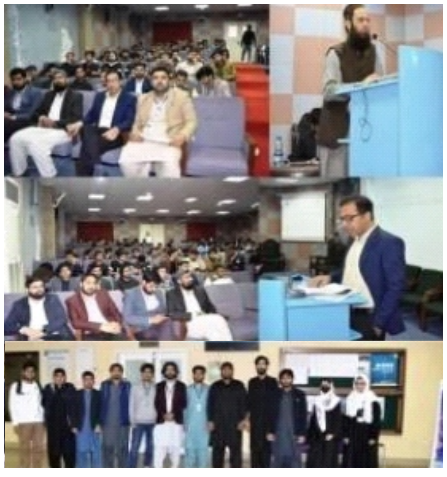
SDG-6

CLEAN WATER AND SANITATION

Goal 6 is indeed vital for ensuring the health and well-being of people and the planet. Access to safe drinking water and adequate sanitation is fundamental to achieving a range of other Sustainable Development Goals (SDGs), including those related to health, education, and gender equality.

Achieving Goal 6 requires a concerted global effort to invest in infrastructure, innovate in water management practices, and ensure equitable access to these critical resources for all.

The UNESCO Chair on Knowledge Systems for (IWRM) at CUI Wah Campus organized a one-day Workshop on the Hydrological Modelling Application of SWAT on February 28, 2023 in collaboration with the Department of Civil Engineering. The resource person, member IWRM / Lecturer, Engr. Summera Fahmi from the Department of Civil Engineering shared her knowledge and expertise on Hydrological modelling techniques to identify the watersheds, Soil, and Water Assessment Model (SWAT) of the Gilgat, Pakistan to study, water quality, sediment and effects of climate change. The researchers from the CUI Abbottabad, PCRWR and Workshop on Hydrological Modelling Application of SWAT Clean Water and Sanitation Ensure Availability and Sustainable Management of Water and Sanitation for graduate/ undergraduate students from CUI attended the workshop. The UNESCO Chair on Knowledge Systems for Integrated Water Resources Management (IWRM), Prof. Dr. Muhammad Abid, T.I., in his closing remarks emphasized on the capacity building in the adaptation of improving technologies in research and development.



Celebrations of World Water Day - 2023

In recognition of World Water Day an annual United Nations (UN) observation day held on every March 22 arranged a seminar on “Accelerating Change for Water Security in a Changing Climate: Innovative Solutions for Improved Resilience" on March 16, 2023. The aim of the seminar is to build the attention of society on the importance of water security and sustainable management of freshwater resources, and the effects of climate change on our livelihood. This year, the theme of the World Water Day is “Accelerating Change”. The speaker Dr Amjad Masood, Senior Scientist, an expert in Hydrology and Climate Change at Basin Scale in Water Resources and Glaciology Section of Global Change Impact Studies Centre (GCISC), Islamabad, Pakistan. He highlighted the issues faced by Pakistan due to climate change. The Chief Guest of the seminar was the Vice Chancellor of the University of Wah, Prof. Dr. Jameel Un Nabi. In his remarks he appreciated the importance of water as a natural resource, and it uses in our daily lives. He encouraged the youth to take an initiative to save water and avoid its wastage in daily usage for the betterment of the community. The closing remarks presented by the UNESCO Chair on Knowledge Systems for IWRM/ Director Campus. He discussed the future need of wastewater recycling that freshwater makes up only 2% of the total water on Earth, which humans use every day.

One Day Hands on Workshop

This hands-on workshop held on November 23, 2023, designed to empower the participants with practical skills by creating their familiarity with the RStudio, operations, functions, and manipulation of plots data, combining verbs using pipes and data visualization. The resource person, member UNESCO Chair on Knowledge Systems for IWRM, Engr. Summera Fahmi Khan shared her knowledge and expertise with the participants. She deliberates by analysing and predicting weather patterns affecting climate change, unravelling intricate patterns and trends within complex environmental datasets considering Pakistan's environment.

Waterwise Summit: Unveiling Solutions through Youth Voices

The UNESCO Chair on Knowledge Systems for Integrated Water Resources Management (IWRM), CUI Wah Campus with the theme to —Respect Water - Respect Life , organized the —Waterwise Summit: Unveiling Solutions through Youth Voices , on November 29, 2023. The event addresses and spreads awareness on water is life, saving water, climate change, flooding and disaster causes affecting humanities. The students demonstrated through artwork (Posters and Documentaries) and engaged the community to express their vision in debates. The contestants' speeches are very fruitful and helpful in conveying their ideas in favor of saving water, avoiding wastage, disasters faced and its long-term impacts on human life. Waterwise Summit: Unveiling Solutions through Youth Voices Clean Water and Sanitation the Chief Guest of the event was Ms. Kiran Anwar, Senior Research Officer from Pakistan Council of Research in Water Resources (PCRWR). In her remarks she appreciated the efforts of the students for sharing their visions for a water secure future.

Seminar on Impact of Climate Change on Glacier Melting & Glacial Lake Outburst Floods (GLOFs) – Implications for Mountain Agriculture and Water Security

The seminar was arranged on September 28, 2023 under the platform of UNESCO Water Chair on Knowledge Systems for Integrated Water Resources Management (IWRM) in collaboration with the Department of Civil Engineering. The speaker, Tenured Professor, Dr. Adnan Ahmad Tahir from the Department of Environmental Sciences, CUI, Abbottabad Campus, specialized in the hydrological and hydrodynamic modeling with a special focus on climate change, land use land cover, snow and glacier dynamics, and hydrological regime using in-situ and emote sensing data. The speaker significantly delivered his research on the climate change impacts on glacier melting, discussing the outburst lakes pattern at Hunza and Karakorum, greenhouse gases causing rapid increase in Hispar, Shispar, and Siachen glacier melting and its implication on mountain agriculture. Rising temperatures disrupt snow melting patterns and the entire water flow cycle damages human lives and briefed measures taken for water security.

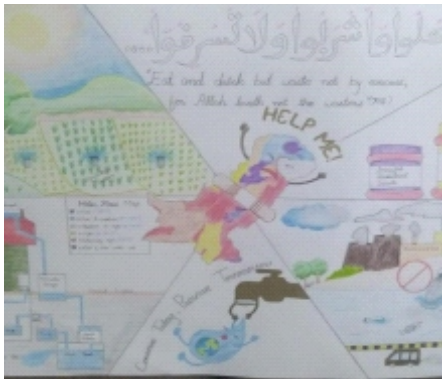
Pakistan Water Week 2023 - themed “Transformative Pathways for Water and Food System in a Climate Resilient Pakistan”

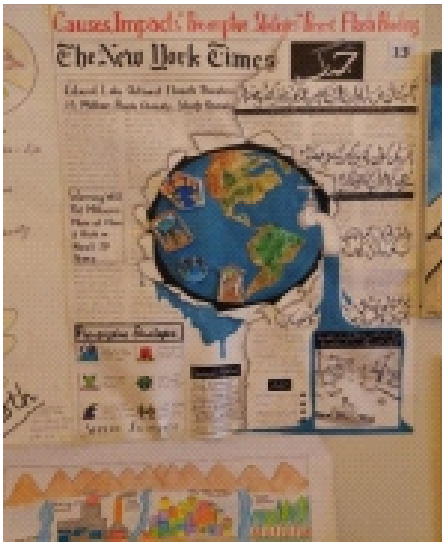
Team members from UNESCO Chair on Knowledge Systems for IWRM and from the Department of Civil Engineering Engr. Sarmad Manzoor and Engr Waleed Tariq, nominated to attend the Pakistan Water Week 2023 jointly organized by the PCRWR and IWMI Pakistan, with a focused on two key events, a three-day International Conference from December 4- 6 2023.

Followed by a two-day National Workshop from December 7-8, 2023 based on the theme —Transformative Pathways for Water and Food System in a Climate Resilient Pakistan. Pakistan being highly vulnerable to climate change requires sustainable development, strategic decision making for best utilization of its natural resources. The conference fostered discussions on three thematic areas, including: a. Transformation for sustainable and climate resilient solutions b. Politics, policy, and institutions- good governance and strengthening capacities c. Technologies and innovations- responding to the climate change.

National Exhibition December 7 - 8, 2023

The students of CUI under the platform of UNESCO Chair on Knowledge Systems for Integrated Water Resources Management (IWRM), CUI participated in the National Workshop organized by the Pakistan Council of Research in Water Resources (PCRWR) in the activities during Pakistan Water Week - 2023 with the focus on the future of Transformative Approaches. A total of fifteen students participated in the Poster Competition and seven Short Documentaries were presented by CUI students. Pakistan Water Week 2023 - themed “Transformative Pathways for Water and Food System in a Climate Resilient Pakistan” Team members from UNESCO Chair on Knowledge Systems for IWRM and from the Department of Civil Engineering Engr. Sarmad Manzoor and Engr Waleed Tariq, nominated to attend the Pakistan Water Week 2023 jointly organized by the PCRWR and IWMI Pakistan, with a focused on two key events, a three-day International Conference from December 4- 6 2023 followed by a two-day National Workshop from December 7-8, 2023 based on the theme —Transformative Pathways for Water and Food System in a Climate Resilient Pakistan . Pakistan being highly vulnerable to climate change requires sustainable development, strategic decision making for best utilization of its natural resources. The conference fostered discussions on three thematic areas, including: a. Transformation for sustainable and climate resilient solutions b. Politics, policy, and institutions- good governance and strengthening capacities c. Technologies and innovations- responding to the climate change Ms. Nasira Zahid from Department of Computer Science, CUI Wah Campus got Second Position in the Poster Competition among the 50 posters made by other universities and college students. The students highlight the importance of water and related emerging issues in a graphical form to create awareness among the audience.





PUBLICATIONS

Publications Title	Author	Publisher	Impact Factor	Weblink
Activated sodium percarbonate-ozone (SPC/O3) hybrid hydrodynamic cavitation system for advanced oxidation processes (AOPs) of 1,4-dioxane in water	Kirill Fedorov, Noor S. Shah	Chemical Engineering Journal (Elsevier)	15.1	https://www.sciencedirect.com/science/article/abs/pii/S1385894722065081
Comparative study of ZIF-8-materials for removal of hazardous compounds using physio-chemical remediation techniques	Bazla Sarwar, Asad Ullah Khan, Muhammad Aslam	Elsevier	8.3	https://www.sciencedirect.com/science/article/pii/S0013935122024951
Efficient removal of norfloxacin using nano zerovalent cerium composite biochar-catalyzed peroxydisulfate	Jibran Iqbal, Noor S. Shah	Journal of Cleaner Production	11.07	https://www.sciencedirect.com/science/article/pii/S0959652622039774
Macroalgal biochar synthesis and its implication on membrane fouling mitigation in fluidized bed membrane bioreactor for wastewater treatment	Muhammad Maaz, Muhammad Aslam, Muhammad Yasin	Elsevier	8.8	https://www.sciencedirect.com/science/article/pii/S0045653523004642?via%3Dihub
Mesoporous LaVO4/MCM-48 nanocomposite with visible-light-driven photocatalytic degradation of phenol in wastewater	Iqra Mahboob, Sumeer Shafique, Iqrash Shafiq	Elsevier	8.3	https://www.sciencedirect.com/science/article/pii/S0013935122023106
Novel approach to grow nanosized BiFeO3, CoFe2O4 and NiFe2O4 on Amberlyst-15 for efficient sorption of Cd2+ ions	Zubaah Khalid, Shahzad Hussain, Fozia Bibi	Elsevier	8.6	https://doi.org/10.1016/j.seppur.2023.124666
Photocatalytic degradation of industrial dye using hybrid filler impregnated poly-sulfone membrane and optimizing the catalytic performance using Box-Behnken design	Sadaf Ul Hassan, Sidra Shafique, Bushra Anees Palvasha	Elsevier	8.8	https://www.sciencedirect.com/science/article/pii/S004565352203911X
Porous Ag3VO4/KIT-6 composite: Synthesis, characterization and enhanced photocatalytic performance for degradation of Congo Red	Iqra Mahboob, Iqrash Shafiq, Sumeer Shafique	Elsevier	8.8	https://www.sciencedirect.com/science/article/pii/S0045653522036736
Remediation technologies for acid mine drainage: Recent trends and future perspectives	Umar Daraz, Yang Li, Iftikhar Ahmad	Elsevier	8.943	https://doi.org/10.1016/j.chemosphere.2022.137089
Theoretical investigation on the degradation of sulfadiazine in water environments: Oxidation of •OH, SO4•-and CO3•- and reactivity of (TiO2)n clusters(n=1–6) ,109994,(2023).	Mengmeng Xu, Suding Yan, Xiufan Liu, Simei Sun, Zia Ul Haq Khan, Wenzhong Wu, Jingyu Sun.	Elsevier	7.96	NULL

Total Publications 60, only high impact factor publications are highlighted here

In SDG 6 different projects were going on among them a project titled **"Drone Robotic Fish for Flowing Water Disease Detection and Analysis"** of **PKR 3.444 million** was caried out by the faculty member of CS department of CUI Islamabad Campus