about value and essential mindsets for integrative global leaders. SDGs that integrative global leadership supports. He discussed about Amity University Values. What is Amity role in shaping the values of Amity's graduates. What values do you want Amity University graduates to leave your school with?



At the end of Inaugural session, the customary duty of presenting a vote of thanks was done by Dr. Shivangi S. Somvanshi, Assistant Professor, AIES.



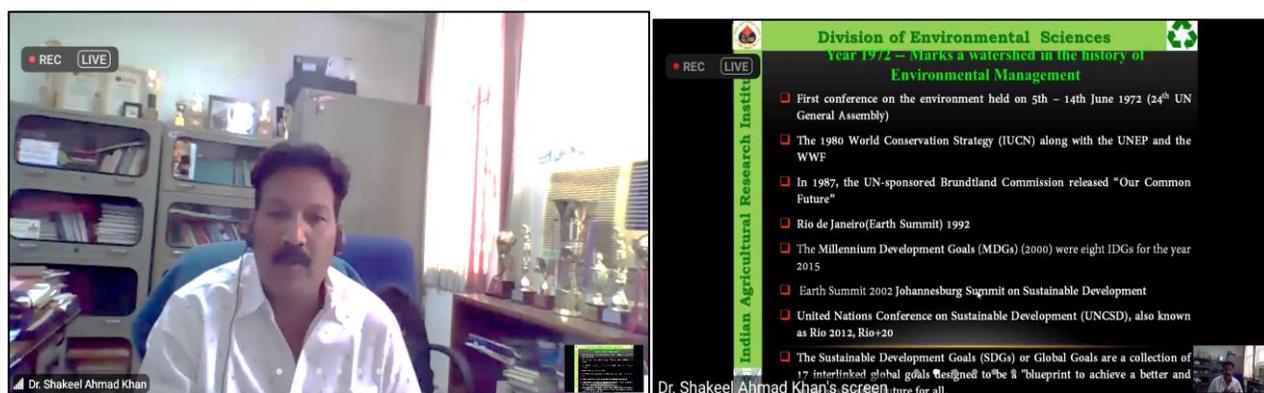
PLENARY SESSION – I- The first session of the FDP has three speakers from the various expert areas across the country who have spoken and discuss the various issues related to Sustainable development goals in the field of education and economy. Total 381 people have registered for the event and 361 attended the event on the first day.

PLENARY SESSION – I 02:00pm-05:45pm	
02:00pm-02:40pm	Dr. Shakeel Ahmad Khan , Principal Scientist Division of Environmental Sciences, ICAR- IARI Topic: “Role of Higher Education in SDGs” <i>Align with the SDGs</i>
02:40pm -02:50pm	Address to queries by Dr. Shakeel
02:55pm-03:35pm	Dr. Anshu Singh , Deputy Director General, Ministry of Environment, Forest & Climate Change Topic: “Metrics for sustainability their applications” <i>Align all the SDGs</i>
03:35pm-03:45pm	Address to queries by Dr. Anshu Singh
03:50pm-04:40pm	<i>Interactive discussion</i>
04:40pm-05:15pm	Our planet: Our Business. https://www.youtube.com/watch?v=JdWQJq2OkJs
05:15pm- 05:25pm	Vote of Thanks by Dr. Manoj Chander Garg
05:25 pm -05:45 pm	Online Assessment for PLENARY SESSION – I
LINK	https://youtu.be/vxj4SczQOWs

The first plenary session of the FDP was commenced by MC, Dr. Maya Kumari, Assistant Professor, ASNRSD.

Dr. Shakeel Ahmad Khan, Principal Scientist Division of Environmental Sciences, ICAR- IARI

He talked about “Role of Higher Education in SDGs”. He discussed about Introduction, why SDGs, SDGs 4 & 4.3 deals in higher education, some initiatives and 2030 framework main goal of SDG. What is the chronology, and how it started? Target 4.3 is officially monitored by UNESCO Institute of Statistics through the indicator “gross enrolment ratio for tertiary education.



He also discussed about the ESD and higher education, challenges for SD in higher education, how to integrate SD in higher education? What is sustainability literacy (Sulitest), Aim and structure of Guidance framework, Universities and higher education institutions have a key role to play in all of the ESD-GAP priority. The sustainable development goals or global goals are a collection of 17 interlinked global goals designed to be a “blueprint to achieve a better and more sustainable future for all.

Dr. Anshu Singh, Deputy Director General, Ministry of Environment, Forest & Climate Change

She discussed about “Metrics for sustainability their applications”. She talked about What is sustainability, origin of sustainable development goals, Dimensions of SDGs like social, economic and environmental, Implementation of SDGs, Global Indicator Framework (GIF), Sustainable development matrices like purpose and opportunity. She also gave few examples of matrices for environment related SDGs like Goal 12 (sustainable consumption and production), Goal 13 (climate action), goal 15 (life on land) .

Sustainable Development Goals	Number of Indicators in GIF 1.0	Number of Indicators in GIF 2.1	Number of Indicators in GIF 3.0
SDG 1: No Poverty	19	21	22
SDG 2: Zero Hunger	19	19	18
SDG 3: Good Health and Well-Being	41	42	41
SDG 4: Quality Education	20	19	20
SDG 5: Gender Equality	29	29	29
SDG 6: Clean Water and Sanitation	19	16	16
SDG 7: Affordable and Clean Energy	5	5	5
SDG 8: Decent Work and Economic Growth	40	32	33
SDG 9: Industry, Innovation and Infrastructure	18	16	16
SDG 10: Reduced Inequalities	7	9	11
SDG 11: Sustainable Cities and Communities	16	15	15
SDG 12: Responsible Consumption and Production	17	15	15
SDG 13: Climate Action	4	5	6
SDG 14: Life Below Water	13	11	11
SDG 15: Life on Land	21	16	16
SDG 16: Peace, Justice and Strong Institutions	18	19	21
SDG 17: Partnership for the Goals	13	13	13
Total Number of Indicators	306	302	308

The lecture was followed up by a documentary “Our planet: Our Business” was showcased in the last. Dr. Maya Kumari, Assistant professor ASNRSD, the MC of the session had highlighted the importance of the documentary. The documentary has received lots of appreciation from the participants. All the documentaries were shortlisted by Dr. Ambrina Sardar Khan, Assistant professor, AIES for the FDP. The purpose and aim of these documentaries are to make the participants to visualize the massive destruction if environment and how we can conserve it with help of sustainability.



At the end of the session, the customary duty of presenting a vote of thanks was done by Dr. Manoj Chander Garg, Assistant Professor, AIES. The day was very fruitful, and the participants have thoroughly enjoyed the sessions. The sessions with all the speakers were very interactive and knowledge gaining.



The Online Assessment for Plenary Session –I was done at the end. The google form was pasted in the chatbox and the participants were supposed to attempt all the questions. The aim of the assessment was to know that how actively and sincerely the participants have attended the FDP. The total responses received on the first day were 180.

PLENARY SESSION – II- The second session of the FDP has four speakers from the different expertise across the country who have spoken and discuss the various concerns associated with Sustainable development goals and environmental pollution. Total 478 people have registered for the event and 381 attended the event on the II day.



Day 2: 02/06/2021 (Wednesday)	
PLENARY SESSION – II	
01:00pm-06:30pm	
01:00pm-01:40pm	Dr. (Mrs) Namita Joshi Professor Dept. of Environmental Science, 2nd Campus, Gurukul Kangri University Kanya Gurukul Campus, Haridwar Topic: Environmental Sustainability, clean water and sanitation. <i>Align with SDG 6 & 15</i>
01:40pm-01:50pm	Address to queries by Dr. (Mrs) Namita Joshi
01:55pm-02:35pm	Dr Awkash Kumar , CEO and Founder of SSE (Sustainable Solutions for Environment), SAGE (Sustainable Approach for Green Environment) and General Secretary of SOCLEEN (Society for Clean Environment) Topic: “Air Quality Management for Sustainability” <i>Align with SDG 15</i>
02:35pm-02:45pm	Address to queries by Dr. Awkash Kumar
02:50pm-03:30pm	Prof. A. L. Aggarwal , Air Pollution and EIA Expert, Emeritus Professor Indian air quality studies interactive repository Topic: “Environmental Impact Assessments (EIA) in India: A Workable Tool for Achieving SD” <i>Align with SDG 11</i>
03:30pm-03:40pm	Address to queries by Prof. A. L. Aggarwal
03:45pm-04:25pm	Dr. Saumyaditya Bose PhD CEng (Ind), Proprietor BCS (Bose Consultancy Services) Topic: “Industrial Pollution and Sustainable Development in India”. <i>Align with SDG 6, 12 & 13</i>
04:25pm-04:35pm	Address to queries by Dr. Saumyaditya Bose
04:40pm- 05:20pm	Dr. Ambrina Sardar Khan , Assistant Professor, Amity Institute of Environmental Sciences, AUUP Topic: “History of Environmental concerns & SDGs” <i>Align with all the SDGs</i>
05:20pm- 05:30pm	Address to queries by Dr. Ambrina Sardar Khan
05:30pm-05:50pm	‘An Unequal Fight’: A Documentary on Industrial Pollution in Patancheru https://vidhilegalpolicy.in/videos/an-unequal-fight-a-documentary-on-industrial-pollution-in-patancheru/
05:50pm-06:00pm	Vote of thanks by Dr. Ashutosh Tripathi
06:00pm– 06:30pm	Online Assessment for PLENARY SESSION – II
LINK	https://youtu.be/qTtDkRU9z4g

The second day of the FDP was commenced by MC, Dr. Shivangi Somvanshi, Assistant Professor, AIES and welcome addressed by Dr. Renu Dhupper, Assistant Professor, AIES. Dr. Renu also briefed about the session of 1st day of FDP to all the participants.



Dr. (Mrs) Namita Joshi Professor & Head, Dept. of Environmental Science, Gurukul Kangri University Kanya Gurukul Campus, Haridwar.

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Dr. (Mrs) Namita Joshi
 Professor, Dept. of Environmental Science, Gurukul Kangri University, Haridwar

- She has PhD in Fisheries and Crustacean Toxicology
- She has 18 years of teaching experience and 21 years of research experience.
- She has more than 80 research publications of national and international repute to her credit.
- She is the member of Indian Academy of Environmental Sciences, Zoological Society of India, Indian Science Congress Association (ISCA), International Society for conservation of Natural resources (ISCON) and Society of Life Sciences.

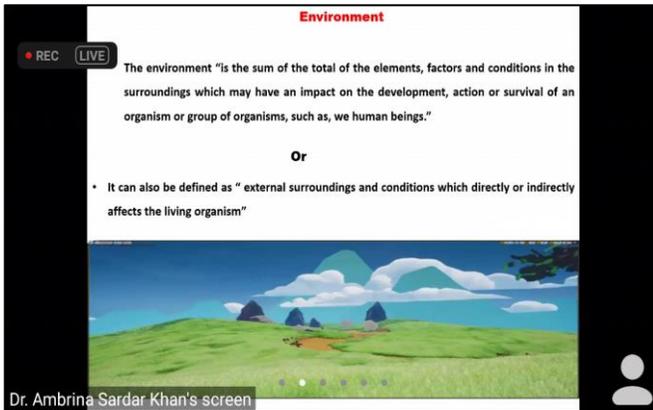
She talked on 'Environmental Sustainability, clean water and sanitation. In her talk she gave a focus on Sustainable management of water resources and access to safe water and sanitation are essential for unlocking economic growth and productivity and provide significant leverage for existing investments in health and education. She emphasized on the goal 6 and discuss its importance to ensure availability and sustainable management of water and sanitation for all. She mentioned that one in three people live without sanitation. This is causing unnecessary disease and death. Although huge strides have been made with access to clean drinking water, lack of sanitation is undermining these advances. If we provide affordable equipment and education in hygiene practices, we can stop this senseless suffering and loss of life.

She talked about the Sustainable management of water resources and access to safe water and sanitation are essential for unlocking economic growth and productivity and provide significant leverage for existing investments in health and education. The natural environment e.g., forests, soils and wetlands contribute to management and regulation of water availability and water quality, strengthening the resilience of watersheds and complementing investments in physical infrastructure and institutional and regulatory arrangements for water access, use and disaster preparedness.

Environmental Sustainability, Clean water and Sanitation

Prof. Namita Joshi
 Department of Environmental Science
 Gurukul Kangri (Deemed to be) University,
 Haridwar
 Email: drnamitaenv@gmail.com

She also focused that how water shortages undercut food security and the incomes of rural farmers while improving water management makes national economies, the agriculture and food sectors more resilient to rainfall variability and able to fulfil the needs of growing population. Protecting and restoring water-related ecosystems and their biodiversity can ensure water purification and water quality standards.



Dr Awkash Kumar, CEO and Founder of SSE (Sustainable Solutions for Environment), SAGE (Sustainable Approach for Green Environment) and General Secretary of SOCLEEN (Society for Clean Environment).

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Dr. Awkash Kumar is a CEO and Founder of Sustainable Approach for Green Environment (SAGE) and Team Leader (Innovation) for Ambient and Industrial Air Cleaning System at Environmental Infrastructure and Clean Technology (EICT) Lab of IIT Bombay. He is visiting faculty at SIES, Nerul, New Mumbai and G N Khalsha at Matunga, Mumbai of Maharashtra State. He has completed his Master and Ph.D. from Centre for Environmental science and Engineering (CESE), IIT Bombay in 2016 and has been in teaching assistantship in IIT Bombay for 5 years. He has worked in collaboration with Aarhus University, Denmark during PhD.

His areas of expertise are Air Quality Management, Development of Air Quality Framework, Application of Air Quality Modelling at Urban, Regional and Local Scale, Meteorological Modelling and Forecasting, Air Quality Forecasting, Vehicular Pollution Modelling, Evaluation of Control and Management Strategies for Air Pollution Sources such as Industrial and Vehicular Sources, and the Source Apportionment Study.

He gave lecture on 'Air Quality Management for Sustainability'. He highlighted some important topics like air pollution and its impacts, air quality assessment, air quality monitoring, air quality modelling and control scenario. etc. The overall focus of the lecture was to provide innovative approaches to air pollution control strategies and cost-effective solutions to reduce air emissions in order to support the initiatives of achieving sustainable air quality.

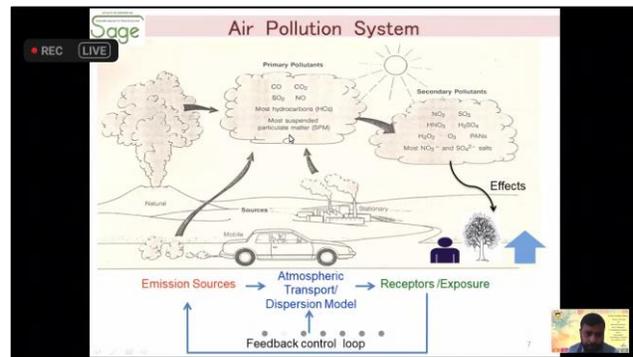
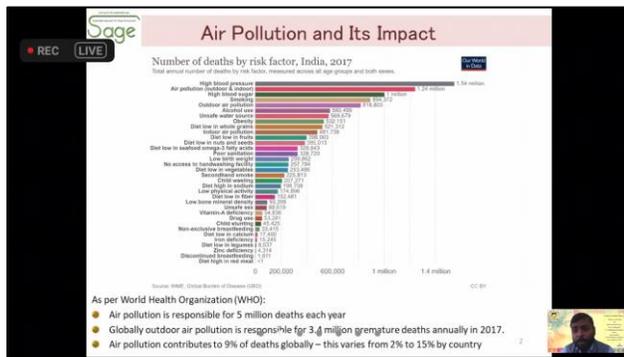
The key aspects covered were of sustainable air pollution management include sustainable energy and transportation, green infrastructure, sustainable and energy-efficient buildings, cost-effective air quality monitoring systems, citizen science, life cycle analysis, and cost-benefit analysis of sustainable approaches to reduce emissions. Highlighting the theme of the FDP, he presented the current state-of-the-art in strategies for cost-effective air pollution measurements, modelling, and controls towards sustainable communities. He also highlighted the efforts to combat air pollution that will contribute to SDG 3 (good health and well-being), SDG target 7.2 on access to clean energy in the home, SDG target 11.6 on air quality in cities, SDG target 11.2 on access to sustainable transport and SDG 13 (climate action), as well as the goals of the Paris Agreement on climate change.

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Air Quality Management for Sustainability

An IIT Bombay Startup
 Let's go to the sustainability age
 Sustainable Approach for Green Environment
Sage

Presented by
Dr Awkash Kumar
 PhD, IIT Bombay
 CEO and Founder at SAGE
 Powai, Mumbai
www.sagenv.com
 Email: awkash.sagenv@gmail.com



Air Quality Modelling for Control Scenario

- Scenario H1 = 10% increment of stack height
- Scenario H2 = 25% increment of stack height
- Scenario H3 = 50% increment of stack height
- Scenario F1 = Low Sulphur Heavy Stock (LSHS) to Gas, Coal to Gas, Gas to Gas (no Change for gas)
- Scenario F2 = Low Sulphur Heavy Stock (LSHS) to Light Diesel Oil (LDO), Coal to Gas (Coal to 50% coal and 50% Gas for TPCL, Unit-8), Gas to Gas (no Change for gas)

Control management strategies have been applied for industrial sources and modelling has been done for reduction of air pollution level.

The modelling has been done for hourly annual average, highest daily average and highest hourly average.

The above five scenarios have been applied for NO_x and PM.

Only scenario H1, H2 and H3 have been applied for SO₂ and scenario F1 and F2 cannot be applied for pollutant SO₂, because the SO₂ emission data were not available for fuel change in literature for Mumbai city.

Dr Awkash Kumar's screen

Air Quality Assessment Using Modelling

Dr Awkash Kumar's screen

Prof. A. L. Aggarwal, Air Pollution and EIA Expert, Emeritus Professor Indian air quality studies interactive repository

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Prof. A. L. Aggarwal
Air Pollution and EIA Expert,
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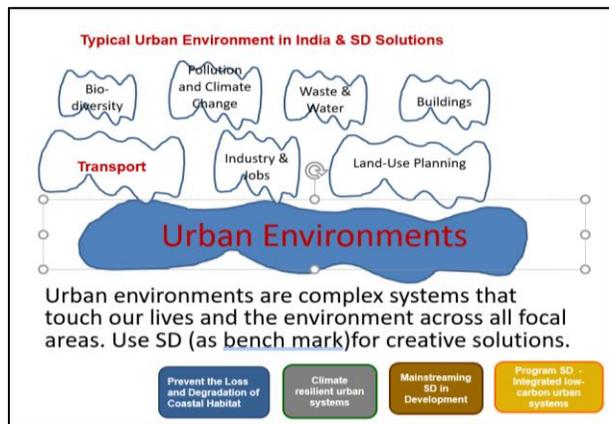
- Graduation in Civil Engineering & Post graduation in Environmental Engineering from IIT Kanpur with PhD in Environmental Sciences/Engineering from Gujarat University, Ahmadabad.
- He has the experience of more than 44 years and was associated with several renowned organizations during his profession career.
- As advisor/ Sr. Consultant he is associated with various Environmental MNCs namely:ERM (UK), DHV (Netherlands), SENES (Canada), SMECK (Australia), GtZ (Germany) etc.
- As an Air Pollution (including associated with Climate Change) Expert- carried out large scale epidemiological studies for setting standards, designed and operated Indian National Air Quality Monitoring Network (focusing on PM2.5 & PM10), designed and executed regional management assignment, designed/coordinated six city source apportionment study etc.
- Recently associated as an expert member & contribute to various national task force/committees on different aspects of Environmental Sustainable Development and Capacity Building /Training to national/international institutes/organisations. For example planned and carried out MoEF&CC sponsored project on Environmental Management Planning of different polluted zones like Goa Iron Ore mining, Jamshedpur- Tata Complex, Agra Foundries, Dhanbad Cupolas etc.

Dr. Ambrina Sardar Khan's screen

He gave his deliberation on **Topic: "Environmental Impact Assessments (EIA) in India: A Workable Tool for Achieving SD**. He gave an overview about India's challenges on environmental compliances consultant prospective. He defined the idea behind Sustainable development (SD) that human societies must live and meet their needs without compromising the ability of future generations to meet their own needs. The "official" definition of sustainable development was developed for the first time in

the Brundtland Report in 1987. He said specifically, SD is a way of organizing society so that it can exist in the long term.

This means taking into account both the imperatives present and those of the future, such as the preservation of the environment and natural resources or social and economic equity. He focused that SDG will be accomplished by bringing together their respective governments, businesses, media, institutions of higher education, and local NGOs to improve the lives of the people in their country by the year 2030. He also discussed the concept of linkage between SD & EIA and Urban Development in India. He was with the view that SD is an intersection between environment, society, and economy, which are conceived of as separate although connected entities. Also, separation of environment, society and economy often leads to a narrow techno-scientific and compartmentalized approach.



He concluded by saying that EIA (in different existing or modifies forms) can provide the General Frame work in India for SD for its all Resources Including Natural (Environmental, Social/Cultural, Economics. EIA being Conducted Should be improved. Regional EIA should more be used for city planning and to start with SEIA, Life Cycle EIA should locally be planed & designed India

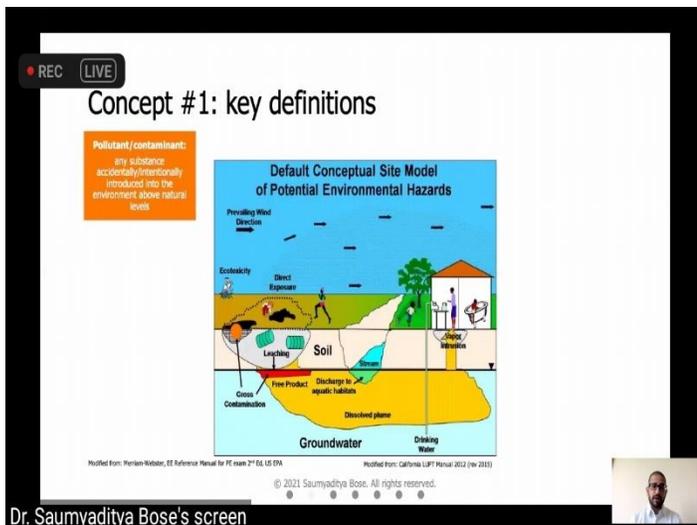
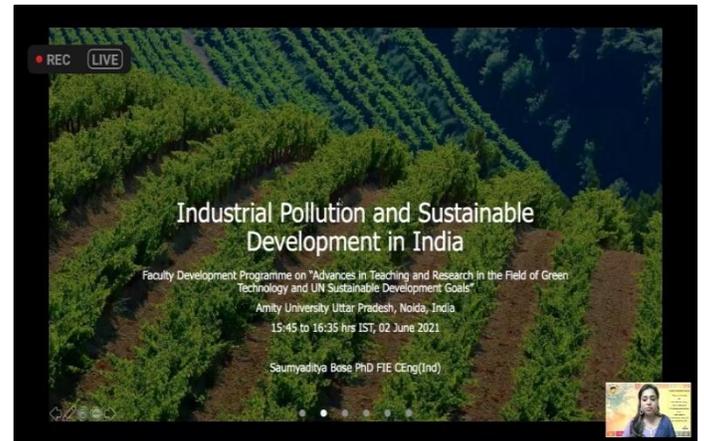


He shared his presentation on the topic of "Industrial Pollution and Sustainable Development in India". In his



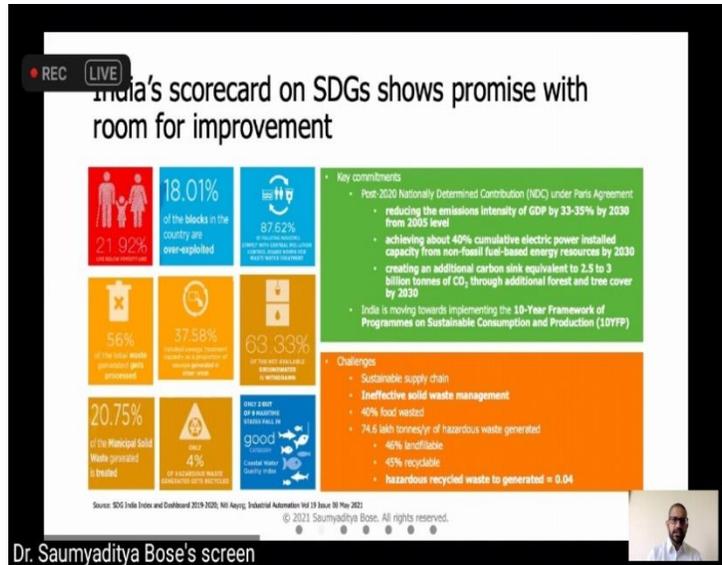
talk on he gave a focus on the India's score card on SGDs. He started his presentation by asking a question that why pollution is such a critical challenge? He focused on many different aspects in terms of exposure to toxic air, toxic water, soil and, chemical pollution and said that these are the major environmental causes of global premature death which makes this environmental pollution a critical challenge for the human population.

He discussed a default conceptual site model of potential environmental hazards. He said that the biggest problem is the presence of pollutant in the nature and their interaction with the human world. He discussed how the presence of these contaminants or pollutants lead to the environmental degradation along with the interference of these contaminants with the ecosystem and the human health.

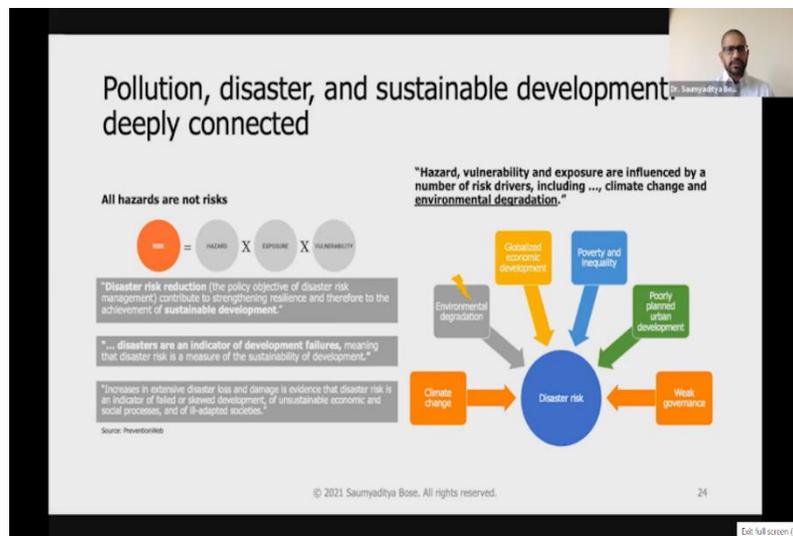


He also talked about the challenges that India is facing with reference to the poor implementation and enforcement of the environmental laws and regulations. He said that there are several laws that talks about the conservation of environment but unfortunately, they are not practiced or implemented properly. He mentioned that how the haste of globalization urbanization and industrialization has led to severe environmental concern in developing countries.

He talked about the economic and social changes that are putting pressure on the environmental resources of the country. He advocates the need for India to achieve rapid ecologically sustainable industrial growth which would require a transformation towards green manufacturing and adoption of environmental sustainability practices by promoting green technologies and identifying three cross cutting strategic parts which are mainstreaming and promoting green businesses protecting natural resources and addressing funding issues.

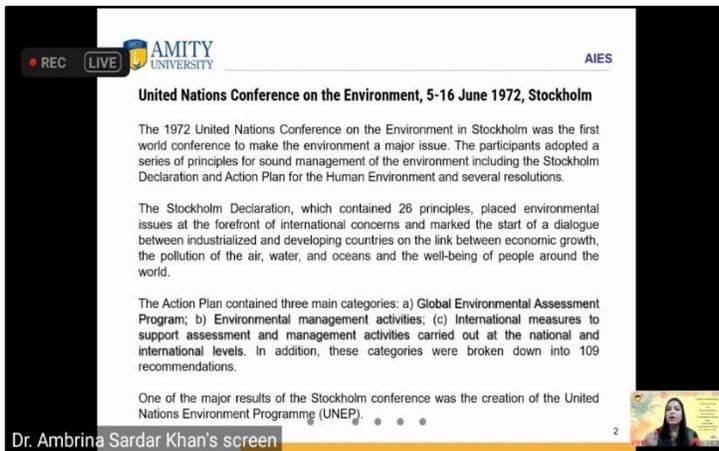


He talked about the close link between the pollution disaster and sustainable development. He says that the main issue is that the world is becoming more vulnerable to the impacts of natural hazards like earthquake, flood, drought accelerated due to the population growth, environmental degradation inequality and climate change.



the replacement of the raw material from the natural resources or wisely utilization of the available resources on the planet along with the reduction in the pollution and other environmental degrading activities.

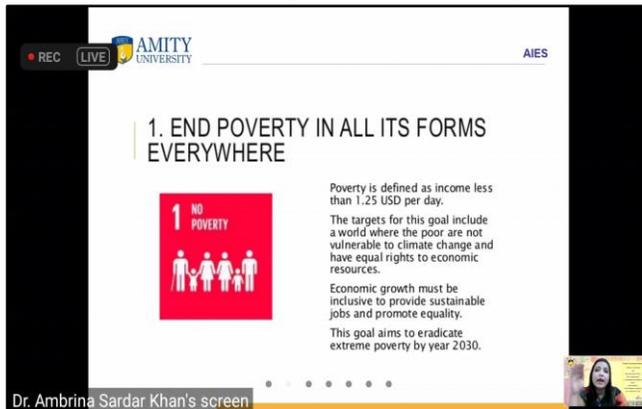




Dr. Ambrina has discussed about the history of environmental concerns that began in late 70s when the world leaders have started commanding the global attention for the environmental problems. She has discussed about the mega conferences that were held in late 70s to discuss the specific regional problems across the world related to the human health and food crisis and to try to have an overview off

their relationship between human society and the natural world.

She had thoroughly explained all the 17 sustainable development goals to the participants from the various academic and professional background.



The lecture was followed by a discussion and a documentary was showcased related to the sessions that have happened that day so the participants shall have a better understanding of the environmental issues.

A documentary on **“An Unequal Fight’: A Documentary on Industrial Pollution in Patancheru’** was also shown and shared and operated by Dr. Maya Kumari, Assistant professor, ASNRSD. ‘An Unequal Fight’ tracks one of India’s oldest environmental cases involving pollution by bulk drug manufacturing industries in Patancheru and Bollaram area in Telangana.

The Supreme Court of India, and later the National Green Tribunal, have passed countless directions to restore the environment in this region and to make polluters pay for the damage wreaked on people's lives. Despite these interventions, pollution levels remain unabated, and people of the region continue to suffer with no end in sight to their misery.



The session ended with thanksgiving by **Dr. Ashutosh Tripathi** to all the esteemed speakers for sharing the valuable views and enlightening all the participants.



The

Online Assessment for Plenary Session –II was done at the end. The google form was pasted in the chatbox and the participants were supposed to attempt all the questions. The aim of the assessment was to know that how actively and sincerely the participants have attended the FDP. The total responses received on the second day were 190.

PLENARY SESSION – III- The third session of the FDP has four speakers from the different expertise across the country who have spoken and discuss the various concerns associated with Sustainable development goals and decent work, economy, and climate change. Total 503 people have registered for the event and 343 attended the event on the III day.

Day 3: 03/06/2021 (Thursday)	
PLENARY SESSION – III	
12:00pm-05:50pm	
12:00pm-12:40pm	Ms. Chaitali Das , Social Entrepreneur - Jute revivalist, Global Chairperson & Managing Trustee, Rakshak Foundation, President, India - Western Canada Bilateral Business Council, Member Signatory, United Nation Global Compact, Gender Equality -Core Committee Topic: <i>Economy-Decent work & Economic Growth, Industry Innovation, and infrastructure.</i> <i>Align with all SDGs</i>
12:40pm-12:55pm	Address to queries by Ms. Chaitali Das
01:00pm-01:40pm	Dr. S.P. Singh , Director Amity School of Natural Resources & Sustainable Development Topic: <i>“Overview of SDGs”</i> <i>Align with all the SDGs</i>
01:40pm-01:55pm	Address to queries by Dr. A.K. Bhattacharya
02:00pm-02:40pm	Dr Shalini Sharma , Joint Coordinator ASD, Amity University Topic: <i>“Sustainable Practices: Adaptation of Luxury Hotels to Sustainability as CSR”.</i> <i>Align with SDG 4</i>
02:40pm-02:55pm	Address to queries by Dr Shalini Sharma
03:00pm-03:40pm	Ms Taruna Idnani , Manager – Corporate Actions, Council of Business Sustainability, TERI Topic: <i>“Climate change and consciousness: Linkages and Opportunities”</i> <i>Align with SDG 7&13</i>
03:40pm-03:55pm	Address to queries Ms Taruna Idnani
04:00pm-04:45pm	Sustainability https://www.youtube.com/watch?v=bjrPiIem30g
04:50pm -05:10pm	Vote of thanks by Dr. Kartikey Shukla
05:15pm- 05:50pm	Online Assessment for PLENARY SESSION – III
LINK	https://youtu.be/Mu6zukYj_o4

The third day of FDP was commenced by MC, Dr. Anamika Shrivastava, Assistant Professor, AIES and welcome and keynote was addressed by Dr. Renu Dhupper, Assistant Professor, AIES. Dr. Renu also briefed about the session of 2nd day of FDP to all the participants.



Ms. Chaitali Das, Social Entrepreneur - Jute revivalist, Global Chairperson & Managing Trustee, Rakshak Foundation, President, India - Western Canada Bilateral Business Council, Member Signatory, United Nation Global Compact, Gender Equality -Core Committee:



She gave a presentation on Economy-Decent work & Economic Growth, Industry Innovation, and infrastructure. She also shared the Jute Story of her Rakshak Foundation. Jute story beyond bars is a unique project running since 2016 till date in Dumdum correctional home and later in Presidency correctional home. She also showcased some of the diversified products of jute under her jute story. She is involved in social upliftment of the underprivileged. Her skill and livelihood development project 'Jute Story Beyond Bars' in the Dumdum Central Correctional Home and Presidency Correctional Home has been widely appreciated and applauded as a very important step in reformation of prison inmates and helping to de-

stigmatize their existence. She has helped to rehabilitate released female prison inmates and their re-inclusion into the mainstream society.

She shared that the journey was not easy, to work with prison inmates which was vehemently opposed by her close ones and peers. Nevertheless, she went ahead with her mission with a firm resolve. She faced social isolation in her business circles and was looked down upon for working with people carrying the tag of Convict. She faced discouragement when she decided to work on reviving Jute. She was told that it was not worth, as it constituted a dying industry and a very base material to work. However, despite all the dissuasion in 2017, she began work towards bringing an Eco-friendly green revolution behind the tall walls of confinement, resulting in the launch of her project 'Jute Story Beyond Bars' (JSBB).





Dr. S.P. Singh, Director, Amity School of Natural Resources and Sustainable Development

Faculty Development Program
"Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals"
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Dr. S.P. Singh, Director
 ASNRSD, Amity University, Noida

Dr. Singh did his Ph.D. in Zoology (Insect Physiology), M. Phil. (Zoology- Entomology), Master degrees in 4 subjects viz. Zoology, Forestry, Sociology, Geoinformation (GIS & Remote Sensing).

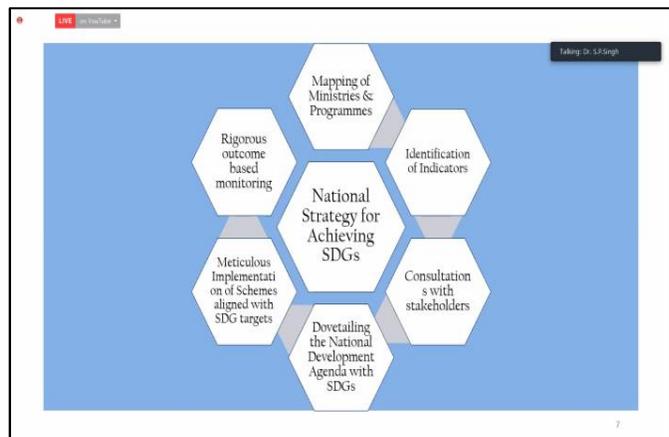
Dr. Singh joined Indian Forest Service in 1983 and served on several important assignments in the Forest Department of Assam. He also contributed to various wildlife conservation programmes at world heritage Sites – Manas and Kaziranga Tiger Reserve.

Dr. Singh also served in the Project Tiger (Now NTCA) in Government of India. He also served in Wildlife Institute of India (WII), Dehradun; Indian Council of Forestry Research and Education (ICFRE), Dehradun and Indira Gandhi National Forest Academy (IGNFA), Dehradun in different capacities. He has expertise in the field of Biodiversity Conservation, Eco-development, Forestry and Wildlife management, GIS & Remote Sensing, Climate Change & Carbon Assessment and Legal issues with forestry and wildlife sector.

The second panelist of the day was Dr. S.P. Singh, Director ASNRSD, Amity University. He gave an overview of Sustainable Development Goals (SDGs) and its implementation in India. He has covered all the sustainable development goals in detail. His lecture was focused how we can implement the sustainable development goals in our lives, and he has also talked about the green practices in Amity University. He has also thrown light on the national strategies for achieving sustainable development goals, namely National Mission for Empowerment of Women including Indira Gandhi Matritav Sahyog Yojana, National

Programme Nutritional Support to Primary Education, National Health mission, National Education Mission etc. He has discussed in detailed about the various S sustainable development goals index along with the cross cutting and multi-dimensional aspects of sustainable development goals. He talked about how SDG framework specifically targets ending poverty in all its forms, thereby raising the stakes on accelerated multidimensional poverty reduction. The Vertical steers the development of India’s national Multidimensional Poverty Index (MPI) and the reform action plan to reduce multidimensional poverty.

He also shared National Action on the SDGs in India by NITI Aayog, the Government of India’s premier think tank, has been entrusted with the task of coordinating the SDGs. NITI Aayog has undertaken a mapping of schemes as they relate to the SDGs and their targets and has identified lead and supporting ministries for each target. They have adopted a government-wide approach to sustainable development, emphasizing the interconnected nature of the SDGs across economic, social and environmental pillars. States have been advised to undertake a similar mapping of their schemes, including centrally sponsored schemes.



SDG 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE

- Infrastructure
- Communications
- Business Reforms
- Manufacturing
- Innovation & Design:
- Research & Development:
- Innovation ecosystem
- Increasing Public Investment
- Skilling

Index Score 8-88 states; 0-100 UTs
Top Performer : Kerala & Gujrat/ Delhi, Daman & Diu.

#9: Build resilient infrastructure, promote sustainable industrialization and foster

NITI's Priority Indicators & SDG Index

- Realtime Monitoring of States on Priority SDG Indicators
- Creating an SDG Index for comparing performance at State & National level
- On-line dashboard on SDGs performance based on data on Priority Indicators from States and Central Ministries.
- Ranking of States/UTs on SDGs to spur competition among them.

Dr Shalini Sharma, Joint Coordinator Amity School of Design, Amity University

Faculty Development Program
"Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals"
 (Under GURU-DAKSHITA Faculty Induction Programme)
 01st – 05th JUNE 2021

Ms. Shalini Sharma Joint Coordinator of Amity School of Design, AUUP. She has done Post graduate in Sustainable Development and under graduation in Botany.

She is having 17 years of experience in Teaching and in the field of Interior Design, Sustainable & Energy Efficient Interiors, Green Design Intelligent Building & Design.

She also has a number of national and international publications to her credit.

Dr Shalini Sharma,
 Joint Coordinator ASD,
 Amity University, Noida

She gave an insightful deliberation on Sustainable Practices: Adaptation of Luxury Hotels to Sustainability as CSR. She highlighted some points on how to make a design sustainable, a design which has least environmental impacts. She said sustainability has made a comeback with a reformed definition, referring to the ability to meet our own needs without compromising that of our future generations, and it has found a new home in hospitality. She discussed the sustainable design of the infrastructure. She focused how we can reduce the environmental impact by switching to the green buildings. She

emphasized on the waste management for having a sustainable lifestyle. She highlighted the indicators which has to be taken care of during sustainable management of waste like plastic, glass etc. She emphasized on promoting biodiversity in green buildings and societies to ensure the health surroundings of the building.

Webinar | You are viewing Dr. Shalini Sharma's screen | View Options

Dr. S.P.Singh | Dr. Maya Kumari | Amity University | Dr. Rathna | Mr. Naresh

Recording | LIVE | OFF YOUTUBE

AMITY UNIVERSITY | AMITY SCHOOL OF DESIGN

CSR activities of hospitality groups have begun including environmentally sustainable activities and practices

AMITY UNIVERSITY | AMITY SCHOOL OF DESIGN | Dr. Shalini Sharma

What makes a design "sustainable" ?

Design that has the least environmental impact, which can be assessed through:

- Standards – NBC, ECBC, ASHRAE
- Benchmarks
- Best practices – Rating systems
- Quantitative aspects
- Qualitative aspects



Ms Taruna Idnani, Manager – Corporate Actions, Council of Business Sustainability, TERI

Faculty Development Program
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Ms Taruna has 9 years of diverse experience of management and execution of projects related to clean energy financing, market mechanisms, business plan development, due diligence exercises and strategy development and assessments including helping corporates source clean energy by participating in power trading and market mechanisms.

She has carried out extensive policy analysis and research and explored low carbon interventions in varied national policies and coordinated implementation of various decentralized energy projects. She has worked on capacity building of South Asia legislators supporting them to make well informed, targeted policy interventions in climate change.

She has trained mid and senior level corporate representatives on ISO14064, carbon neutrality and TCFD recommendations. She is passionate about guiding youth to pursue career to address pressing environmental challenges and motivating them to adopt sustainable lifestyles.

Ms Taruna Idnani,
 Manager, Corporate Actions,
 Council of Business
 Sustainability, TERI

She gave a presentation on Climate Change and Consciousness: Linkages and Opportunities, aligned with SDG 7 (Affordable and clean energy) & 13 (Climate Action) in Indian context. She said that over the last decade, India has provided electricity to nearly 50 million new users every year. The tremendous growth in renewable has tempered growth in coal capacity, but not prevented it. She was emphasizing how we can ensure access to affordable, reliable, sustainable, and modern energy for all. She further portrayed some challenges which India is facing in achieving these goals.

Challenges

- ❖ Fuel stacking appears to be common among users of the PMLUY, who often procure LPG well below their allocations (CAG, 2019).
- ❖ Barriers to access, including the long distances sometimes involved in LPG supply, further contribute to continued reliance on biomass
- ❖ The Covid-19 led to reverse flows of migrant labour back to rural areas & unemployment further reducing the affordability of LPG cylinders.
- ❖ The total cost to the government of subsidising LPG depends on oil prices and rates of uptake. In 2019, it amounted to INR 23 000 crore (\$3 billion).
- ❖ In April 2019, there were 5 million domestic PNG connections, over 90% of which were concentrated in four Indian states. The government now has plans to expand this city gas distribution network to cover 70% of all households by 2030.

12

Access to electricity in poorer countries has begun to accelerate, energy efficiency continues to improve, and renewable energy is making impressive gains in the electricity sector. She talked about the COVID19 crisis and challenges also. Focusing on the aim of SDG 13, she said UN aims to Climate change is a real and undeniable threat to our entire civilization.

The effects are already visible and will be catastrophic unless we act now. Through education, innovation and adherence to our climate commitments, we can make the necessary changes to protect the planet. These changes also provide huge opportunities to modernize our infrastructure which will create new jobs and promote greater prosperity across the globe. She also highlighted various schemes of the government working in this direction.



Ms. Idnani has shared two wonderful videos about the renewable energy and also how we can take the light to every part of the country. The videos were focused on how the solar energy lamps can be made available to the villagers and how the burden from the fossil fuels can be reduced. She said that the world is making progress towards Goal 7, with encouraging signs that energy is becoming more sustainable and widely available.

To make the FDP more interactive and interesting a small activity was conducted by Dr. Maya Kumari, Assistant professor, ASNRSD. Few questions were asked on an online platform which was thoroughly enjoyed by the participants.



A documentary on ‘Sustainability’ was also shown and shared and operated by Dr. Maya Kumari, Assistant professor, ASNRSD. This documentary explores the rise of the concept of sustainability as it has gone from the fringes to the mainstream within just a few short decades, driven by an environmental crisis on a global scale. In this short documentary film, participants explore this new environmental context of the Anthropocene and the key structural transformations in our economy required to achieve sustainability in the age of globalization.



The documentary was followed by the customary duty of presenting a vote of thanks proposed by Dr. Ambrina Sardar Khan, Assistant Professor, AIES. The day was very fruitful, and the participants have thoroughly enjoyed the sessions. The sessions with all the speakers were very interactive and knowledge gaining.

The Online Assessment for Plenary Session –III was done at the end. The google form was pasted in the chatbox and the participants were supposed to attempt all the questions. The aim of the assessment was to know that how actively and sincerely the participants have attended the FDP. The total responses received on the third day were 227.



PLENARY SESSION – IV- The fourth session of the FDP has four speakers from the different expertise across the country who have spoken and discuss the various concerns associated with Sustainable development goals and the usage and application of green technology. Total 518 people have registered for the event and 319 attended the event on the IV day.

Day 4: 04/06/2021 (Friday)	
PLENARY SESSION – IV 12:00pm-05:50pm	
12:00pm-12:40pm	Dr. A.K. Bhattacharya , IFS (Retired), Chairman, Skills Art & Beyond Chairman, Integrated Development Organization MD & CEO, Centre for Resources Development Studies, MD, Bamboo Entrepreneurship Development Foundation Topic: "Green Technology & Sustainable Development" <i>Align with SDG 6</i>
12:40pm-12:50pm	Address to queries by Dr. A.K. Bhattacharya
12:55pm-01:45pm	Panel discussion on application green technology
01:50pm-02:30pm	Prof. Rajinder S. Chauhan , Dean & Head, Biotechnology, Bennett University, Greater Noida Topic: "Indian Himalayas as Repository for Green Products" <i>Align with SDGs 8, 12 & 15</i>
02:35pm-02:45pm	Address to queries by Prof. Rajinder S. Chauhan
02:50pm-03:30pm	Dr. K Rathna , Chief Operating Officer, Centre for Indian Bamboo Resource & Technology (CIBART) Topic: "Economical potential of bamboo for Sustainable livelihood" <i>Align with SDGs 1,2 & 12</i>
03:30pm -03:40pm	Address to queries by Dr. Rathna
03:45pm-04:25pm	Mr. Jaydeep Naha , General Manager (EPC), Siemens (Global) Energy Topic: "Global trends for Sustainability in the Energy sector" <i>Align with all SDGs</i>
04:25pm- 04:35pm	Address to queries by Mr. Jaydeep Naha
04:40pm -05:05pm	'My Way or The Highway' – A Documentary on Protection of Wildlife Corridor in Kaziranga https://vidhilegalpolicy.in/videos/my-way-or-the-highway-a-documentary-on-protection-of-wildlife-corridor-in-kaziranga/
05:05pm-05:15pm	Vote of thanks by Dr. Maya Kumari
05:15pm- 05:50pm	Online Assessment for PLENARY SESSION – IV
LINK	https://youtu.be/VgL6He3hR7Q

The fourth day of FDP was commenced by MC, Dr. Richa Dave Nagar, Assistant Professor, AIES. Dr. Renu Dhuper, Assistant Professor, AIES, welcome the speakers and briefed about the session of 4th day of FDP. The session was attended by four speakers and 319 participants.



Dr. A.K. Bhattacharya, IFS (Retired), Chairman, Skills Art & Beyond Chairman Integrated Development Organization MD & CEO, Centre for Resources Development Studies MD (Hon):

REC LIVE

Faculty Development Program

“Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals”
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Dr. A.K. Bhattacharya,
IFS (Retired), Chairman, Skills Art & Beyond, Chairman, Integrated Development Organisation, MD & CEO, Centre for Resources Development Studies

Dr. AK Bhattacharya is a retired IFS officer of 1983 batch from Madhya Pradesh cadre. Since December 2015 till February 2019, he had been engaged as Country Head for the Green Highways Program of Ministry of Road Transport & Highways, Govt of India, for the pan India implementation of the Greening Projects of NHAI, MoRTH, & NHIDCL.

Dr Bhattacharya has got distinctive recognition for mobilizing activities in areas of development, forestry and academics. Dr Bhattacharya is Doctorate (Ph D) and Post Doctorate in Ecology (Environmental Pollution). He holds 31 years of administrative and research experience. He has contributed more than 30 papers and articles on Environment and Forestry in national and international journals.

He has wide range of overseas exposures, including Visiting Fellow for course in Sustainable Forest Development from University of Tasmania, Australia; Participation in UNFCC in New York (US); Visits to Universities of Syracuse (US) & British Columbia (Canada); Technical collaboration with Universities of Yale (US) & Washington; Participation in UN Climate Change Conference (CoP22), Marrakech (Morocco).

Dr. Richa DAVE Nagar's screen

He gave a presentation on Green issues and Sustainable development. He started with the Green Pledge. He spoke about Sustainable development vs sustainability. Sustainability is the way of thinking. There are over 200 different definitions to answer what is sustainable development. However, the most common definition was defined by the Brundtland Commission in 1987, who documented the sustainable development definition as: “Sustainable development is development that meets the needs of

the present without compromising the ability of future generations to meet their own needs. Green Economy is one that results in increased human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities.

The genesis of concern “The holocoenotic nature of environment” Change in one ecological or environmental factor can concurrently affect the dynamic state of an entire ecosystem.

He discussed about Climate change. Climate change is a long-term shift or alteration in the climate of a specific location, a region or the entire planet. Climate change is perhaps the most pressing and urgent environmental issues on the world agenda.

REC LIVE

The Green Pledge

ENVIRONMENTAL PLEDGE

I pledge for my life time commitment for the cause of environmental protection and amelioration to sustain a safer environment for healthy life for all. I shall adopt myself and will encourage all stakeholders to adopt all the measures of best management practices to maintain the environment around us in the best possible conditions. I will reduce and help others to reduce our carbon footprint and shall make all efforts to achieve the carbon neutral lifestyle.

Dr. A.K. Bhattacharya's screen

Green Audit

- Inspection of a company to assess the total environmental impact of its activities or of a particular product or process.
- A green audit of a manufactured product looks at the impact of production (including energy use and the extraction of raw materials used in manufacture), use (which may cause pollution and other hazards), and disposal (potential for recycling, and whether waste causes pollution).
- Such surveys allow a widening of the traditional scope of economics by ascribing costs to variables that are usually ignored, such as despoliation of the countryside or air pollution.

Audit Planning:

The Auditor should consider the following: (ISAE3000)

- Engagement circumstance:
 - Reasonable Assurance engagement (or limited assurance engagement)
 - Attestation Engagement (or Direct engagement)
- Engagement Risk:
- Engagement team:
- Intended users:
- Subject matter of information:
- Subsequent events:

Global Warming a major threat. Every scientific institution and national government in the world now endorse the conclusions of the UN’s Intergovernmental Panel on Climate Change (IPCC) that global warming is a major threat to the planet’s future. A Process of Mass Destruction: Heating of the earth’s atmosphere due to increasing concentration of carbon dioxide and other greenhouse gases.

Global warming refers specifically to any change in the global average surface temperature of the earth. In other words, global warming is one type of planetary scale change. Warming Impacts: Disappearing glaciers, Migratory birds arrive earlier at summer breeding grounds, Increased survival of pest populations, Coral reef “bleaching” of reef building corals.



He discussed causes of Climate Change such as natural events and processes, Human influences in the form of Emission of greenhouse gases, local air pollution, alteration in land use, deforestation. He also spoke about Gandhi’s perception of Sustainable development, Community perception of Sustainable development, green economy, Circular economy, blue economy.

Prof. Rajinder S. Chauhan, Dean & Head, Biotechnology, Bennett University, Greater Noida

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- Prof. Chauhan worked as a Head of the Biotech & Bioinformatics Department and Dean at the Jaypee University of Information Technology, Solan, HP (2006-2017).
- Dr. Chauhan was a Visiting Scientist for 6.5 yrs at the University of Wisconsin, Madison, USA through young scientist fellowships of the Ministry of Science and Technology, Govt. of India (1997-2004).
- He had advanced trainings in high throughput genomics and bioinformatics at prestigious Institutes in the USA such as Texas A & M University, College Station, USA; The Institute of Genomics Research, Maryland, USA; Rutgers University, New Jersey, USA.
- He is recipient of national awards Jawahar Lal Nehru Academic Award of the Indian Council of Agriculture Research, Govt. of India and the Pran Vohra Award of the Indian Science Congress Association for his research contributions.
- He has been a member in the Nomination Council, Annual Infosys Prizes of the Infosys Science Foundation w.e.f. 2013- till date
- His current focus of research is discovery and utilization of biosynthetic machineries of high value Himalayan medicinal herbs towards sustainable conservation and genetic improvement.

Prof. Rajinder S. Chauhan,
 Dean & Head, Biotechnology,
 Bennett University, Greater
 Noida, UP

He talked about “Indian Himalayas as Repository for Green Products”. He gave tribute to Sh. Sunderlal Bahuguna by quoting “ecology is permanent economy”. He discussed about the Indian Himalayan region, threats to Himalayan Ecosystem, Nature’s repository, Threats to repository, green products vis-a-vis- SDGs, S&T/Policy interventions, Challenges and opportunities. Endangered Himalayan species source of Anti-cancer drug.

Biological richness of Himalayan Region. Indian Himalayan region (IHR) support nearly 50% of the total flowering plants in India of which 30% Flora is endemic to the region. There are over 816 tree species, 675 edibles and nearly 1743 species of medicinal value found in the IHR. The region is known as a “water tower of the earth”.

Approximately 10 to 20% the area is covered by glaciers, while 30-40% remains under seasonal snow cover. The Himalaya with its vast green cover act as 'sink' for Carbon dioxide.

Threat to the Himalayan Ecosystem. Unsustainable exploitation and deforestation are forests for urbanization, Timber, medicinal plants, poaching etc. Unsustainable development through ill-planned hydroelectric projects, construction of roads, deforestation for industry purposes and increasing area of towns. Unsustainable tourism: pressure on ecosystem disrupting natural ability to renew. He talked about the deforestation in Himalaya: forest plants ecosystem: Grasses, herbs, shrubs trees.



Sustainable development vis-à-vis green economy. Sustainable development: development that meets the needs of the present without compromising the ability of future generations to meet their own needs. With its economic, social and environmental pillar, SD is arguably a wider concept than the green economy. UNEP defines green economy as “one that result in improved human well-being and social equality, while significantly reducing environmental risk and ecological scarcities. Green bio-based sustainable are products using natural ingredients produced from renewable raw materials contrary to petrochemical derived a nonrenewable and economically volatile resource.

Bio waste products can contribute to Green and sustainable bioeconomy. As perfume, flavours, fragrances, natural dyes and colour. Bioenergy and Biofuel. He emphasized that are we ready to manufacture and adopt bio-based products. What fossils-based products can be replaced with bio-based products in light of raw materials availability in India? Are production and processing of raw materials aligned to industry QC requirements? Can bio-based industries generate employment and economic growth? Will green bio-based product be affordable and cost effective?

Current Research Focus on Sustainable Conservation & Utilization of Medicinal Herbs

Medicinal Herb	Medicinal Properties	Annual Trade (MT)
<i>Picrorhiza kurroa</i>	Hepatoprotective, Immunomodulator	Roots, rhizome : 1000-2000
<i>Nardostachys jatamansi</i>	Treatment of insomnia & CNS disorders	Roots, rhizome : 500-1000
<i>Swertia chirayita</i>	Fever, Intestinal worms, anti-diabetic	Whole plant: 50-100
<i>Podophyllum hexandrum</i>	Anti-cancer compounds	Roots, rhizome : 50-100
<i>Rubia cordifolia</i>	Blood purifier, Immunomodulator	Stem, roots: 1000-2000

Prof. Rajinder S. Chauhan's screen

He spoke about challenges in sustainable utilization of Medicinal herbs. Endangered status of high-value Himalayan medicinal Herbs. Lack of propagation Technologies for commercial cultivation. Lack of DNA diagnostic to detect specific strains for amounts of adulterants. No genetic improvement due to lack of genetic/molecular basis of biomass and contents of chemical constituents. Lack of proper storage transportation, postharvest processing and marketing.

Genetic Stock Centre of Endangered Himalayan Medicinal Herbs

REC LIVE

FIELD RESEARCH STATION - CUM - VAN VIGTAN KENDRA (VVK)
Jagatsukh, Manali, Kullu, Himachal Pradesh

DEMONSTRATION PLOT
(Important Medicinal Plants)

S.N. SCIENTIFIC NAME	S.N. SCIENTIFIC NAME
1. Achillea millefolium	2. Achyranthes aspera
3. Aconitum heterophyllum	4. Acorus calamus
5. Ainsliaea aptera	6. Ajuga integrifolia
7. Allium sp.	8. Angelica glauca
9. Arctium lappa	10. Arnebia benthamii
11. Asparagus adscendens	12. Bergenia ciliata
13. Bistorta affinis	14. Bunium persicum
15. Calanthe tricarinata	16. Dactyloctenium aegyptium
17. Datura stramonium	18. Digitalis lanata
19. Dioscorea deltoidea	20. Heracleum candicans
21. Inula racemosa	22. Mentha arvensis
23. Picrorhiza kurroa	24. Plantago major
25. Podophyllum hexandrum	26. Polygonatum cirrhifolium
27. Polygonatum verticillatum	28. Rheum webbianum
29. Rhodiola sp.	30. Selinum vaginatum
31. Skimmia lauroleola	32. Taxus baccata
33. Thymus serpyllum	34. Trillium govanianum
35. Viola serpens	

Prof. Rajinder S. Chauhan's screen

He was with a view that sustainable use of nature's Himalayan repository will bring some change to Himalayan region. Are Government policies on declaring these species as endangered prohibited there uprooting? Can we educate rural community to conserve, cultivate, process, and trade these medicinal plant species? At present local communities are exploiting Himalayan forests for food, feed, fodder, trading herbal materials trekking and tourism etc.

He said that Bio-based products can contribute to green and sustainable Bioeconomy, are we ready to manufacture and adopt bio-products, challenges in sustainable utilization of medicinal herbs.

Dr. K Rathna, Chief Operating Officer, Centre for Indian Bamboo Resource & Technology (CIBART)

REC LIVE

Faculty Development Program
"Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals"
(Under GURU-DAKSHITA Faculty Induction Programme)
01st - 05th JUNE 2021



Dr. K Rathna,
Chief Operating Officer,
Centre for Indian Bamboo
Resources & Technology
(CIBART)

- Ms. Rathna has a post-graduate degree in business administration, majoring in portfolio management, financial structures and institutions and management of funds.
- She has over 20 years of working experience in development sector having worked with CARE India and Access Development Services prior to joining CIBART.
- She provides strategic leadership as Chief Operating Officer and manages operations and administration to ensure organizational growth, positive performance and manages relations with government, non-government, public, private and partner institutions.
- She provides executive advice and support in the areas of financial management, reporting, personnel management, coordination and liaison, organizing missions, workshops, proposal writing and business plan development and execution.
- She has excellent understanding and experience in project management, accounting concepts, budgeting, loan fund management, business planning, grants management and management information system.

Her topic of discussion was “Economical potential of bamboo for Sustainable livelihood”. She discussed about Bamboo for Sustainable Development. Bamboo has over 1500 documented uses. Occupies 12.8% of forest areas in India. Releases 35% more oxygen than an equivalent stand of trees. Absorbs four times as much carbon. Farming bamboo has big economic benefits. Bamboo is a perennial, versatile and income producing crop. It grows quickly with a maturity of three to five years. She focused why bamboo enterprises for Economic opportunities, because Bamboo is a renewable resource, available in large quantities. Bamboo offers tremendous employment

opportunities - as raw material and as finished product. Household/community units as well as medium scale units can be set up. Commercial ventures that provide employment can be set up.

She spoke about Sustainable Development Goals. Social: SDG 1 – No Poverty, Economic: SDG 8 – Decent work and Economic Growth, Environmental: SDG 12- Sustainable Consumption and Production, SDG 13 – Climate Action, Fostering Peace and Partnership, SDG17 – Partnerships for the Goals.

Sustainable Development Goals

- Social
SDG 1 – No Poverty
- Economic
SDG 8 – Decent work and Economic Growth
- Environmental
SDG 12- Sustainable Consumption and Production
SDG 13 – Climate Action
- Fostering Peace and Partnership
SDG17 – Partnerships for the Goals

Bamboo for Sustainable Development

Dr. Ambrina Sardar Khan's screen

Farming bamboo has big economic benefits

- Bamboo is a perennial, versatile and income producing crop
- It grows quickly with a maturity of three to five years
- Unlike trees, bamboo poles can be cut every year and bamboo grows
- Bamboo poles can be sold in summer and in fall and poles have number of uses
- Bamboo shoots can be harvested and sold in spring and in early summer
- The young leaves can be fed to the livestock
- The fallen leaves can be made to vermi-composting
- It is evergreen and does photo-synthesis all round the year
- It absorbs Carbon-di-oxide from the atmosphere and relieves oxygen

Dr. Ambrina Sardar Khan's screen

She also explained about reasons for India's low bamboo product market share. She said that the reasons are large unemployed, unskilled rural population (especially youth) where the resource is plenty. Lack of access to training and technology, Skilled traditional artisans; still use primitive tools and have no technology, available technology in Institutions but NOT taken to the needy communities who live in mainly forest areas. Very little focus on quality products. Limited way of mass production of low value items.

Three screenshots showing bamboo products:

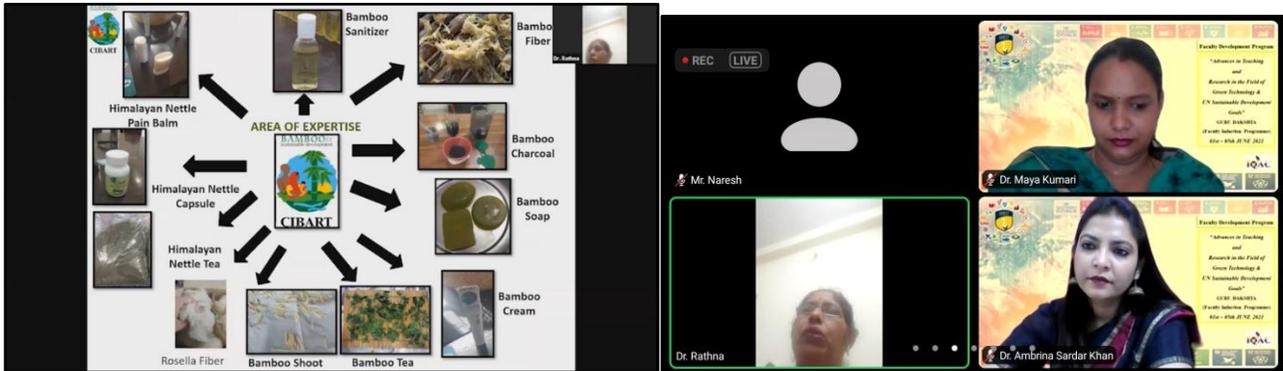
- Skin-slats based bamboo packing cases:** Shows people working with bamboo slats to create packing cases.
- Bamboo Shoots:** Shows bamboo shoots being processed and packaged.
- Organic Bamboo Fibre:** Shows bamboo fibre being processed into a textile.

She also discussed about the Centre for Indian Bamboo Resource and Technology (CIBART). CIBART's thematic areas, three training components, Capacity building & training, Integrating technology, Pilot research of CIBART. She thoroughly explained about the uses of bamboo and bamboo products, you are nurturing a sustainable tomorrow.

Three screenshots showing bamboo products:

- School Furniture:** Shows a classroom with bamboo desks and chairs.
- Bamboo Charcoal Briquettes:** Shows bamboo charcoal briquettes being produced.
- Bamboo Furniture:** Shows various bamboo furniture items like tables, chairs, and stools.

Her topic of discussion was “Economical potential of bamboo for Sustainable livelihood”. She discussed about Bamboo for Sustainable Development, Farming bamboo has big economic benefits, Economic opportunities - Bamboo Enterprises, Current Usage of Bamboo, Bamboo Market, Reasons for India’s low bamboo product market share, Funding/Growth Opportunities and about CIBART. Her presentation was very elaborative and discuss the various avenues of the trade and occupation in the field of bamboo resource and technology.



Mr. Jaydeep Naha, General Manager (EPC), Siemens (Global) Energy

Mr. Jaydeep Naha,
General Manager (EPC),
Siemens (Global) & Digital
Transformer, Haryana

- Mr. Jaydeep Naha is the General Manager Siemens
- Mechanical Engineering, Bachelors (Hons) degree from BITS, Pilani - India
- Chief Manager in Siemens Austria (Vienna) from 2008 – 2013.
- He Successfully integrated VA-Tech; profitably handled over EUR 150 Million in Execution, successfully implemented Supply Chain innovations in European projects & Proposal Management; contributed to the IPPS Business Case
- As a Liaison Manager at Construction site (Kogan Creek) of Siemens in Australia in 2006 / 07, he Successfully coordinated the requirements of Energy construction & commissioning projects with that of the back offices in Germany, acquired HSE certification of Queensland
- As a Project Engineering Manager at Siemens from 1999 – 2005 Involved in setting up of SPEL (engineering hub); Delegation to Siemens Germany (2003) for leading the discipline in a Nuclear Power Plant (CI); several international project execution, won several Innovation and Execution Awards

He discussed about “Global trends for Sustainability in the Energy sector”. The Objective of the today talk is about gain an understanding of how to implement the UN’s SDGs, Conceptualize the energy of the future. He said that focused and strategic societal engagement activities should support societies worldwide. Our activities should be linked to certain focused United Nations’ SDGs to ensure highest impact. Clear targets support the ambition of large corporates to become a sustainability leader in the industry. Climate change is more expensive for our society than climate change. Digitalization results in fast changing value chains with increasing complexity: new technology, business model.

He also gave some examples of sustainable business innovation. He shared the work his company is doing across the globe. The concept would focus on few topics and include monetary donations, in-kind donations and employee volunteering. Our activities should be directly linked with the SDG. In organization we should focus on the Clear targets support the ambition of large corporates to become a sustainability leader in the industry. Climate change is more expensive for our society than climate change.

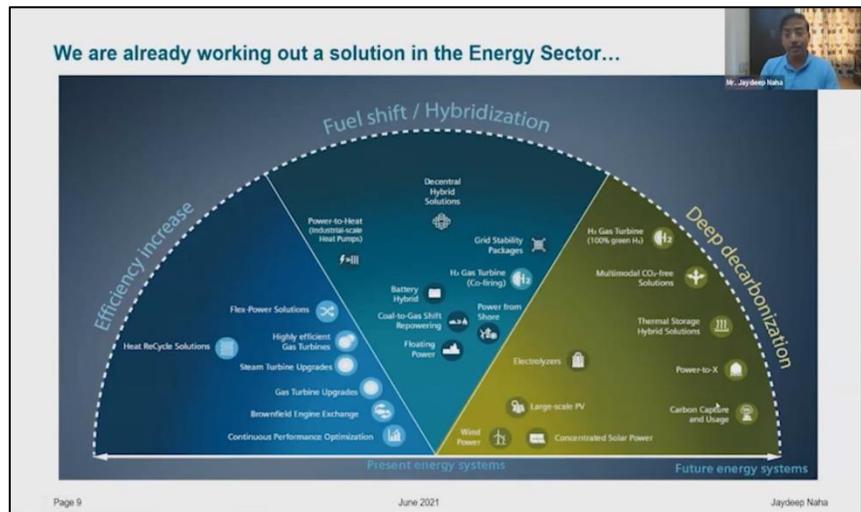
Goal: Reduce unplanned downtime & revenue loss

Visual inspection images + Wind turbines SCADA data + Scheduled time-based maintenance data + Energy price forecast + Spare parts inventory data

- Predict faults in wind turbines
- Combine predictive & time-based maintenance
- Perform maintenance when energy prices are low

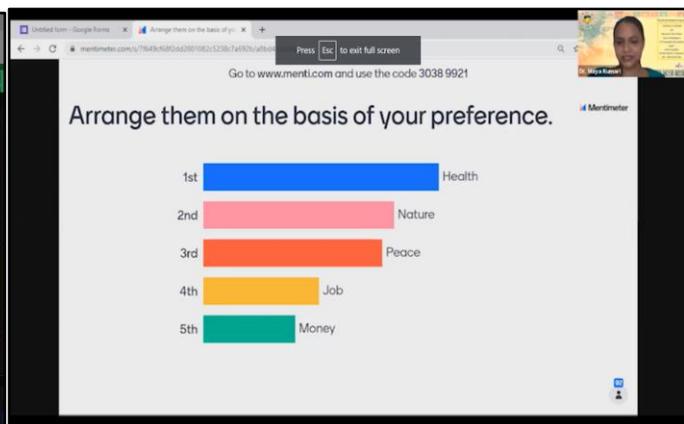
Mr. Jaydeep Naha's screen June 2021

We are already working out a solution in the Energy sector. Efficiency increase, Fuel shift/hybridization and deep decarbonization. Digitalization results in fast changing value chains with increasing complexity: new technology, business model. He discussed about “Global trends for Sustainability in the Energy sector”. The Objective of the today talk is about gain an understanding of how to implement the UN’s SDGs, Conceptualize the energy of the future, learn how you can work in ecosystem.



He also gave some examples of sustainable business innovation if we chose about the economic sector, we are having very interesting company ‘g’ in Europe which is private sharing optimizing utilization of private cars and in reselling business, ebay company online auctioneer but also resell-platform. He said that focused and strategic societal engagement activities should support societies worldwide. Our activities should be linked to certain focused United Nations’ SDGs to ensure highest impact.

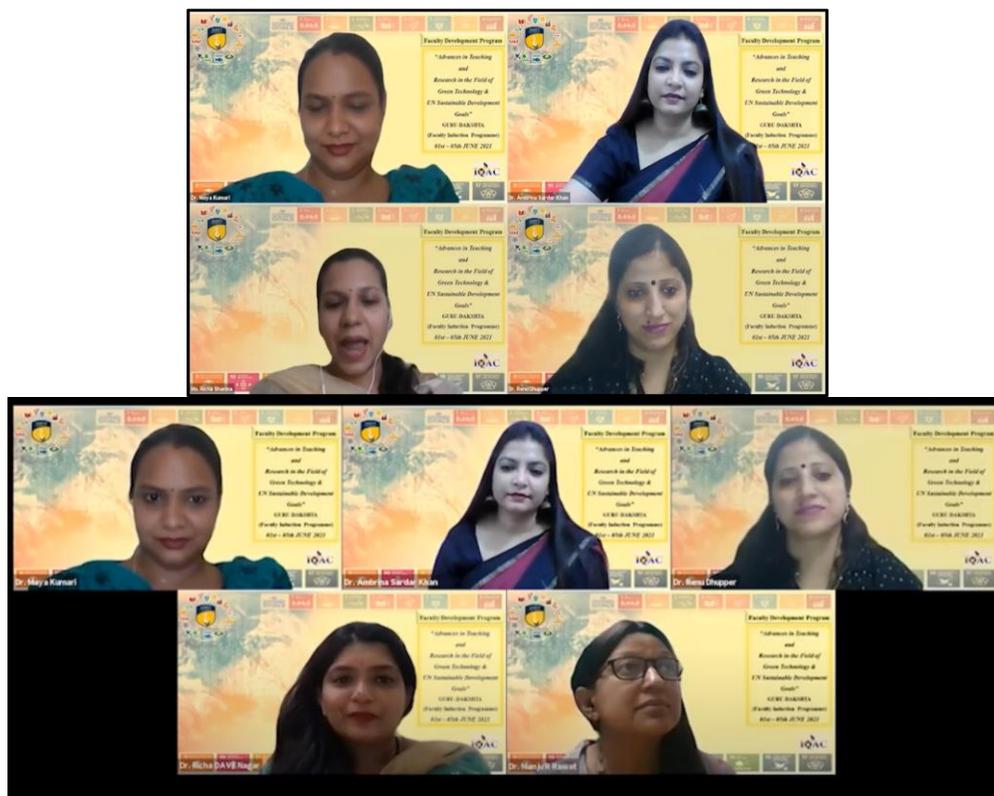
To make the FDP more interactive and interesting a small activity was conducted by Dr. Maya Kumari, Assistant professor, ASNRSD. Few questions were asked on an online platform which was thoroughly enjoyed by the participants.



A documentary on ‘My Way or The Highway’ – A Documentary on Protection of Wildlife Corridor in Kaziranga” was showcased in the last. Dr. Maya kumari, Assistant professor ASNRSD, the MC of the session had highlighted the importance of the documentary. The documentary has received lots of appreciation from the participants.



At the end of the session, the customary duty of presenting a vote of thanks was done by Ms. Richa Sharma, Assistant Professor, ASNRSD.



The Online Assessment for Plenary Session –I was done at the end. The google form was pasted in the chat box and the participants were supposed to attempt all the questions. The aim of the assessment was to know that how actively and sincerely the participants have attended the FDP. Total 218 responses was received from the participants.

Dr. Chhama Awasthi, Scientist C. Department of Science and Technology, GoI



Faculty Development Program
Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development (Under GURU-DAKSHITA Faculty Induction Programme)
01st – 05th JUNE 2021

Dr. Chhama Awasthi,
Scientist C, DST,
Ministry of Science & Technology

- Dr. Chhama Awasthi is Scientist C Ministry of Science and Technology Department of Science and Technology Women in Science and Engineering-KIRAN Division.
- She is PhD, Synthetic Organic Chemistry, University of Allahabad and MSc, Organic Chemistry, University of Allahabad.
- She was CSIR- Research Associate at Indian Institute of Science Bangalore
- She was Scientist B, Department of Science and Technology, DST for 8 years, implementing National INSPIRE Program across country
- As research scientists in Lab and working in the area of synthetic organic chemistry she has synthesized around 200 new molecules in the lab using green methodologies.
- Published around 14 research papers from the lab with more than 350 citations.
- She is developing a new program Gender Advancement for Transforming Institutions, which is aligned with SDG's and also the Draft STIP 2021 of India.

9 Sustainable Development Goals icons: 9. Industry, Innovation and Infrastructure; 10. Reduced Inequalities; 11. Sustainable Cities and Communities; 12. Responsible Consumption and Production; 13. Climate Action; 14. Life Below Water; 15. Life on Land; 16. Peace, Justice and Strong Institutions.

IQAC logo

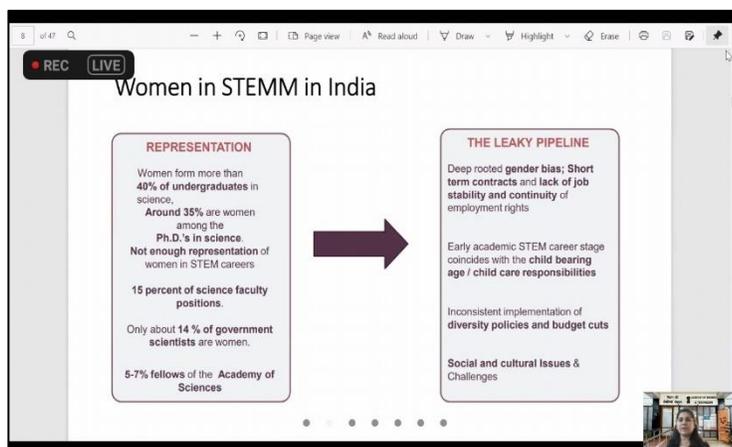
Her talk was alligned with sustainable development goal number 5 and 10 which are gender equality and reduced inequalities. In her talk she highlighted how women account for a minority of world's researchers. She also pointed out that diversity is not just a cosmetic addition to a workforce in fact increased diversity brings about potentially significant financial gains and improved business outcomes.



Later she talked about women in STEMM in India. She also presented figures on fellowship of Indian national Science Academy and recognitions to women scientists by INSA. She also discussed the need of immediate intervention for entry and retention of women in science and technology and initiatives taken by Government of India to reduce the gender gap for women to progress in their academic careers. She stressed on the fact that the progress of

scientific development innovation and discovery can only benefit from diversity gender being one of the components also given the fact that women are 50% of humanity their intellectual potential is something that we cannot afford to ignore.

Later she discussed some of the government's efforts to reduce gender gap like women scientist A, B, C scheme, Marie Curie, women Excellence Award fellowship to women candidates, Kiran scheme etc. Considering the need of gender advancement in STEMM area at institutional level, the GATI program is now launched by the Department of Science and Technology (DST).



Women in STEMM in India

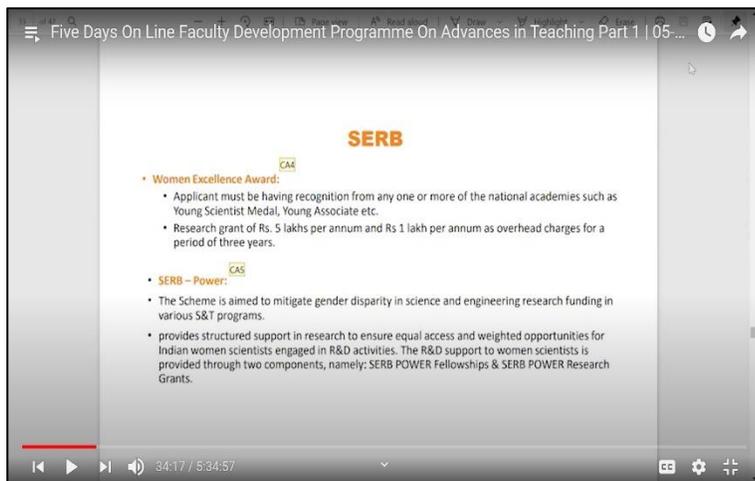
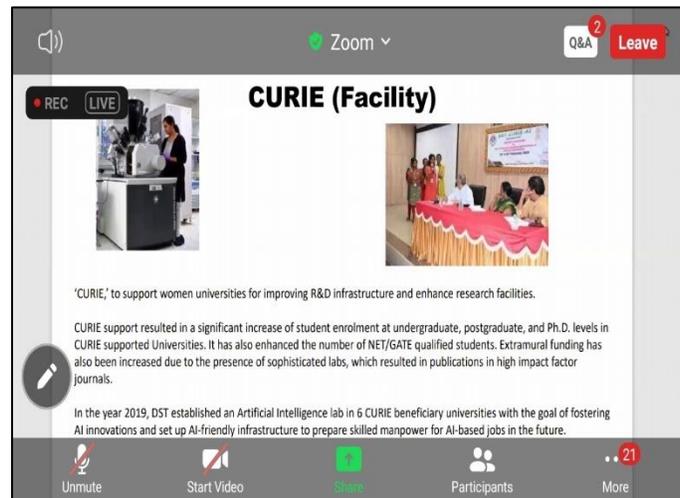
REPRESENTATION

- Women form more than 40% of undergraduates in science.
- Around 35% are women among the Ph.D.'s in science.
- Not enough representation of women in STEM careers
- 15 percent of science faculty positions.
- Only about 14 % of government scientists are women.
- 5-7% fellows of the Academy of Sciences

THE LEAKY PIPELINE

- Deep rooted gender bias; Short term contracts and lack of job stability and continuity of employment rights
- Early academic STEM career stage coincides with the child bearing age / child care responsibilities
- Inconsistent implementation of diversity policies and budget cuts
- Social and cultural Issues & Challenges

She has thoroughly discussed that woman are an important section of the workforce, more particularly in the science & technology (S&T) domain. However, a large number of well-qualified women get left out of the S&T activities due to various circumstances which are usually typical to the gender. The challenges faced by them are several but most often the "break in career" arises out of motherhood and family responsibilities. She talked about that how to address such issues, Department of Science and Technology (DST) launched "Women Scientists Scheme (WOS)" during 2002-03.



This initiative primarily aimed at providing opportunities to women scientists and technologists between the age group of 27-57 years who had a break in their career but desired to return to mainstream. She was very sure that through this endeavour of the Department, concerted efforts have been made to give women a strong foothold into the scientific profession, help them re-enter into the mainstream and provide a launch pad for further forays into the field of science and technology.



Mr Shailendra Singh, Founder and CEO SustainMantra

Faculty Development Program
Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals
 (Under GURU-DAKSHTA Faculty Induction Programme)
 01st – 05th JUNE 2021

- Mr. Shailendra is sustainable development strategist, with keen appreciation of the impact of climate change on business models.
- Bachelor of Chemical Engineering (UDCT, Mumbai) & MBA (JBIMS, Mumbai).
- He has over three decades of technical & commercial experience in Chemicals, Plastics & Packaging with leading Global MNC's in Asia- Pacific Region in senior leadership roles. His last role was that of MD & CEO of DIC India Limited a public listed Japanese MNC, based out of Noida, India.
- He now runs his own company M/s Sustain Mantra, focusing on Sustainability & Circular Economy & is Managing Partner in M/s Green Easy LLP, consultants to the Built Environment. He has held board positions in Indian Institute of Packaging (IIP), Society of Plastic Engineers-India; All India Printing Inks Manufacturer Association (AIPIMA).

Mr. Shailendra Singh
 Founder and CEO
 SustainMantra

Dr. Maya Kumari's screen

Mr Shailendra presented his talk on “The ‘dark side’ of sustainable development/ circular economy”. His presentation focused on the climate change imperative, biophysical boundaries, and social indicator factors, improving social indicators, comprehensive self-sustaining business models, informal sector integration add more. He discussed that the corporate perspective is all about building resilience, how to make business model resilient in the volatile environment.

He expressed his concerns on the fact that even though India is doing well in terms of biophysical boundaries, but the social boundaries are very poor. He also discussed that how government agencies and departments have collaborated with international agencies to build an SDG map for India and the initiatives undertaken to improve the livelihood of the poorest of poor, spanning across the field of education health sanitation justice and several other fronts.

Agenda of Presentation

- **Understanding the Doughnut – Context Setting**
 - The “ Climate Change “ Imperative.
 - Bio-physical Boundaries & Social Indicator factors
- **India Imperative**
 - Aspirations of a 1.4 Billion People.
 - Improving Social Indicators.
- **India's Inherent Strengths integrated into CE Business Models**
 - Comprehensive Self Sustaining Business Models
 - Informal Sector integration- Leverage inherent strengths

Mr. Shailendra Singh's screen

The Doughnut

“Setting the Context”

The Linear Economy model helped the Global North achieve Social Goals, but left the Bio-Physical boundaries greatly overshoot!

The challenge for the Global south is to now create social impact whilst transitioning to a brand new circular economy business model!

He was with the view that the intensified rhythm of mass production “naturally” requires more natural resources than what the earth carrying capacity – the so-called “planetary boundaries” – can provide. Such unsustainable consumption will increase if we keep with our linear ‘take – make – dispose’ economic models. He also talked about overpopulation and growing demand for goods result in mind-boggling volumes of waste as well as air, soil and water pollution with high negative impacts on human and ecosystem health.

Although the detrimental effects of this linear consumption cycle are well-known, sustainable production, supply and efficient use of resources also represent global challenges to be tackled. He discussed thoroughly about India's imperative and role in circular economy.

He also discussed in detail about the climate related disasters that hit India and other problems like plastic waste crisis. In continuation he describe in detail about an effective plastic waste management system in India from collection, segregation, finance, infrastructure development, regulation to consumer awareness. Later we talked about circular economy business models with social impacts.

India Imperative

These are the world's largest economies (GDP, current prices - US Dollars)

2019	2019
1 United States	United States
2 China	China
3 Japan	Japan
4 Germany	Germany
5 France	India
6 United Kingdom	United Kingdom
7 Brazil	France
8 Italy	Italy
9 India	Brazil
10 Russian Federation	Canada

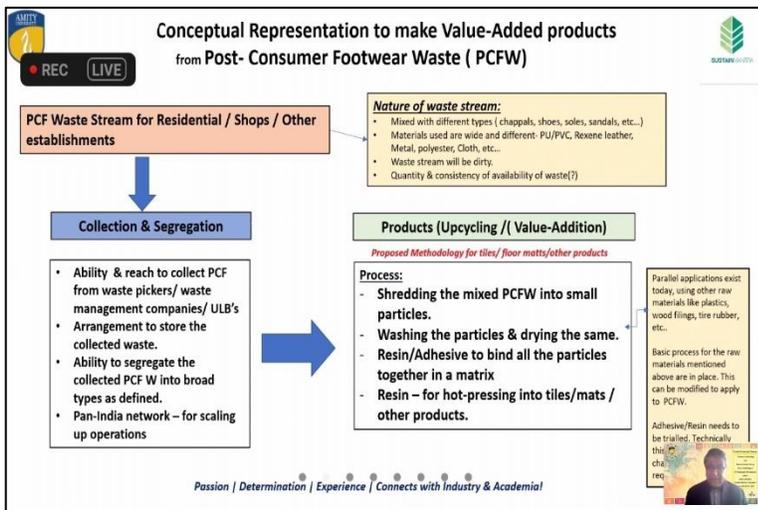
Source: IMF, World Economic Outlook, October 2019

Annual change in extreme poverty rates (percentage points)

Average of the extreme poverty percentage points change over the time period 2005-15 (last year and 2015), top 15 countries.

Legend: Sub-Saharan Africa, East and Central Asia, East Asia and Pacific, South Asia

Are we truly the world's 4th largest Economy with such wide gaps in social indicators?



He also discussed about conceptual representation to make value added products from post-consumer footwear waste. He said that the circular economy generates value through the entire lifecycle by extending the lifetime of products, allowing them to cycle longer in the economy and recuperating their material basics. In our linear economy, value is created by producing and selling as many products as possible. Instead, for the circular economy concept, most of a good's value lays in its functionality, which therefore is tried to be maintained even after the use-phase of its lifecycle.

The adoption of a circular approach therefore requires innovative business models which create, capture and deliver value based on resource efficiency and extending products' useful life and closing materials flow cycles. These circular strategies require the consideration of circular principles from the very early stages of product design processes. Part of the literature identifies eco-design as an approach to improve the environmental performances of products and decrease resource depletion.

India - CE Business Models with Social Impact

The Plastic Waste Crisis in India

The Problem Statement

Plastic industry in India has grown at a CAGR of around 10% in volume... This equates to 50.5% with 20 AMPLA in FY20. This has fueled the accumulation of plastic waste. Every minute, more than one million plastic bags are thrown away after an average use of just 15 minutes!

- Only 8% of the global plastic waste generated between 1950-2016 was recycled and 12% incinerated.
- India generates over 26000 metric tons of plastic waste everyday, 40% of which gets incinerated.
- 80% of total plastic produced in India is incinerated.
- India (164-330 tons) and Mongolia (164-330 tons) are the world's highest per capita plastic consumers. The per capita consumption of plastic in India is 11kg, which is expected to rise by 80% to 20kg by 2022.
- 60% of the total plastic waste generated in India is recycled.

Social Dilemma

WASTE PICKERS: 100% OF PEOPLE ARE POOR

REGULATED WASTE PICKERS WITH ID CARDS: 0% TO 10% PARTICIPATION

RETAILER RECYCLINATE: 0% TO 10% PARTICIPATION

Source: Leave no Trace

Plastic Waste Collection – A new Idea / Thought!

It is all about reverse logistics

Large FMCG Companies in India have a well established distribution channel for bringing their products to customers pan-India. Wholesalers/distributors/retailers – well established channel already

- Can this be used to create a reverse logistics channel for plastic waste?
- Is there scope for these large FMCG companies to collaborate in forming such a system?
- How do FMCG companies incentivize customers to bring plastic wrappers to their nearest retailer?
 - Buy-back price?
 - New unit for a certain number of wrappers returned by the customer?
 - or just scheme by FMCG companies for similar product categories?
 - This type of scheme has been offered by companies to promote their new product sales.
 - Can FMCG competitors learn to collaborate?

Benefits of this approach

- Consumers learn to segregate – because there is an incentive.
- Waste obtained is clean, hence of value to recycler.
- Leverages an existing channel no incremental cost to set up reverse logistic.
- Pan India coverage.
- Provides FMCG companies to build innovative marketing messages around this scheme.

India – CE Business Models with Social Impact

A thought – A proposal

Creating a "Support" Eco-System

The End Goal :
Build sustainable business model & entrepreneurs in the informal sector

Is this obvious!!
Is this the end story?

How can we develop this further & create even more social & natural capital?

Plastics Recycling / Recovery Option

He gave the excellent idea or hypothesis in his words to how to make the maximum use of skill but unnoticed and unauthorized people to bring into the mainstream employment and have a sustainable economy in our country. His idea was much appreciated by the panelist and the other participants.

Social & Natural Capital – Increasing this in a Quantum Way!

Conceptual yet a practical approach

Imagine building a group of trained individuals/entrepreneurs who are capable of assembling 'RAIN' (1 potential new green job creation module – 100,000 minimum)

- Skill development council
- CSR funds
- Training the bottom of the pyramid

Address: WATER STRESS, RELEVANTATES GROUND WATER.

Imagine building a group of trained individuals/entrepreneurs who are capable of assembling 'RAIN' (1 potential new green job creation module – 100,000 minimum)

- Skill development council
- CSR funds
- Training the bottom of the pyramid

India – CE Business Models

Creating Social Capital, where it matters!

Repair skills that are a part of Indian Ethos & way of living.

Can this "Segment" be upskilled/ upscaled to kickstart the Repair economy?

Rehabilitated slums are still in our cities in the underprivileged urban areas, causing disease like dengue/typhoid and spreading the covid-19 across various cities.

Creating Social Capital!!!

Mr. Shailendra has struck a chord of discussion on circular economy and it was a great discussion among the panelist and participants.



Prof. Chirashree Ghosh, Department of Environmental studies, University of Delhi



The slide is titled "Faculty Development Program" and "Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development (Under GURU-DAKSHITA Faculty Induction Programme) 01st - 05th JUNE 2021". It features a portrait of Dr. Chirashree Ghosh on the left and a list of bullet points on the right. At the bottom, there are icons for 17 Sustainable Development Goals (SDGs) and the IQAC logo.

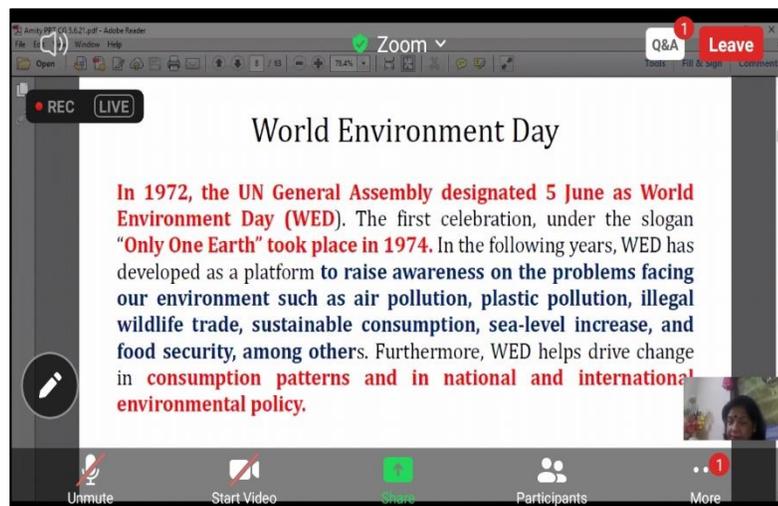
- Dr. Chirashree Ghosh, Associate Professor, University of Delhi, Department of Environmental Sciences.
- She did her Ph.D. from Visva Bharati University and Post Doc from University of Wageningen, The Netherlands
- Broad area of interest: Environmental Pollution and Health
- Inventory preparation of pollutants and their impacts on Human Health: Indoor and Outdoor
- Tropospheric Ozone pollution monitoring and bio-mapping of other green house gases for understanding global warming concept –special highlights to the topic of Carbon Sequestration & Carbon mapping.
- Impact of heavy metal and pesticide toxicity on the biomagnification/bioaccumulation process of aquatic food chain.
- She has guided several Ph.D's
- She has several papers and books to her credit

Prof. Chirashree Ghosh, Department of Environmental studies, University of Delhi presented her talk on “nature-based solutions for achieving sustainable development”.

The talk was started at the wonderful note of a student teacher relationship, and she has talked about that how a good teacher who is responsible and aware of his or her duties can inculcate good morals and

insight into their student’s life. She has talked about that how she loves being a teacher and how sales sincerely she is contributing to the research studies and carrying out the social duties related to the environmental problems and its solutions.

She explained that nature-based solution is an initiative by IUCN and defined as actions to protect, sustainably manage, and restore nature or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human wellbeing and biodiversity benefits.



She discussed how World Environment Day has developed a platform to raise awareness on the problems facing our environment such as air pollution, plastic pollution, illegal wildlife trade, sustainable consumption, sea level rise and food security, among other. Furthermore, World Environment Day helps drive change in consumption patterns and in national and international environmental policy.

Environmental Performance Index

The 2018 Environmental Performance Index (EPI) ranks 180 countries on 24 performance indicators across ten issue categories covering environmental health and ecosystem vitality. These metrics provide a gauge at a national scale of how close countries are to established environmental policy goals. The EPI thus offers a scorecard that highlights leaders and laggards in environmental performance

Country	Epi ranking	Environmental Performance Index	Environmental health	Ecosystem vitality
India	177	30.57	9.32	44.74

Later she discussed about urbanization in India and highlighted that in India and most of the developing countries Urban Development is mostly uncontrolled and unplanned. She also expressed her concerns that in 2020 environmental performance index ranking of 180 countries on 24 performance indicators across 10 issues categories covering environmental health and ecosystem vitality India came at 168th rank.

She discussed about positive impacts on environment by the reduction of air pollution and greenhouse gas emission. She also shared that how the lockdown in India led to the reappearing of animals at the same time the most suffered ones were the workers especially daily wage earners, indigenous people, informal sector etc.

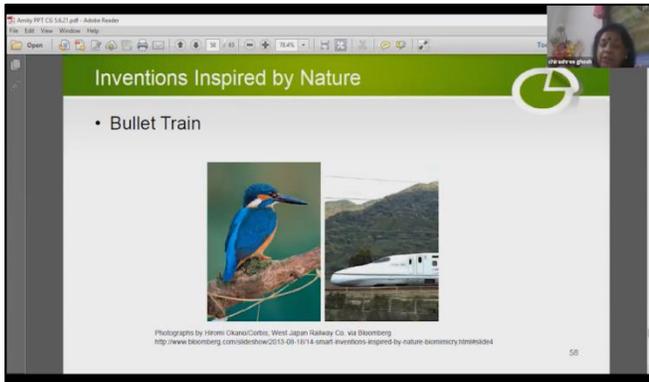
POSITIVES IMPACTS ON ENVIRONMENT

- Reduction of air pollution and GHGs emission**
(Industries, transportation and companies have closed down, it has brought a sudden drop of greenhouse gases (GHGs) emissions.)

urban health matters

Healthy environments
Working conditions must be made safer for workers and families.

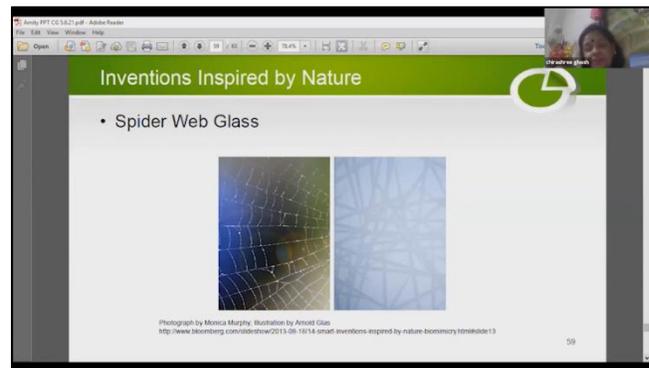
She also highlighted some points of difference between urban and rural health and key elements of health for urban poor like marriage & infertility, maternal health, child survival, family planning, environmental conditions, infectious diseases, and access to healthcare. Later she highlighted the fundamentals of smart city like smart environment, smart health, and smart governance.



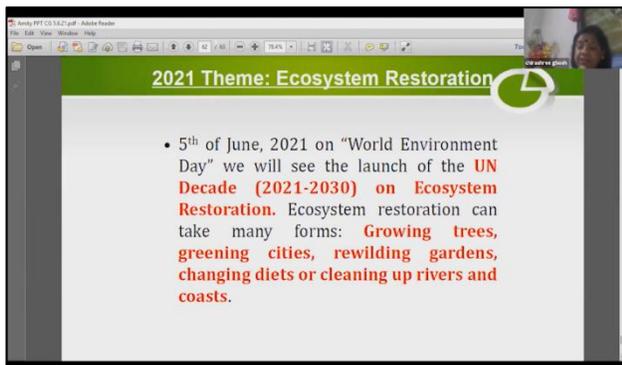
She discussed the benefits of the lockdown and how the nature bounces back during lock down. She talked of several ecofriendly solution in her deliberations.

She has emphasized that how been close to nature has helped human beings to grow. She quoted several examples where the ideas and innovations are inspired by nature.

She mentioned about biomimicry and nature’s inspired discoveries and a good relationship we can share to have a sustainable world. She said the central idea is that nature has already fixed many problems society is facing. Animals, plants, and microorganisms are experienced engineers. They know what works, what is appropriate, and most importantly, what lasts on Earth.



She said that with more than 50% of the world’s population concentrating along coastlines, accelerated coastal development inflicting severe stress on natural ecosystems is inevitable, and said that it’s the right time to start working on it.



The lecture was followed by a thorough interaction among the panelists. Dr. Chirashree and Mr. Leonardo has shared lots of good ideas and sustainable research with the participants and the organizer.

Mr Leonardo Piccinetti, EU Climate Pact Ambassador, England

Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development
(Under GURU-DAKSHTA Faculty Induction Programme)
01st - 05th JUNE 2021

Mr. Leonardo Piccinetti is an EU Climate Pact Ambassador and is Senior Research and Innovation Advisor; he is the founder and CEO of several SMEs around Europe (UK, Italy, and Ireland).

- Leonardo is an experienced Project Manager and Process Consultant for complex EU programs. He has good knowledge of project cycle management, logical framework as well as evaluation and preparing ToR. Leonardo has a detailed understanding of EU instruments, e.g., TACTIS, CARDS, PHARE, IPA, CPA, SF/OP, CIP; and DGs; e.g., Enterprise, Regio and EuropeAid with 20 years of experience in EU Innovation (e.g., RIS-RITTS, RIS-NAC and SF-Operational Programme).
- Leonardo and his team designed and delivered the EU process and innovation methodology training workshops. He has extensive experience in trans-national working and promoting good working relationships at all levels in the private and public sectors. Leonardo writes proposals for EU competitive tenders. His team undertakes training and coaching in more than 100 organizations (Universities, Science Parks and Chamber of Commerce).

Mr. Leonardo Piccinetti, EU Climate Pact Ambassador,
Warrington, England, United Kingdom

Mr Leonardo Piccinetti, EU Climate Pact Ambassador, England, presented his talk on “EU postCovid19 toolkit: Innovation for sustainability foresight”. He started his talk by highlighting the impacts of COVID-19 from political, social, economic and technology perspective. Later he discussed the EU policy of COVID-19 like the focus of development of European industrial ecosystem considering COVID-19, they need to ensure fair competition globally and within EU internal market etc.

He also talked in detail about best practices of your response to Covid19 in different European countries. He discussed on the realization of a circular economy initiated through a number of measures and corporations to transform the industrial sector and all value chains to be ready in 2050 and the resilience on low emission technologies and sustainable products and services.



Impact of COVID-19

Political

- The control of the EU's external borders has been reinforced
- EC are working to limiting the spread of the virus, providing medical equipment and tackling socio-economic consequences.
- The EU leaders agreed on the recovery plan.
- EC adopted a regulation which aims to deployment of a vaccine against COVID-19.
- EC adopted conclusions acknowledging the challenges caused by the COVID-19 pandemic: in the education and training systems, Supporting continuity in education by listing a range of online platforms and projects.
- EC adopted the implementation of the EU digital strategy

Economic

- The consequences are felt differently by various regions and population groups
- many manufacturers are facing concerns regarding supply chain disruptions.
- Immediate health care costs dented government finances
- Economies based on SMEs will face more difficulties in financing sources.
- Unemployment across Europe has risen.
- EU leaders agreed on the long-term EU budget for 2021-2027, which will be worth €3074.3 billion.

Social

- The health system was not sufficient to fight with the pandemic.
- rising in global unemployment
- Jobs in the service industries are affected, including in culture and tourism
- Education closure and the adoption of distance education may negatively affect students' learning through many channels: less time spent in learning, stress symptoms, a change in the way students

Technology

- The EIB has a portfolio of 22 top European companies with promising R&D projects in vaccines, treatments, and diagnostics for COVID-19.
- The EU has invested €459 million from Horizon 2020 in grants for 103 new research projects targeting the pandemic.
- The EC has mobilized additional €122 million from its research and innovation programme, Horizon 2020, for urgently needed research dedicated to the Coronavirus
- Member states responsible for research and innovation supported the first ten priority actions of the first ERA4e/Corona Action Plan.

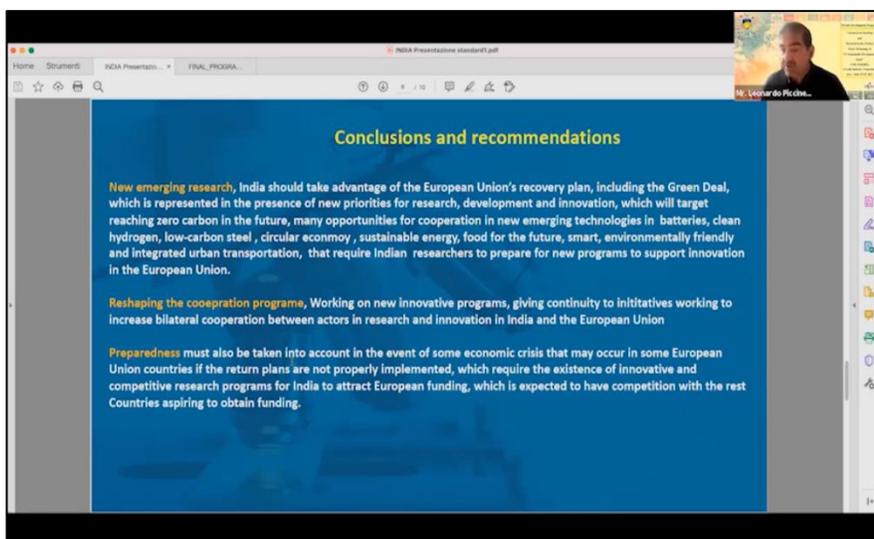
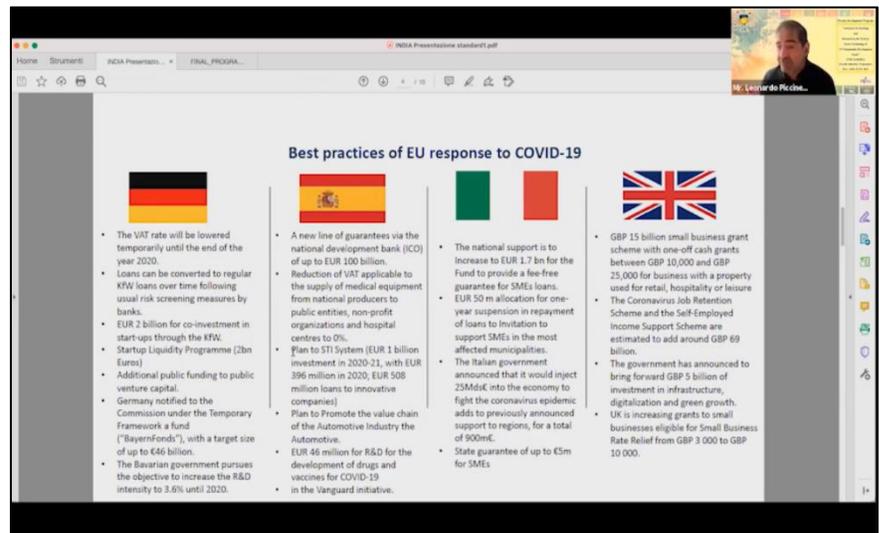
He talked about the various impact of COVID 19 in details. He said that the impact of COVID 19 work on the PEST model that is political economic social and technology. He talked about the initiatives taken by the European Union for meeting the challenge of COVID-19. He talked about that how the European countries have adapted the challenges caused by the COVID-19 and the amendments made in the education and training systems, supporting continuity in education by listing a range of online platform and

projects.



He has discussed about the health systems and was concerned about the insufficient health aids to fight with the pandemic. He also discussed about some other social problems like global unemployment, loss of jobs in industries including culture and tourism. He also talked about the distance education may negatively affect the growth learning and adaptation in the students.

Adding further he has explained about the consequences that are felt by various regions and population groups and the economic crisis faced by them during this pandemic he has also talked about that how the technology can help us to go with the pandemic and how much money and funds were invested in the study of R&D in vaccines, treatment, diagnostics for COVID-19. He discussed about the best practices of four European Union countries for a safe and secure environment.



At last, he suggested some recommendations like reshaping the corporation program, preparedness that must be considered in the event of economic crisis, science diplomacy, mechanism of smart specialization, research, and innovation policies etc.

He has extensive experience in trans-national working and promoting good working relationships at all levels in the private and public sectors.

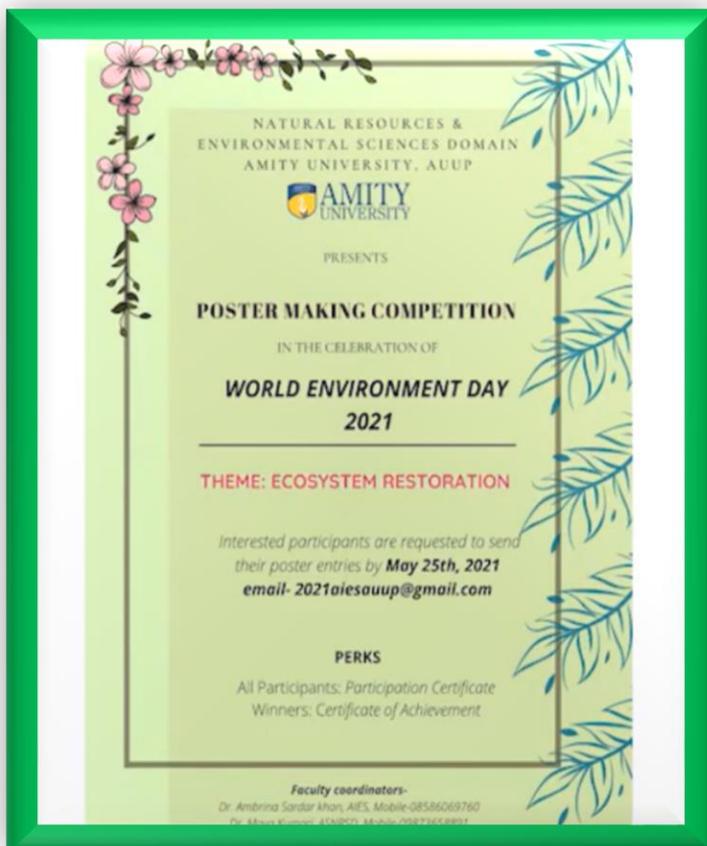
Leonardo writes proposals for EU competitive tenders. His team undertakes training and coaching in more than 100 organizations (Universities, Science Parks and Chamber of Commerce). Mr. Leonardo supports new policies and changes of regulation on the use of wastewater when institutional structures are changing (decentralization, changes of powers, etc.).



He proposes policies to overcome barriers to the diffusion of innovative approaches to urban water management: enhance governance structures that can manage water at several scales, engage stakeholders and properly regulate wastewater services.

Mr. Leonardo is currently working on a circular economy approach in water regulation and discussed its future prospects in detail. He discussed about his proposed legislation for

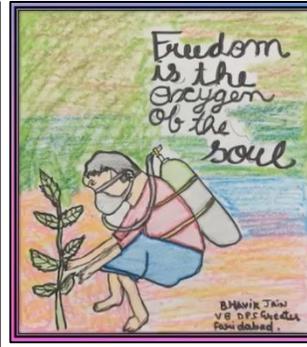
reused water aiming at fostering the alignment of various regulatory domains involved by water conservation and reuse. He shared that he is working closely with the government as the member of the EIP Water Action Group City Blue Print and COWAMA. He is also a Steering Committee Member of NETWERC H2O (Network for Water in European Regions and Cities).



The lecture was followed up by the poster presentation and the announcement of the names of the winners of the poster competition. The poster competition was organized on the occasion of World Environment Day 2021, on the theme of ecosystem restoration. The poster competition was organized by the Natural Resource and Environmental Sciences Domain and coordinated by Dr. Ambrina and Dr. Maya.



NAME: SAMBHAV SHARMA
CLASS: X
SCHOOL: OXFORD SENIOR SECONDARY SCHOOL, VIKAS PURI
LOCATION: DELHI



NAME: BHAVIK JAIN
CLASS: V
SCHOOL: DELHI PUBLIC SCHOOL GREATER FARIDABAD
LOCATION: FARIDABAD

Around 40 entries were under digital and non digital purpose of the competition the younger generation the th age groups, schools,



received for the competition digital posters. Since the is to create awareness among competition was opened to all colleges and universities etc.



I POSITION
NAME: ARVEY MALHOTRA
CLASS: X
SCHOOL: DELHI PUPIC SCHOOL GREATER FARIDABAD
LOCATION: FARIDABAD



II POSITION
NAME: ZAHWA HUSAIN
PROGRAM: B.A.
INSTITUTE: EDUCATION AND ANCIENT HISTORY DEPARTMENT
LOCATION: ALLAHABAD UNIVERSITY, UP



III POSITION
NAME: NASAR QUADRI
PROGRAM: B.TECH AE
INSTITUTE: ASET
LOCATION: Amity University, Noida



NAME: MEGHA SHAH
PROGRAM: M.Sc. EVS
INSTITUTE: AIES
LOCATION: Amity University, Noida

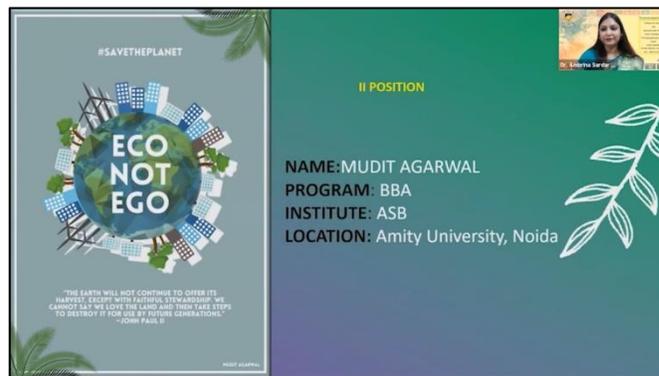
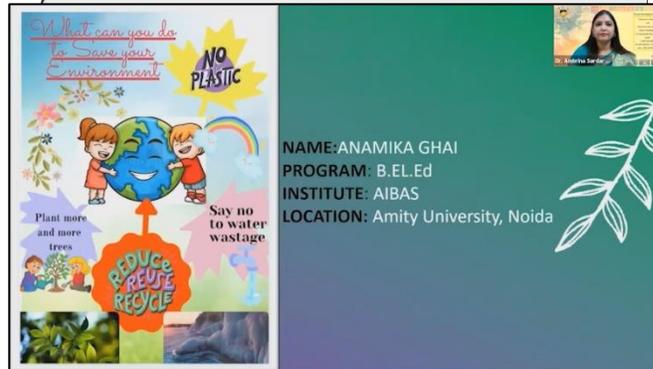
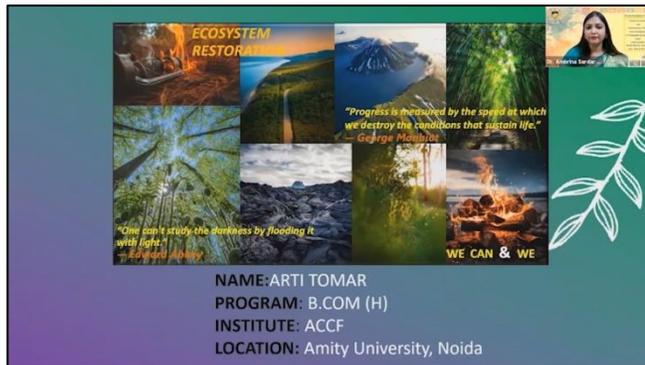
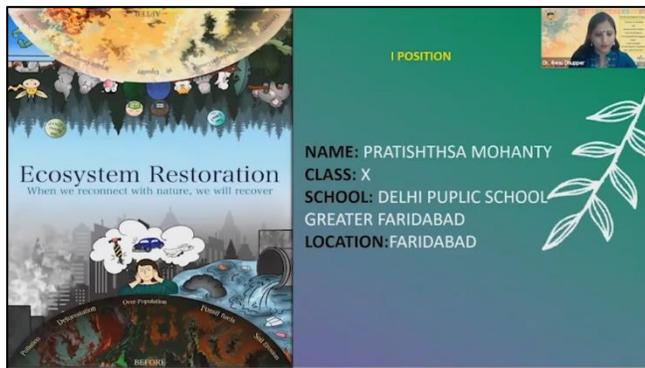


NAME: KASHVI MALHOTRA
PROGRAM: B.EL.Ed
INSTITUTE: AIBAS
LOCATION: Amity University, Noida



II POSITION
NAME: TANMAY SINGH
PROGRAM: B.Sc. (H) PHYSICS
INSTITUTE: AIAS
LOCATION: Amity University, Noida

A compilation of the posters were presented during the faculty development program and had received lots of appreciation and acknowledgement from the panelists and the participation participants.



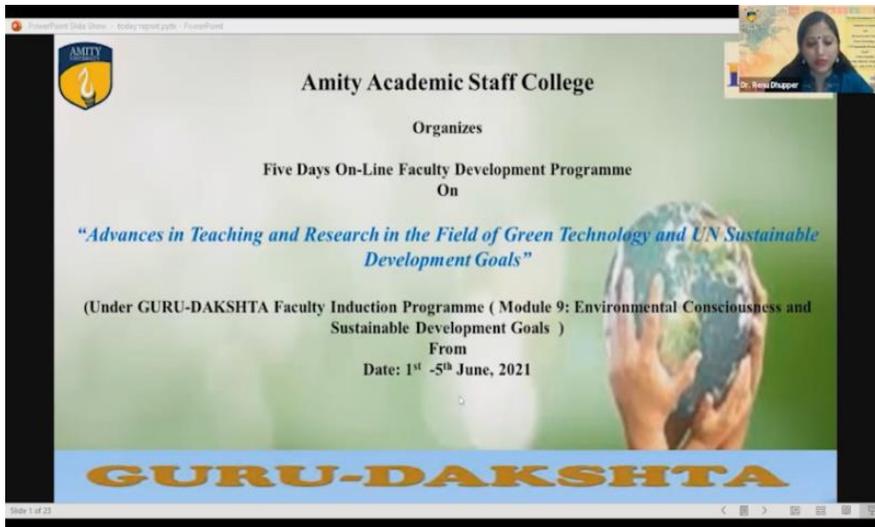
The Online Assessment for Plenary Session –I was done at the end. The google form was pasted in the chat box and the participants were supposed to attempt all the questions. The aim of the assessment was to know that how actively and sincerely the participants have attended the FDP. Total 218 responses was received from the participants.

VALEDICTORY- The valedictory has three guests of honor from across the globe who were experts from different areas and spoke on the role of Sustainable development goals at workplace, ecosystem restoration and in higher education system. Total 530 people have registered for the event and 321 attended the event on the V Day.



VALEDICTORY 04:25PM – 06:25PM	
04:25 pm - 04:30 pm	Welcome Address by Dr. Ambrina Sardar Khan , Assistant Professor-II, Amity Institute of Environmental Sciences, Amity University Uttar Pradesh, India
04:30 pm – 04:50 pm	Report Presentation by Dr. Renu Dhupper , Assistant Professor-III, Joint Coordinator, Amity Institute of Environmental Sciences, Amity University Uttar Pradesh, India
04:55 pm – 05:05 pm	Few thoughts by Prof. (Dr.) Balvinder Shukla , Vice Chancellor, Amity University Uttar Pradesh (AUUP)
05:10 pm – 05:30 pm	Address by Guest of Honor Ms. Pramila Thapa , Advisor to Yeti Health, Sciences Academy, Nepal, Former Registrar & Member Secretary of Senate in Purbaanchal University, Bāgmatī, Nepal Topic: Emotional Intelligence and Sustainable Development goals
05:35 pm- 05:55 pm	Address by Guest of Honor Dr. S. S Samant , Director, Himalayan Forest Research Institute, Conifer Campus, Shimla, Himachal Pradesh
05:55 pm -06:15 pm	Address by Guest of Honor Dr. Wendy M. Purcell PhD FRSA , Professor Emerita & Former President VC, Plymouth Univ. UK; Research Scholar, Harvard University Topic: 'Accelerating delivery of the SDGs: what teachers and HEIs can do'.
06:15 pm- 06:25pm	Vote of Thanks by Dr. Manju Ranjan Rawat , Joint Coordinator, Associate Professor, Amity Institute of Environmental Sciences, Amity University Uttar Pradesh, India.
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Valedictory session was started with the welcome address given by Dr. Ambrina Sardar Khan, Assistant Professor-II, Amity Institute of Environmental Sciences, Amity University with the blessings of Hon’ble Founder President Sir, Hon’ble Chancellor Sir, Hon’ble Vice Chancellor, and mentor AIES. The journey began five days ago with an aim and a hope that we will explore the niche where development and nature can co-exist, will harmonized, and can live together. With the cluster of eminent speakers sharing their research, experiences, ideas and hope to see a better and a sustainable world have paved a path for all of us to begin and to explore new avenues in the Field of Green Technology and UN Sustainable Development Goals “has setup the base to move forward for all of us.



The report Presentation was done by **Dr. Renu Dhupper**, Assistant Professor-III, Joint Coordinator, Amity Institute of Environmental Sciences, briefing the discussion and the deliberations made by various eminent speakers.

She has highlighted the key points of the FDP and explained the outcomes achieved in detail.

Prof. S. P. Singh, Director ASNRSD

He appreciated and congratulated all the faculty members and team of FDP who were involved for doing excellent job, and he said we are looking forward to continuing to make the programs successful in future as well. He said that this has proved well, and this is one of the examples that if we work in coordination then we can do a very better so.



Prof. D. K. Bandyopadhyay, Chief Advisor FPO / Chairman, Amity Law School, Mentor, Amity Institute of Environmental Sciences, Amity University Uttar Pradesh,

He congratulated for the success of FDP. He said that we started this program in terms of giving recent development in some upcoming field and the topic that we chose under this Guru Dakshta scheme, which is that environmental consciousness and sustainable development goals and this faculty development program and very

correctly it was mentioned with objective to build sensitivity and develop awareness of great technology and sustainable development goals among participants to foster skills in thinking reasoning inquiry and making decisions about the environment and world around them.

He described about the key message of this FDP given to all attendees:

1. Countries need to deliver on their existing commitments to save 1 billion hectares of degraded land and make similar commitments for marine and coastal areas.
2. The massive economic growth of recent decades has come at the cost of ecological health now how do you really take care of that.
3. Ecosystem management is needed on a large scale in order to achieve the sustainable development agenda that is most important thing.
4. How do you really develop that ecosystem management and that you know with careful planning restoring 50 percent of converted lands while stopping further conversion of natural ecosystem would avoid 60 percent of expected species extinctions that mean the biodiversity conservation is what we are talking about.
5. Achieving successful SDG at scale will require deep changes and that those deep changes which includes adaptive inclusive wealth as a more accurate measures of economic progress this will rest on the widespread introduction of natural capital accounting. The second important message that goes that when taking action at food waste making more efficient use of agricultural land and encouraging a shift to a more plant-based diet expanding awareness of the importance of healthy ecosystem throughout our educational systems.
6. Everyone has a role to play in this novel venture that's most important thing and how do you really involve everybody because decadent ecosystem restoration aims to catalyze global movement among local communities, activists, and women, youth engineers in indigenous groups, private companies, financial investor, research and government at all levels. The beauty of this is that it conveys a message of action and hope. It can happen at any scale whether a backyard plot, a city park, a river valley, a national forest or a globally threatened ecosystem this means that everyone can get involved that's most important thing.
7. Achieving the aims of the U.N decade will require action by many and we won't talking about it government to ensure that government recovery plans incorporate significant allocation of ecosystem restoration as a central component of to delivering a green sustainable and fair recovery currently only about 18 percent of the recovery stimulus plants can be characterized green.



Prof (Dr.) Balvinder Shukla, Vice Chancellor, Amity University Uttar Pradesh

Hon'ble Madam has congratulated whole team of domain of Natural Resources and Environment Studies under the leadership of Prof. D. K. Bandyopadhyay for organizing wonderful Faculty Development Programme Under GURU-DAKSHTA Faculty Induction Programme and congratulated for the World Environment Day.

Faculty Development Program
"Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals"
 (Under GURU-DAKSHIYA Faculty Induction Programme)
 01st – 05th JUNE 2021

Prof. (Dr.) Balvinder Shukla
 Vice Chancellor
 Amity University Uttar Pradesh, Noida, India

- Prof. (Dr.) Balvinder Shukla is a Ph.D. from Queen's University, U.K.
- She has over 3 decades of rich scholarly experience in Industry & Academia.
- She is Professor of Entrepreneurship, Leadership & IT and the Vice Chancellor of Amity University Uttar Pradesh.
- She has been one of the key team members, spearheading, and instrumental in, the exponential growth of Amity Group engaged in Higher Education.

9 AFFORDABLE AND CLEAN ENERGY, 10 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 15 LIFE ON LAND, 16 PEACE, JUSTICE AND STRONG INSTITUTIONS, 17 PARTNERSHIPS FOR RISE

This valedictory session becomes extremely important that we are concluding our Faculty Development Program and that to own the green technologies and which is in sync with what is the environment day. The theme that how we are realizing and how we are really working on it. Whether the environment day is theme is the reimagine, recreate, and restore and this green technology and this UN Sustainable Development Goal hold

the workshop which has been done. She gave assurance to all the participants from various universities and colleges who have attended that they are not only going to develop teaching pedagogies, but they are going to integrate these concepts into the curriculum for developing the future generation who are pro-environment for poor natural resources.

Therefore, this faculty Development Program becomes extremely important the vision of the Hon'ble Founder President that how do we as a higher education institution develop the youth which not only contributed to their own career, they make their career but also look at the world requirement, the national requirement, making this world a better place to live because the environment is very important. Environment directly helps the impacts the health environment, directly impacts the agriculture, environment directly impacts the forest natural resources, and what kind of the technology we should use, what kind of the strategies we should make so that we are able to meet all the UN sustainable development goals.



She also said that faculty development program is going to bring not only the improvement in the teaching learning, the curriculum but also the research projects which faculty will be taking, will always be focusing on the SDG, the meeting all the research projects such initiative which will be focused on the community requirement, which will be focused on the environment and so that we become the fully country as a rejuvenate. How the campus to the community, to the city, to the nation, we can take all kind of the initiatives which ultimately

contributes to sustainable development goals.

She said on this World Environment Day we all commit that from this FDP which has focus on the green technologies we will move ahead designing and developing the curriculum and the pedagogy and the developing the youth and conducting the research, we will meet the sustainable development goals.

Prof. Tanu Jindal, Group Additional Pro- Vice Chancellor (R&D), Amity University Uttar Pradesh



She appreciated and congratulated all the FDP team and gave good wishes. She said what we have learnt through various speakers we are able to impart to our students and future generations so that they can implement the same in their leads, in their future career and other areas of their life. She also thanked all the eminent speakers which have been part of this five

days FDP. She also said sustainability cannot be achieved without using green technologies and many green technologies have been discussed and would like to look forward as students and faculty discover innovate patent in a new technology for the future use so that carbon footprint can be reduced.

Ms. Pramila Thapa, Advisor to Yeti Health, Sciences Academy, Nepal, Former Registrar & Member Secretary of Senate in Purbaanchal University, Bāgmatī, Nepal



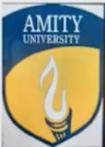
She is Guest of Honor of the FDP. She expressed her gratitude to the Hon'ble Chancellor and Hon'ble Vice Chancellor for giving this opportunity and congratulated to all eminent speakers, panelists teachers and staff for their hard work and dedication.

She talked about linkage between Emotional Intelligence and Sustainable Development

goals. She said that the second issue of the old economic forum: job report predicts the loss of 75 million job by 2025 but it is also predicting the creation of 133 million jobs.

Five Days On-Line Faculty Development Programme on
“Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals”

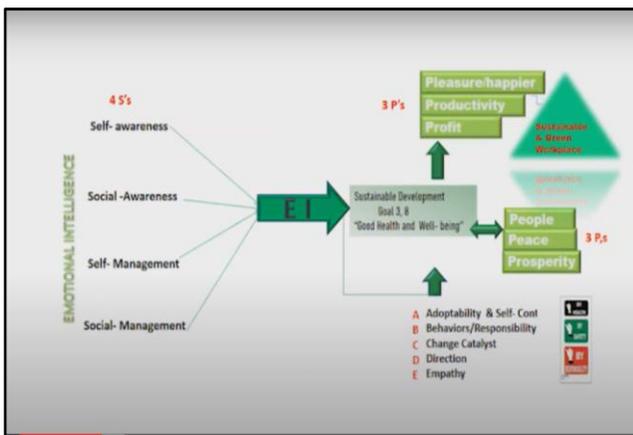
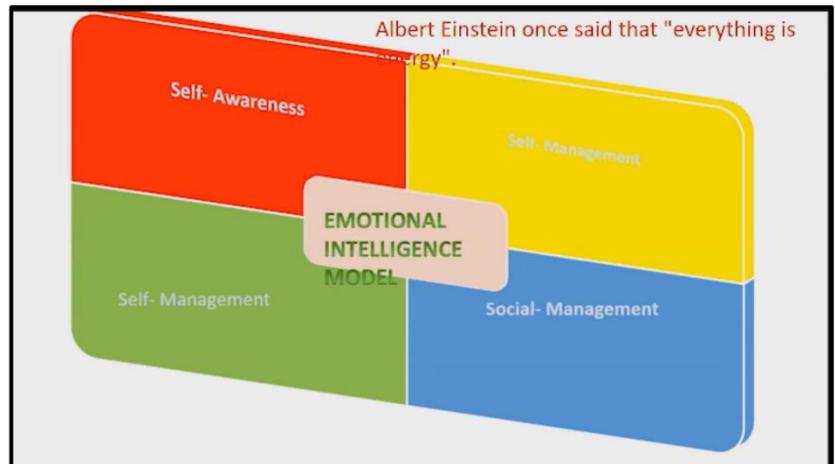
Topic: “Emotional intelligence & Sustainable/ Green Workplace”
 On 5th June, 2021.
 By
 Pramila Thapa
 (Nepal)




She discussed about Emotional Intelligence Model, Self-Control, Self-Awareness, Self-Responsibility., Social Awareness, and Social Management. Emotional intelligence, the study reveals that higher emotional intelligence is associated with workplace flourishing. She emphasized how to balance the emotional and professional outlook. She discussed self-awareness, self-

management, self-control, and social management in details.

She discussed ABCDE model of adoptability, behavior, change, direction, and empathy. She said how this model help us to achieve sustainable goal 3 & 8, good health and wellbeing. She also discussed 3 Ps namely people, peace, prosperity. She also discussed the various issues at the workplace such as nutrition health violence gossip toxic culture role conflict bullying etc. She has talked about the physical comfort and psychological comfort zone as the key to happiness for any workplace. She also spoken about that the mental health and happiness is responsible for a productive and efficient environment she discussed several studies that have revealed that higher emotional intelligence is associated with eco-friendly, environmentally sensitive, resource efficient and socially responsible environment.



Mental health at work depression and anxiety disorder cost the global economy \$ 1 trillion every year in lost productivity (WEF, 2020).
 According to WEF, 2021; Result of the Pandemic:
 56% report an increase in anxiety about job security.
 55% report an increase in stress due to work routines changes.
 50% report increasing difficulty maintaining a work-life balance.
 46 % report a decrease in productivity.
 A study revealed that female nurse 70% more likely to die from suicide than a female doctor- Steveford, 2021.
 Workplace bullying more than 60 million working professionals are affected by bullying (WEF, 2019).
 Worldwide obesity has nearly tripled since 1975- WHO, 2020.
 Tobacco kills more than 8 million people each year- WHO, 2020.

Dr. S. S Samant, Director, Himalayan Forest, Research Institute, Conifer Campus, Shimla, Himachal Pradesh

Faculty Development Program
"Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals"
 (Under GURU-DAKSHTA Faculty Induction Programme)
 01st – 05th JUNE 2021

Dr. S. S Samant,
 Director, Himalayan FRI,
 Conifer Campus, Shimla, H. P

- Dr. S. S. Samant is Director, Himalayan Forest Research Institute, Panthaghathi, Shimla, one of the ICFRE Institutes since July 08, 2019.
- His areas of work are Plant Taxonomy, Biodiversity Conservation and Management, Medicinal Plants Conservation, Forestry Reseach, and has > 35 years Research Experience.
- He joined G. B. Pant Institute of Himalayan Environment and Development, Kosi – Katarmal, Almora on **JANUARY 11, 1991**, worked under Conservation of Biological Diversity Theme till December 05, 2003
- He joined as Scientist "E" in Himachal Unit of the Institute on December 08, 2003, worked as Scientist In – charge, Himachal Regional Centre from October 10, 2005 to December 05, 2019, and Theme Head, Biodiversity Conservation and Management of GB Pant Institute of Himalayan Environment & Development from December 26, 2007, to 30.06.2015.
- There are several laurels and glories to his career.

He is the Guest of Honor. He thanked and expressed his gratitude to Hon'ble Vice Chancellor and team of FDP. He gave a brief introduction of the Indian Council of Forestry Research Education (ICFRE). It was established in way back in 1986 under Ministry of Environment and Forest then in 1991 it was established as an autonomous body apex body in the forestry sector and Ministry of Environment and Forest and now it is under Ministry of Environment Forest and Climate Change. The Council works through nine research institutes all across the country and

with five advanced research centers out of these nine uh research institutes and Marine Forest Research Institute is one of them. The broad mandate of the council as well as the institute is the research that includes the managing forest and the forest products for livelihood support and the economic growth.

He also explained about the major threat areas, research division, Himalayan ecosystem, Indian Himalayan region, Ecosystem services. He also discussed that how we can afforest the area and by educating the local people we can achieve sustainability in the coming time. He shared lots of his research and experiments in the Himalayan area to ensure the population of threatened and rare species. He gave detailed facts of the biodiversity that are found in Himalayan region. He emphasized on engaging the communities and r-tribal people in Himalayas in the conservation strategies to ensure ecosystem restoration.

Five Days On – Line Faculty Development Programme
 On
Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals
 Under GURU – DAKSHTA Faculty Induction Programme (Module 09: Environmental Consciousness and Sustainable Development Goals)
 Date – 1st – 5th June 2021

Organizer: Amity Staff College
Theme - Ecosystem Restoration

Dr. S. S. Samant, DSc, FNAsc, FSE
 M - + 91 9816316318
 E-mail: samants2@rediffmail.com; dir_hfri@icfre.org

Director, Himalayan Forest Research Institute
 Panthaghathi – 171 013, Shimla, Himachal Pradesh, India

Utilization Pattern

1. Medicinal plants for traditional medicine
 2. Medicinal plants for modern medicine
 3. Area of Biodiversity richness
 4. Area of Biodiversity richness
 5. Area of Biodiversity richness
 6. Area of Biodiversity richness

Ecosystem Services - Preparation of Beverages

Fagopyrum esculentum *Prunus mira* *Vitis vinifera*



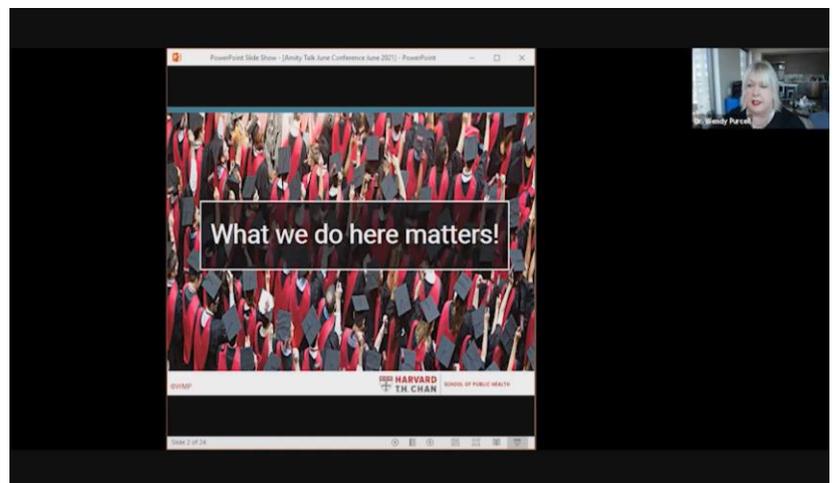
Dr. Wendy M. Purcell PhD FRSA, Professor Emerita & Former President VC, Plymouth Univ. UK; Research Scholar, Harvard University



She is the Guest of Honor. She spoke about 'Accelerating delivery of the SDGs: what Higher Education Institutes can do'. She said just too kind of understand how critical universities, colleges of higher education are to thinking about the world in terms of the future. so when we look and we'll look a little bit at the SDGs we're looking at a world where no one is left behind whether it is this wonderful balance between people, prosperity and planet. What we do here matters? Our

responsibilities for future generations, our responsibilities for the knowledge economy, we must take up our responsibilities as universities to deliver against this agenda.

She talked about existential threats like climate change, VUCA world, SDG as a university mission, SDG Goggles, SDG connected Universities, research, innovation and scholarship, technological revolution that's going on as well as all the kind of geopolitical changes, the sense of inequities in society and talked about some really fundamental changes around trust, how trust in politicians, in organizations, in organized religion is being lost. Some huge opportunities to lean into sustainability as a global mega trend. Education has a huge role to play in lifting people out of poverty and lifting people into long-term happy.

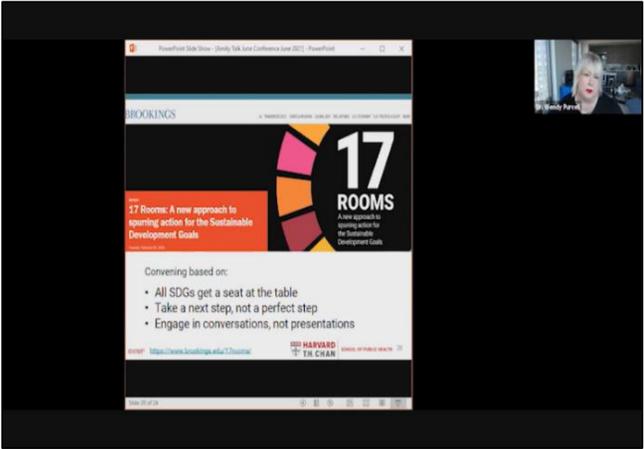




Dr Wendy discussed in detail the various megatrends that is important to address for having a sustainability in the higher education system. She elaborated on the technological change, climate change, political and individual change, uneven growth and inequality, global migration and globalization happening across the globe. She has talked about that how the population is changing? how the people are losing truth and transparency in their behaviours that are resulting into the distrust and environmental degradation?

She discussed about the inter and intra generational availability of resources and she emphasize that how by building trust among the communities we can bring a sustainable change to the world.

She discussed the methodology of 17 rooms to achieve 17 goals of sustainability. She emphasized on the role of education sector to bring the change and inculcate the sustainability in the youth of the country.



She believes the HE institutions plays a vital role in meeting sustainable goal and its time to come up with strategic academic missions for the same.



At the end of session, the customary duty of presenting a vote of thanks was done by Dr. Manju Ranjan Rawat (Joint Coordinator, AIES). On behalf of everyone and the entire organizing team she thanked Honorable Founder President sir, Honorable Chancellor, Honorable Vice-chancellor, mentor, the Administration of Amity University, esteemed delegates, the scientific community, colleagues, participants and research scholars for their support and being an integral part of our journey and this event. She thanked the Admin, IT team, AUUP for their support throughout these five days FDP and helping since the beginning.



The opportunities that are generated from this FDP will be worked upon and materialise in the future. The following opportunities can be avail:

- ❖ MOUs with the institutions of the speakers.
- ❖ Students of B.Sc. & M.Sc. EVS can be send for Dissertation.
- ❖ Speakers can be utilized as PhD External Guides.
- ❖ Speakers can be utilized as Industry/ area experts in BOS & AAB.
- ❖ Generate the opportunity for the placement of our students.
- ❖ Collaborative R&D projects.
- ❖ Can be use as resources person for the future events & vice versa.
- ❖ Training programs and
- ❖ Consultancy

All the panellists and participants have expressed their thanks and congrats the team of Amity Institute of Environmental Sciences, Amity School of Natural Resources and Sustainable Development and Amity University Uttar Pradesh for organising such a wonderful and extremely beneficial Five Days On-Line Faculty Development Programme on “Advances in Teaching and Research in the Field of Green Technology and UN Sustainable Development Goals”, (Under GURU-DAKSHTA Faculty Induction Programme (Module 9: Environmental Consciousness and Sustainable Development Goals). All the eminent speakers and guest of honour have expressed their gratitude for giving them an opportunity and a platform to share their knowledge, experience and ideas to the academicians, people from corporate and research scholars. The response of the participants was overwhelming and encourages the organising team to come up with many more such type of events soon. With more than 500 people attending the faculty development program for five days itself speaks about the success of the faculty development program.