



ECOSF NEWSLETTER



Call for Participation for STEM Teachers on Capacity Building Workshop for Science Teachers on Climate Change Education



Call for Participation for STEM Teachers



Capacity Building Workshop for Science Teachers on Climate Change Education

through Inquiry Based Science Education (IBSE) Pedagogy

Islamabad, March 28, 2022 - April 1, 2022

Pakistan is one of the most vulnerable countries to the impacts of climate change in the world. The country is expected to face severe extreme climate events, such as increased variability of monsoons, receding glacial caps, heat waves, floods and droughts. To address this mammoth challenge, there is an urgent need for the adaptive capacity of communities through adequate science education and enabling citizens to make informed decisions in the context of climate change.

Considering the urgent need for capacity building of science educators in Climate Change Education, ECO Science Foundation (ECOSF) in collaboration with Sukkur IBA University and UNESCO are planning to organize 5 days Training Workshop on Climate Change Education through Inquiry Based Science Education (IBSE) on March 28, 2022 - April 1, 2022, in Islamabad.

The training will employ the Inquiry Based Science Education (IBSE) pedagogy, which adopts an investigative approach to teaching and learning. It is well recognized that IBSE is an effective tool for catalyzing Science, Technology, Engineering & Mathematics (STEM) education.

This training is primarily intended for young science teachers, especially women and teachers from marginalized areas of the country. The prime purpose of this training is to produce a cadre of science teachers who can effectively deliver training programmes on climate change education for their peers using IBSE pedagogy.

For more details on registration, please visit our website at <http://ecosf.org/Call-for-Participation-for-STEM-Teachers> Interested and eligible candidates are highly encouraged to submit their application by March 15th, 2022.



1st Sindh Science Festival held at Karachi- Pakistan



The first-ever two-day Sindh Science Festival was held at the NED University of Engineering and Technology, Karachi- Pakistan on 10-11 February 2022. The Festival was organized by Thar Education Alliance (TEA), Sindh Education and Literacy Department in collaboration with ECOSF, NED University, JICA, Malala Fund and other national and international organizations.

The Festival was opened by Education Minister of Sindh H.E. Syed Sardar Ali Shah. The Minister lauded the efforts of TEA and other organizers for organizing such kind of event in Karachi which provided an opportunity to the students from across Sindh province to learn more about science from the experts in panel discussions as well as from other students and teachers. He further said that “we could not go ahead without imparting modern science education and inculcating the habit of the experimenting things around in our kids”. Mr. Shah urged the students to get more interested in such subjects. He shared that a policy is being devised to introduce the process of licensing system for the teachers of the province, who after receiving proper training on teaching methodology, can be issued license to teach.



Prof. Manzoor Hussain Soomro, President ECOSF also spoke during the opening ceremony. In his speech, Prof. Soomro said that the nations who have invested in STEM education are far ahead in the development, thus, the STEM education is the key to prosperity and development. He further said that for achieving quality STEM education, there is a need of a better methodology to teach. Inquiry Based Science Education (IBSE) is one of the best methodologies to teach STEM in the world. Through IBSE, critical thinking and better decision making are developed among the pupils which leads to developing fine scientists in the country; thus, he urged to implement IBSE at all schools of the country to better understand and learn STEM. He also shared that ECOSF is promoting IBSE in ECO region including Pakistan and he offered ECOSF’s all possible support for capacity building of more teachers of Sindh. President ECOSF also visited the stalls set-up by the school students from across Sindh. He highly praised the efforts and talent of the participating students.



Different panel discussions on specific topics were also arranged throughout the two days. The panellists of various sessions during the festival stressed upon the high-ups of the Sindh government as well as on other organizations to extend their full support to the organizations working on the promotion of STEM education in all government and private schools of the province. They observed that without giving importance and top priority to the education of science and other related subjects, formal educational degrees would not help students achieve their ambitious goals adding they asked other organizations to organize such events in backward regions to provide opportunities to students to showcase their talent through their models and innovative activities. The panellists also emphasized on the high-ups of the Sindh government to open the science labs in all big and small schools with the required equipment.



Mr Mosharraf Zaidi, the eminent writer, journalist and educationalist (formerly the CEO of Alif Ailan Education Campaign) during the panel discussion said that limiting the scope of education to mere few subjects was very detrimental to the mental growth of the students. Mr Zaidi observed that education could be used as the best tool to bring real change in society. He noted with concern that nations around the world had made great advancements and achieved various milestones in different fields; but the situation in Pakistan and many developing countries still remains grim. He said that quality education could make a real difference and steer the people out of the current dismal situation.

Ms Maleeha Khan, the Chief Programme Manager of Malala Fund during the panel discussion said that they were trying to improve the existing education system. She said that Malala Fund was putting special focus on the education of girls and hoped that girls from the backward areas would get space during events and to shine themselves.

Ms. Khan highly praised the organizers for the two-day event and said that models prepared and exhibited by both girls and boys were wonderful. "Such students should be given more space and opportunities to showcase their talent and interest in such subjects," she added.

Ms Huma Bukhari, co-chairperson of Newport Institute of Communication and Economics observed that it was the fundamental right of every student to get access to modern education adding she said that STEM education was key to in the current conditions. She highly lauded the efforts of the team of TEA and encouraged them to keep organizing such events.

Mr Yaqub Pechi, the Chairman of Thar Education Alliance said that they were trying to provide opportunities to the students of remote and backward areas to shine at the national and international levels; adding he said that all that could not be possible without teamwork.

Ms Chiho Ohashi, Chief Advisor of Japan International Cooperation Agency (JICA) Pakistan stressed upon the quality of education with special attention to science education. She said that only trained teachers could help impart the quality of education. She said that her organization had been at the forefront in supporting the organization in such healthy activities and that they would be happy to support in future as well.

Adil Darvesh, Roshan Bukhari, Mukesh Nand, Iqbal Sheikh, Prem Sagir, Jibran Jamshed, Junaid Dahar and others also spoke during different sessions moderated by the people from different institutes.

Mr. Partab Shivani, the CEO of TEA speaking during the concluding sessions thanked all those, who fully cooperated and participated in different sessions of the festival adding he said that sole aim of the event was to provide equal space and opportunities to students from across the province, who according to him, added colours by establishing their stalls with unique science models.

More than 45 schools from 22 districts of Sindh setup their stalls and about 8000 people/students visited the Festival. The students through their scientific models tried to find sustainable solutions to the challenges being faced by the people of Sindh and Pakistan. They displayed scientific models to address the issues such as water and environmental pollution, power generation from alternative sources, traffic and urban development issues, and the handling of humanitarian issues.

At the end, the medals and appreciation certificates were distributed among the participating students/schools.

Following are some glimpses of the Festival:



ECOSF participated in the Second Belt and Road Cross-Regional Workshop for Teachers' Professional Development on E-STEM

ECOSF participated in the Second Belt and Road Cross-Regional Virtual Workshop for Science Teachers' Professional Development on E-STEM on February 19, 2022. The workshop was organized by 'One Belt One Road environmental education centre' and supported by International Exchange Centre of the China Association for Science and Technology (CAST), Children and Youth Science and Center (CYSC) of CAST, Research Institute of Science Education of Beijing Normal University and China Education Innovation Institute of Beijing Normal University.



The workshop aimed to bring together environmental/science educators from different countries and regions to develop and practice a series of E-STEM PBL courses, develop a group of teachers who can effectively implement E-STEM PBL, and promote the widespread use of E-STEM PBL in primary and secondary school. In the workshop, Participants across the region will jointly prepare and teach lessons on environmental topics, and exchange ideas and receive expert guidance.

A large number of science teachers and practitioners from China, Pakistan, Vietnam, Malaysia, and Thailand participated in the workshop. Subject experts on environmental and science education presented their ongoing science programmes at their respective schools and highlighted critical aspects and practices in the form of E- Science, Engineering, Technology and Mathematics (STEM) with an emphasis on Project Based Learning (PBL) and IBSE pedagogy. Participants had the opportunity the opportunity to learn from participating schools and forged strategies to develop E-STEM PBL course and implement the course under the guidance of experts.

Experts underscored that the climate change, ecological pollution, resource scarcity and other environmental problems become increasingly serious. They further discussed as to how the environmental education could be used to improve the future citizen’s environmental literacy, by raising the environmental awareness, skills and behaviours. Environmental issues are usually complicated and ill-defined. Therefore, environmental education is also interdisciplinary and usually includes science (S), technology (T), engineering (E) and mathematics (M).

President ECOSF Prof. Dr. Manzoor Hussain Soomro participated as an invited expert of science education and lauded the efforts by Chinese partners on promoting quality education around emerging challenges on environment and climate change. Prof. Soomro also commented on various programmes on environment by participating schools as presented during the workshop. Prof. Soomro concluded that employing methodologies, such as PBL or IBSE is critical to equip future generations with skills and tools and effectively prepare them for future challenges.

Earlier during the workshop, Engr. Khalil Raza and Ms. Saba Chachar presented a brief snapshot on the Climate Change Education project which is being undertaken by the ECOSF and supported by InterAcademy Partnership on Science Education Program (IAP SEP). This project aims to build the capacity of science teachers to effectively deliver the climate science contents to secondary and primary level students in Pakistan.

President ECOSF Participated in Digital CAREC Virtual Policy Dialogue: Analysis of the Regional Digital Gap

On 23 February 2022, the CAREC Institute in collaboration with the Islamic Development Bank (IsDB) and the Asian Development Bank Institute (ADBI) held a roundtable to discuss findings of the recent research titled “Digital CAREC: Analysis of the Regional Digital Gap.”

Speakers at the event introduced country profiles and explained methodologies to estimate and analyze the digital divide. Initially, a questionnaire-based primary data was collected in six CAREC countries - Afghanistan, Azerbaijan, Kyrgyzstan, Pakistan, Tajikistan, Uzbekistan – which looked into four attributes of the digital divide: digital infrastructure, digital payments, e-commerce, and Internet access.

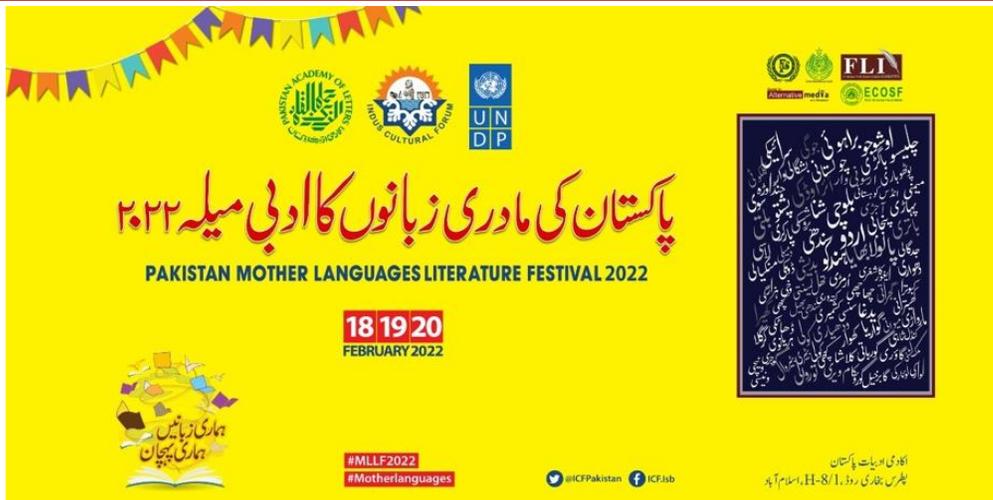
The analysis also revealed that digital infrastructure and internet access are top-performing indicators of digital development in the CAREC region, while digital payments and e-commerce both report the lowest average score. Overall, Azerbaijan and Uzbekistan were found relatively less digitally divided economies compared with Kyrgyzstan, Pakistan, Tajikistan, and Afghanistan.

This study has also constructed a cumulative digital divide index (CDDI) using secondary data from 2016 to 2020. CDDI considered cost and affordability, access and infrastructure, Internet quality, digital security, regulations, digital FDI, and ICT output.



For CDDI, this study included eight CAREC economies: Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Tajikistan, and Uzbekistan, while Afghanistan, Turkmenistan, and the PRC were dropped from the analysis due to data limitations. The average CDDI score exhibited that Kazakhstan and Georgia are the least digitally divided countries among the selected, while Azerbaijan and Mongolia are moderately divided in the digital spectrum, whereas Uzbekistan, Kyrgyzstan, Pakistan, and Tajikistan are the least performing economies in CDDI, confirming a higher digital divide.

Mother Languages Literature Festival 2022 held in Islamabad



The three-day annual Mother Languages Literature Festival for the year 2022 (MLLF-2022) was organized by the Indus Cultural Forum (ICF), Pakistan Academy of Letters (PAL) and United National Development Programme (UNDP) Pakistan, in collaboration with ECO Science Foundation (ECOSF), Culture Department Government of Sindh, Government of Balochistan, Pakistan Science Foundation (PSF) and others on 18-20 February 2022 at Islamabad-Pakistan. A large number of intellectuals, poets, scholars, artists, students and the general public participated in the festival.

The objective of this annual festival has been to provide a platform to intellectuals, writers, and thinkers representing different languages to come together and present their work on various genres of art, literature, culture, science and education in the mother languages of Pakistan.





The event was opened by the Chairman PAL Dr. Yousuf Khushk. He highlighted the importance of mother languages and shared that according to UNESCO study, about 27 languages are at the verge of extinction in Pakistan. He emphasized that there is dire need to promote and get initial education in mother languages.

Mr. Munawar Hassan, Chairperson ICF, on behalf of all the organizers welcomed the distinguished guests and participants for attending the event from all over Pakistan. He also thanked UNDP-Pakistan, ECOSF and other partner organizations for their support in organizing the event.

Mrs. Gazala Saifi, Parliamentary Secretary on Culture and Heritage attended the opening ceremony as Chief Guest. In her remarks, she admired ICF, PAL and other organizations for promoting mother languages

During the Festival, ECOSF in collaboration with PSF arranged a Science Bus/Mobile Science Laboratory and Planetarium Show for students and families. A good number of students and families experienced the virtual solar system and scientific models installed in the Bus.



A documentary entitled “Pakistan: Places, Faces, Voices” which featured Pakistan’s 22 languages, made by UNDP was also screened during the festival. The Resident Representative of UNDP in Pakistan H.E. Mr. Knut Ostby said the documentary beautifully captured the richness of the diverse landscape that this country was blessed with - starting from the splendid peaks of the north to the deserts and sea of the South. The idea was to bring to surface the daily problems faced by the communities while they speak in their local languages in their own settings. Mr. Ostby hoped that the humble contribution to the cause of linguistic diversity would go a long way for achievement of development outcomes.

Several book launching ceremonies were part of the festival and eight novels of different languages, 13 poetry books were unveiled. The different sessions such as storytelling, poetry, book review etc. were also part of the festival. The session on dictionaries and adaptability of languages and feminist literature in mother languages was also arranged. Various stalls of books were arranged to showcase works in different languages. Lifetime Achievement Awards were also given to senior writers, scholars and poets came from all over Pakistan who have been contributing in the literature for long time.



On the last day of the festival, two sessions highlighting the need for the state and society to work together for the promotion and protection of endangered languages and also on the role of literary festivals in galvanizing literary activism and reading culture held.

The speakers asked the government institutions to play their role for patronizing the endangered languages, celebrate linguistic diversity and prioritize ignored languages.

It was concluded that native speakers were primarily responsible for the protection of their mother languages; however, provision of equal flourishing opportunities was on part of the government to facilitate and allocate resources for the purpose.

ECOSF participated in a Virtual Webinar on Regional Integration in Caucasus, Central Asia, and Mongolia organized by CAREC Institute

The CAREC Institute, the Asian Development Bank (ADB), and the Regional Capacity Development Center (CCAMTAC) of the International Monetary Fund (IMF) hosted a webinar on regional integration on 24 February 2022 to share a multidimensional assessment of regional integration in Asia in general, and in CAREC more specifically.

Syed Shakeel Shah, the CAREC Institute Director underlined the disconnect between countries created by geography, poor infrastructure, and inefficient policies is an impediment to economic development. Regional integration allows countries to overcome these costly disconnects; integrate markets for goods, services, and capital. It allows to share the costs of public goods and large infrastructure projects, to enable and anchor reforms, and to reap other non- economic benefits, such as peace and security.



Rolando Avendano, Economist at the ADB, spoke about the Asia-Pacific Regional Cooperation and Integration Index (ARCII) and invited scholars to cooperate on its refinement through a dedicated website which has various datasets available. Hans Holzhaecker, Chief Economist at the CAREC Institute, elaborated on the CAREC Regional Integration Index (CRII) and noted that the strongest and increasing integration is observed in the regional value chain dimension due to forward linkages of commodity exports. He reasoned that CAREC is not so much about the internal regional market than it is about increasing the global (continental) weight of the CAREC region through cooperation and that this should perhaps be reflected in the CRII in future.

The presentations posed and invited a lot of questions from the audience, namely how the definition of integration, as a notion, defines the methodology, and how this notion evolves over time; also how much reflective work is required on indicators, baseline, and data quality.

SCIENCE IN KAZAKHSTAN: CURRENT SITUATION AND NEW DEVELOPMENTS

Courtesy of Eurasian Research Institute (ERI)

When we look at the latest scientific and technological developments in the world, we can see that science covers almost all areas of our lives. In recent years, many changes and innovations have been implemented in Kazakhstan in terms of scientific developments. As it is known, many scientific project announcements supported by the state are carried out in a competitive environment. In this process, besides the production of information, some bureaucratic procedures are required to be completed. On the other hand, the level of compliance of the participants with various scientific criteria is also checked.

It is possible to say that all these procedures are currently undergoing a significant change process. First of all, it should be noted that the number of scientific project competitions has been increased significantly, and steps have been taken to minimize the time spent by the participants for paperwork by providing various flexibility in the bureaucratic procedures required within the scope of the project. On the other hand, a number of different evaluation processes are initiated, such as paying attention to the quality of the publication rather than the numbers, by raising the bar for the scientific publications, titles and other indicators requested from the candidates who will participate in scientific projects.

First of all, in recent years, the requirements for higher and postgraduate, technical and vocational education have been strengthened in Kazakhstan, reducing the number of low-quality higher education institutions, such as universities and colleges, after a comprehensive inspection. According to the Ministry of Education and Science of the Republic of Kazakhstan, the number of higher education institutions, which was 132 in 2019, 128 in 2020 and finally reduced to 124 in 2021.

The total number of technical and vocational colleges was reduced from 801 in 2019 to 795 in 2020 and to 778 in 2021. Due to the quality of universities and colleges and the increasing demands for science, the share of Kazakhstan universities in the global university rankings has been increasing in recent years. Since 2016, the number of Kazakhstan universities included in the QS World University Rankings has increased from 8 to 14. Al-Farabi Kazakh National University, K. Satpayev Kazakh National Technical Research University and Abay Kazakh National Pedagogical University were listed by Times Higher Education.

According to 2020 data, a total of 618,090 people are currently studying at universities in the country, including 576,557 undergraduate, 34,619 masters and 6,914 doctoral students. A total of 475,960 people are educated in technical and vocational education institutions (Ministry of Education and Science of the Republic of Kazakhstan, 2021a). According to the UNESCO Institute for Statistics (UIS), 790 out of every million people in Kazakhstan hold an academic title. One of the reasons for the positive change in higher education in recent years is the increase in state grants and state scholarships for students. According to data of the Ministry of Education and Science of the Republic of Kazakhstan for July 2021, the number of grants allocated to undergraduate programs in the last four years has increased by 1.7 times, for masters by 1.8 times and for doctoral programs by 3.7 times.

Read more: <https://www.eurasian-research.org/publication/science-in-kazakhstan-current-situation-and-new-developments/>