

Solutions To Energy & Environmental Problems (STEEP)



GROUP INTRODUCTION

The Sustainable Development Goals (SDGs) set in 2015 by the United Nations General Assembly, are intended to be achieved by 2030. Pakistan too is a signatory of these SDGs that have made the world multidisciplinary in all its facets. The research group entitled Solutions to Energy Environmental Problems (STEEP) aims to address these facets via applied research towards providing sustainable solutions to global energy and environmental issues. The scope of STEEP includes areas such as Energy Distribution, Energy and Environmental Conservation and Nexus Problems pertaining to forecasting towards the mitigation of Climate change and Food, Financial and Poverty crisis. STEEP is a multidisciplinary group that combines multiple faculties at CUST to bring together the best of futuristic and sustainable solutions. The over-arching aim is to solve society's most urgent and pressing concerns. The group has published numerous research articles in the mentioned domains.

GROUP HEAD

Dr. Saira Ahmed

Dr. Saira Ahmed is currently the team lead for PEP International (Partnerships for Economic Prosperity) and is engaged with the COVID-19 response project for International Development Research Centre (IDRC), Canada. She is also the lead coordinator for Pakistan-Italy Network (PIN). One of the latest projects under PIN involves academic collaboration with Luiss Business School, Rome, Italy and Pakistan Poverty Alleviation Fund (PPAF). Dr. Ahmed has been involved in significant research liaison with Monash University, Australia and the Global Trade Center of Purdue University, USA, both of which have resulted in numerous funded research projects and training. At the Capital University of Science Technology, she is the Director of



the Directorate of Sustainability and Environment. She is also supervising research and teaches courses in Microeconomics, Macroeconomics, International Business and Environmental Impact Assessment.

RESEARCH AREAS

- Climate Finance
- Climate Risk Adaptation and Mitigation
- Assessing Environments for Sustainable Cities
- Environmental Impacts of Energy Technologies
- Global Atmospheric Chemistry and Climate Change
- Water-Energy-Food Nexus
- Sustainable Energy Systems and Networks
- Water and Power Distribution and Allocation
- Globally applicable Principles of Energy Policy and Techno-economics

GROUP MEMBERS

- 1. Prof. Aamer Iqbal Bhatti
- 2. Dr. Ishtiaq Hassan
- 3. Prof. Majid Ali
- 4. Dr. S. Shujaa Safdar
- 5. Dr. Arshia Amin Butt
- 6. Mr. M. Waleed Farooq
- 7. Ms. Shummaila Rasheed

CURRENT MS/PhD STUDENTS

PhD STUDENTS

- 1. Mr. Abrar Hashmi (EE)
- 2. Mr. Shahmir Janjua (CE)
- 3. Mr. Muhammad Hassan (CE)
- 4. Mr. Arsam Awan (CE)
- 5. Mr. Waqas Zafar (CE)

MS STUDENTS

- 1. Mr. Samar Yamin (CE)
- 2. Mr. Khurshid Wisal (CE)
- 3. Mr. Tariq Khan (CE)
- 4. Ms. Azza Malik (MS)

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SELECTED EVENTS

- Seminar on Youth Development Program by WWF (World Wide Fund on Nature)
- Seminar on The United Nations Humanitarian vs. Development System
- Special Talk of Director DSE, CUST on National News Network
- Awareness Session of Director(DSE), UCP about COVID-19 at Voice FM 97.6
- Celebration of Sustainability Week at CUST every semester
- Collaboration with LUISS Business School Italy for 'Promotion of Sustainable tourism in northern Pakistan'.
- Collaboration with LUISS Business School Italy for 'Chemical and Biological Analysis of Water in Southern Pakistan'.

SELECTED PUBLICATIONS

Journal Publications

- S. Waqar, S. Ahmed, and I. Badshah, "Chinese FDI for Infrastructure Development in Africa–Assessing the impact of cooperation," Studies of Applied Economics, vol. 39, no. 2, 2021.
- A. Hashmi, S. Ahmed, and I. Hassan, "Optimizing Pakistan's water economy using hydro-economic modeling," Journal of Business & Economics, vol. 11, no. 2, pp. 111-124, 2020.
- E. Aamir and I. Hassan, "The impact of climate indices on precipitation variability in Baluchistan, Pakistan," Tellus A: Dynamic Meteorology and Oceanography, vol. 72, no. 1, pp. 1-46, 2020.
- S. Janjua, I. Hassan, and S. Islam, "Role and relevance of three enabling conditions to resolve inter-provincial water conflicts in the Indus basin within Pakistan," Water Policy, vol. 22, no. 5, pp. 811-824, 2020
- S. Janjua and I. Hassan, "Transboundary water allocation in critical scarcity conditions: a stochastic Bankruptcy approach," Journal of Water Supply: Research and Technology-AQUA, vol. 69, no. 3, pp. 224-237, 2020.
- S. Janjua, I. Hassan, M. Zarghami, and S. Islam, "Addressing the supply-demand gap in shared rivers using water diplomacy framework: utility of game theory in the Indus river within Pakistan," Water Policy, vol. 22, no. 5, pp. 789-810, 2020.
- S. Ahmed and M. Ali, "Use of agriculture waste as short discrete fibers and glass-fiber- reinforced-polymer rebars in concrete walls for enhancing impact resistance," Journal of Cleaner Production, vol. 268, p. 122211, 2020.
- S. Janjua and I. Hassan, "Use of bankruptcy methods for resolving inter-provincial water conflicts over trans-boundary river: Case study of Indus River in Pakistan," River Research and Applications, 2020.
- S. Ahmed, S. Bashir, and H. Abbas, "Making CPEC inclusive for informal workers", Journal of Business Strategies, 2020.
- A. H. Hashmi, S. Ahmed and A. I. Bhatti, "Impact of climate change on seasonal Flow of Rivers in Indus Basin and Hydro-Power Management: A Hybrid Approach (In-Progress)," 2021.

Conference Publications

- A. Hashmi, S. Ahmed, and A. I. Bhatti, "Using IBMR for provincial water distribution," in International Sustainable Development Conference, 2018.
- A. Hashmi, M. Farhan and A. I. Bhatti, "Simulation and analysis of duffing oscillator using sliding mode control," in International Conference on Communication, Computing and Digital Systems (C-CODE), pp. 326-330, 2017.