SDG-12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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Responsible Consumption and Production" is the 12th goal among the Sustainable Development Goals (SDGs) established by the United Nations. SDG 12 aims to ensure sustainable consumption and production patterns. It addresses the need to do more with less and promotes the efficient use of resources while minimizing adverse environmental impacts throughout the life cycle of goods and services.

SDG 12 calls for a shift towards more sustainable consumption and production patterns, which is crucial for reducing the environmental impact of human activities. It involves promoting resource efficiency, reducing waste, encouraging sustainable practices in industries, and fostering awareness among consumers. Achieving these targets requires collaboration between governments, businesses, and consumers to make choices that minimize environmental harm and contribute to a more sustainable future.

COMSATS University, involves a combination of awareness campaigns, educational initiatives, and practical measures. Here are some potential activities that the university undertook to promote responsible consumption and production:

Awareness Campaigns:

CUI organized workshops, seminars, and awareness campaigns to educate students, faculty, and staff about the principles of responsible consumption and production.

By using various communication channels, including social media, posters, and newsletters, CUI shared information on sustainable practices, waste reduction, and resource efficiency.

Curriculum Integration:

Sustainability and responsible consumption topics are integrated into the university curriculum, across various disciplines, to ensure that students are exposed to these concepts in their academic studies.

Waste Management Initiatives:

COMSATS University Implements and promotes effective waste separation and recycling programs on campus. CUI encourages the reduction of single-use plastics and provide alternatives such as reusable water bottles and containers at all campuses. The CUI has set up for recycling bins across the campus and the service section raises awareness about the importance of waste reduction and proper disposal. COMSATS University Islamabad actively discourages the use of plastic within its premises. The university promotes environmentally friendly practices and encourages the reduction of plastic waste. The Cafeteria at COMSATS University Islamabad follows a sustainable approach by serving food in washable crockery. The use of disposable plates and glasses is not permitted, promoting environmental consciousness and reducing waste.

COMSATS University Islamabad has entered into an agreement with a private partner to manage waste collection and disposal, ensuring the cleanliness of the university. As part of this initiative, separate dust bins have been installed on campus for plastic, garbage, and glass waste, promoting proper waste segregation and management.

Proportion of recycled waste at CUI during 2022

Amount of waste generated	**297mt**
Amount of waste recycled	**102mt**
Amount of waste sent to landfill	**230mt**

Green Campus Initiatives:

COMSATS University Implements energy-efficient practices, such as using renewable energy sources , and promoting energy conservation. The CUI management developed and maintained green spaces on each campus to enhance biodiversity and create a sustainable environment.

Partnerships and Collaborations:

CUI Collaborates with local businesses and organizations that follow sustainable practices to create partnerships that support responsible consumption and production. The University engages with industry experts through seminars or guest lectures to provide insights into sustainable business practices Career Fairs, where the potential employers meet with the students, provide best opportunity for both stakeholders to find the best for themselves, almost every year, a vibrant Career Fair is held at CUI campuses where students meet with the employers of their dream jobs and employers found the best human resource for their organizations thus creating a win-win relationship resulting into a prosperous, healthier communities.

Student Involvement:

CUI has established student-led sustainability clubs or societies to drive initiatives related to responsible consumption and production. These societies organize competitions or events that challenge students to come up with innovative ideas for sustainable solutions.

Monitoring and Reporting:

CUI has established a system to monitor and report on the university's progress towards responsible consumption and production goals. The university campus websites share regular updates and progress reports with the university community to maintain transparency and accountability.

Green Procurement Policies:

COMSATS University has adopted and Implement green procurement policies of the Govt. of Pakistan to ensure that the products and services purchased by the university are environmentally friendly and adhere to responsible production standards. The Services Section of COMSATS University Islamabad ensures that the aforementioned policies regarding sustainable commuting, accessibility, and inclusivity extend to outsourced services and the university's supply chain. This commitment ensures that all services provided by external vendors and suppliers align with the university's standards and values. CUI follows a practice of signing annual contracts for the supply of stationary and equipment. This allows for efficient procurement and ensures a steady and reliable supply of necessary items throughout the year.

COMSATS University Islamabad has adopted the National Hazardous Waste Management Policy to effectively dispose of hazardous materials. The university has developed a policy in accordance with this national framework, which is currently in the process of being approved by the relevant authorities. This policy ensures the safe and proper management of hazardous waste within the university premises.

Research and Innovation:

CUI fully supports research projects and initiatives focused on sustainable technologies, circular economy practices, and innovative solutions for responsible consumption and production.

Community Engagement:

CUI extends awareness and educational activities to the local community to promote responsible consumption and production beyond the campus boundaries.

As an outreach activity, COMSATS Abbottabad often exercises the community services and student engagements with other stakeholders of environment for their comprehension and better grasp of the prevailing environmental concerns. In this regard, the Industry-academia Liaison Committee of COMSATS Abbottabad - including Dr. Muhammad Bilal (Convener), Dr Rashid Nazir (Secretary), Dr Nadia Riaz, Dr Shamayla Nawazish, Dr. Iftikhar Zeb, Dr Ahsan Jabbar - lead a delegate of BS, MS and PhD students' study tour to the newly constructed “Material Recovery Facility (MRF)” and COMPOST plant at Solid Waste

Dumping site located near Salhad, Abbottabad.

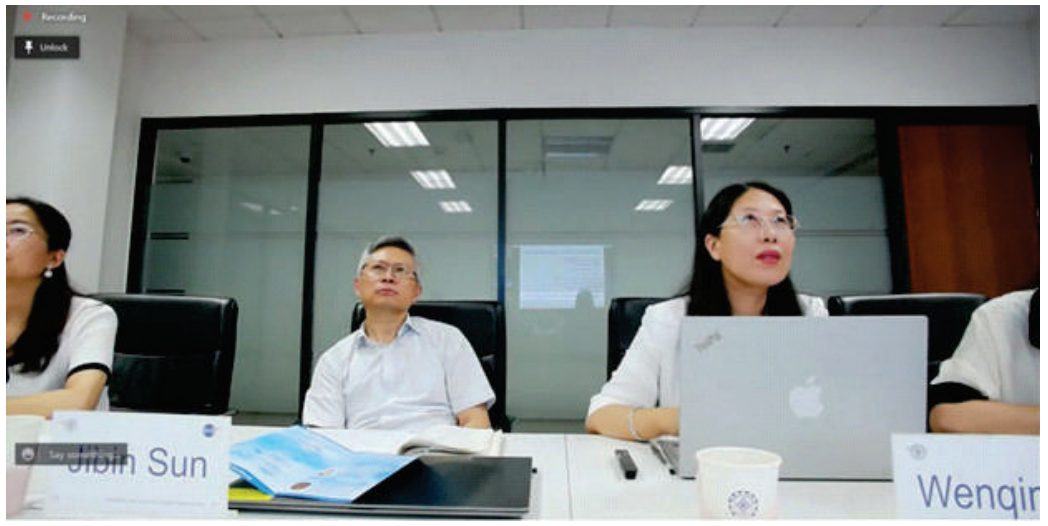
These facilities were constructed by WSSCA-Abbottabad and OXFAM Pakistan through financial aid of Asian Developmental Bank. The students and faculty were briefed about the integrated solid waste management facility by Deputy Manager WSSCA Mr. Javed Abbasi, with an open discussion about the way forward for leachates treatment. Moreover COMSATS faculty and students witnessed the signing ceremony of MoU between WSSC Abbottabad and Oxfam Pakistan.

At the end, Engineer Rehan Yousaf (CEO WSSCA) and Chairman WSSCA thanked the faculty and students for the visit and committed to work together for the betterment of environment and community services of Abbottabad.

International Conference on 'Evolving Global Order: Challenges and Opportunities Centre for Aerospace and Security Studies (CASS) has organized two days International Conference on 'Evolving Global Order: Challenges and Opportunities

The conference was inaugurated by President Dr. Arif Alvi. In his inaugural speech President highlighted the importance of ensuring provision of health and Education facilities and food for all should be the goal of the new world order. Chief of Air Staff ACM Zaheer Ahmad Babar Sidhu was also present at the inaugural session, and detailed the summary of aerospace and artificial intelligence activities at newly high tech parks being established by Pakistan Air Force. On the invitation of CASS, Prof. Dr. Athar Hussain attended the meeting and represented CUI/CCRD.

COMSATS in collaboration with its Centre of Excellence in China – the Tianjin Institute of Industrial Biotechnology (TIB), organized a workshop titled 'Green Bio manufacturing of Bio-based Materials' from the platform of COMSATS Joint Centre for Industrial Biotechnology (CCIB). Held under the umbrella of CCIB's Joint R&D Group on Bio-materials on 31st August 2022, the workshop was aimed at promoting dialogue among scientists and researchers to explore potential cooperation opportunities in research on bio-based materials. Over 50 scientists, researchers and academics, including those from China, Egypt, Iran, Kazakhstan, Pakistan, and Sri Lanka attended the Workshop both physically and virtually.



In his opening remarks, Dr. Ghulam Muhammad Memon, Executive Director COMSATS (Federal Secretary, Ministry of Science and Technology, Government of Pakistan), highlighted the importance of bio-based materials in different sectors of the economy, particularly in the field of biomedicine.

Technical proceedings of the Workshop comprised of a keynote talk on 'Halomonas spp. as Super Microbial Cell Factories and Next Generation Industrial Biotechnology' delivered by Prof. George CHEN Guo-Qiang, Professor at the Center of Synthetic and Systems Biology of Tsinghua University, China, and following

lectures/talks:

- Living Materials Programmed by Life by Prof. ZHONG Chao, Shenzhen Institute of Advanced Technology (SIAT), Chinese Academy of Sciences (CAS), China;
- Biosynthesis of Polyhydroxyalkanoates (PHA) and its Applications as Drug Carrier and Food Packaging Material by Dr. Farha Masood, Associate Professor at the Department of Biosciences, COMSATS University Islamabad (CUI), Pakistan;
- Monomaterials—Biosynthesis of Succinic Acid by Dr. ZHU Xinna, Associate Professor, TIB, China; and
- Biosynthesis of Organic Acids and Amines as Monomers for Polymer Materials by Dr. WANG Dan, Associate Professor at the School of Chemistry and Chemical Engineering, Chongqing University, China.

Entrepreneurship and innovation are viewed as key contributors to global economic and social development of a country. University-based entrepreneurship ecosystems provide a supportive context in which entrepreneurship and innovation can thrive.

At CUI, Student Startup Business Centre (SSBC) has been established with the support of Higher Education Commission of Pakistan, and the Promotion of Education in Pakistan Foundation, Inc. (USA). The goal of the program is promotion of talented students' entrepreneurship and enhancing their practical learning experience at the Institute. The overarching objective of the Centre is to promote student startup businesses by offering necessary support both in the form of mentoring and initial financial resources through its Startup Entrepreneurship Fund. The SSBC will provide a continuous stream of student led businesses and innovations at CUI.

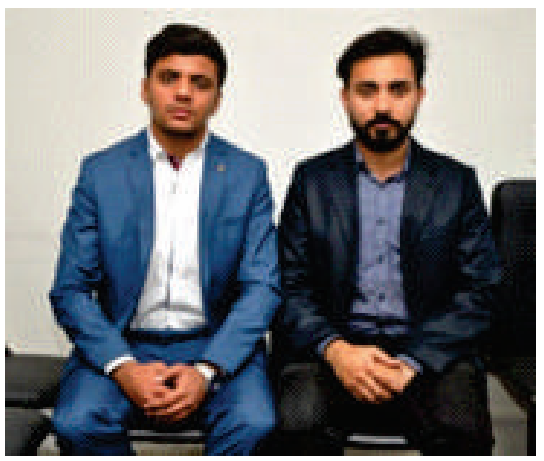
During 2022 following project of CUI Lahore student was selected to make a product from Industry waste.

Prasino Fertilizer Company

Imagine if you could make a product (Fertilizer) from waste of an industry , rather than draining or discarding it into atmosphere and disturbing the natural balance. Just Imagine if that product is 40-50% cheaper alternative than conventional fertilizers used in our country moreover research proves that it shows 10% increase in yield.

The idea is to make a Biofertilizer form waste of an industry (will be discussed later) and to launch it into market as a proper trademark that can be used as a cheaper and more organic a, eco-friendly substitute to conventional fertilizers used today e.g DAP (Diammonium Phosphate) etc. Proper practical use , research data and foreign market study suggests that this particular fertilizer has a potential to be far more better product than those which are already being used. Great environmental concerns , rising prices of DAP and other fertilizers are the one of the major factors that suggests the potential of this product as a successful launch in market. Pakistan's Industrial and its agricultural sector needs innovation like Bio-fertilizers.

The production of this Bio-Fertilizer follows a rather simple approach , it involves the purchasing (cheap as mud) of waste from concerned industries (total of 90+ all over Pakistan) and blending them with chemicals to achieve desired product properties. The significance of this process is that a compact space and very little or no machinery is required (mixers , pumps , sprayers), and product can be obtained in very little time. So minimum capital cost is required. I am targeting agricultural sector which contributes to 21% GDP as well as industrial sector by meeting their waste management problem, by offering them a better waste management and more green eco-friendly approach in using their waste as valuable



product and by implementing and practicing recycling and environmental friendliness at an industrial scale. Moreover the key agenda to select the manual process rather than mechanical was to provide more labour opportunities to skilled persons.

COMSATS University Islamabad, Lahore Campus in collaboration with Sustainable Development Policy Institute (SDPI), organized a policy dialogue on improving the effectiveness of plastic bag bans in Pakistan .

The session commenced with a warm welcome from the Director of COMSATS University, Professor Asad Hussain, followed by a technical presentation by Dr. Muhammad Khan, an Associate Professor at COMSATS University Islamabad. Subsequently, Ms. Romina Khursheed, an MNA (Member of the National Assembly and special Assistant to Prime Minister on SDGs), delivered a keynote address. Special remarks were then offered by Ms. Farzana Altaf, the Director-General of Pakistan EPA. The discussion was skillfully moderated, and representatives from various development partners shared their valuable insights on the effectiveness of plastic bag bans in Pakistan. Finally, the session concluded with closing remarks from Dr. Abid Qaiyum Suleri, the Executive Director of SDPI. The presented insights shed light on the existing policy landscape, where implementation faces challenges due to the absence of sufficient individual efforts. While recycling remains important, the emphasis lies on implementing penalties and punishments as effective measures to reduce plastic waste. The major obstacle in managing plastics, particularly single-use plastic bags, is the lack of coordination among provinces. Efforts are being made to enhance this coordination. Currently, the regulation on banning single-use plastic bags has been developed solely for Islamabad and remains unimplemented or underdeveloped in other provinces. In addition to this, it was also mentioned that Pakistan lacks the necessary infrastructure for recycling, and there is a pressing need to raise awareness about reducing plastic waste. Addressing these areas will be crucial in advancing the country's efforts towards effective plastic waste management.

International Conference on “Recent Trends in Environmental Sustainability”

International Conference on “Recent Trends in Environmental Sustainability” was held from February 21-23, 2022 at CUI Vehari campus

ESCON 2022 Department of Environmental Sciences, COMSATS University Islamabad (CUI), Vehari Campus organized an International Conference on “Recent Trends in Environmental Sustainability” during February 21-23, 2022. Honorable Rector CUI, Prof. Dr. Muhammad T. Afzal, Director CUI, Vehari Campus Prof. Dr. Saleem Farooq Shokuat and many renounced international and national speakers participated physically and virtually in the conference. More than 230 abstracts were received for this conference from within the country and abroad. Environmental Sciences and Pollution Research (Impact Factor 4.22) journal agreed to publish a Special Issue based on set of leading papers selected from ESCON 2022. Prof. Dr. Mentore Vaccari, University of Brescia, Italy delivered a keynote speech. ESCON participants also visited Noor Mahal Bahawalpur and Sardar Masood Jhander Library Mailsi.

Honorable chief Guest of ESCON 2022 Prof. Dr. Rubina Farooq (T.I.) Vice Chancellor Government College for Women University addressed the conference. She also inaugurated Gas Chromatography Mass Spectrometry Lab at Department of Environmental Sciences. Prof. Robina Farooq (T.I.) vice chancellor Govt. College Women University was the Honorable chief guest. She stressed the need to learn from and move towards nature i.e. durable construction material, body implants like heart stunts etc.