



Research Conference Report

COVID-19 AND POTENTIAL FOR ECONOMIC RECOVERY IN THE CAREC REGION

March 2021



CAREC Institute

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in the CAREC Region**

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ABBREVIATIONS

ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
B2B	Business-to-Business
CAREC	Central Asian Regional Economic Cooperation
CI	CAREC Institute
CPMM	Corridor Performance Measurement and Monitoring
CTTDF	CAREC Think Tanks Development Forum
FDI	Foreign Direct Investment
G2G	Government-to-Government
GDP	Gross Domestic Product
GVC	Global Value Chain
MDP	Multilateral Development Partner
OECD	Organization for Economic Cooperation and Development
PIDE	Pakistan Institute of Development Economics
PRC	People's Republic of China
RC	Research Conference
SDG	Sustainable Development Goals
SDPI	Sustainable Development Policy Institute
SME	Small and Medium Enterprises
VFP	Visiting Fellow Program
WASH	Water Sanitation Hygiene

INTRODUCTION

Conceived as less-aggressive initially, yet expanded exponentially across the world, the COVID-19 pandemic has become a real testament to economic resilience. It still continues to keep everyone in limbo. The disruptions have sparked supply and demand shocks across all industrial sectors, plunging the global economy into a severe crisis. It has exposed vulnerabilities of economies, in general, and the health sector, in particular. The crisis has made clear how vulnerable our health system is and that it has to be prioritized and well-integrated into the policy and development agenda of governments in order to sustain resilience to a crisis as such. Now is the very right time to develop crisis-resilient strategies to expediate the economic recovery, backed by the evidence-based research and conceptual thinking.

Undeniably, the role of research and analytical work is essential to ensure a sustainable and inclusive recovery in view of potential crisis in the future. Reports and analyses issued by various think tanks and research institutes have underlined the importance of research and technological developments in shaping necessary national and regional policies to accelerate the process of recovery in the CAREC region. The CAREC Institute, as one of the growing think tanks of the region, has a mission to produce relevant research products for better economic growth and integration in the CAREC region. This inaugural research conference, held on 4-5 March 2021, has been one of the important steps taken towards that objective.

Bringing together more than 150 participants, the first CAREC Institute research conference offered unique insights and substantial research-driven policy options at the interface of ongoing global COVID-19 pandemic and economic downturn. This report contains insights on how recovery might look like through the following four thematic dimensions that reflect the discussions of the conference: (i) Digital CAREC; (ii) Macroeconomic dynamics in the CAREC region; (iii) Tourism sector; and (iv) Enterprises and industries.

The sessions of the conference summarized in this report reveal some underpinning nuances of dealing with COVID-19 impact across various sectors by unpicking subtle challenges that will seemingly have widespread effect on the post-pandemic recovery. Additionally, the report suggests a few research horizons on the economic growth and integration in the CAREC region.

POST-COVID-19 ECONOMIC RECOVERY

The pandemic has charted a new direction for many. It taught everyone to embrace, to diversify and to come together on a new journey to surmount new challenges. When countries align around a common objective through a regional cooperation mechanism, they can achieve more, even more than the period before the pandemic. Hence, the pandemic has shown how regional cooperation can be a desirable goal.

If there was a pre-existing cooperation in the health sector, the exchange of medical supplies and expertise would be faster and more effective. If there was a high-quality tracking system in the region, it would be easier to contain the virus even across borders. Effective paperless trade and smooth customs cooperation would allow to keep the borders open during the pandemic. Equally, the tourism sector would not be affected so severely. Recovery is on its way, but the shape of the recovery is uncertain as it takes different trajectories in different countries. Robust public policies, backed by evidence-based research outputs, can be backbones of the resilient recovery.

There is a widespread recognition of the need for economic diversification if the national economies are to prosper in the 2020s. Landlockedness of Central Asia should not be an excuse anymore, rather an advantage. The improved rail infrastructure has already reduced costs of landlockedness for some parts of Central Asia. Moreover, COVID-19 highlighted the advantages of rail as well, especially for the global value chain (GVC) trade. Whether a country takes advantage of the window of opportunity will depend on economic reforms to reduce the costs of doing business and of international trade. A likely area for diversification is by GVC participation that could increase intra-CAREC trade by strengthening regional cooperation and integration.

The new reality emerging from the pandemic created imperatives and also opportunities for countries to reconfigure their approach to regional cooperation and reset their policy reforms. How will life, economic development, public health, and society in general change in the post-pandemic world? The resolution of these dilemmas will be decisive for the next decade of recovery.

DIGITAL CAREC AND POST-COVID ECONOMIC RECOVERY IN THE REGION

Digital services are getting increasingly integrated into the life of people across the globe connecting them to jobs, businesses, governments, knowledge and to one another. Digital progress leads to growth, unlocking more trade opportunities and creating more value from available resources. A major progress has been observed in digital trade across countries in the wake of the initial phase of the global pandemic. E-commerce, digital payments, and digital FDI have seen huge acceleration since last year. This indicates that the pandemic has created tremendous opportunities for digital

transformation of CAREC countries. Yet, the CAREC region still has huge potential to unveil.

Discussing these points, the presentations of the first session uncovered the role of digitization and digital technologies throughout the crisis that has propelled their significance since the pandemic kicked off.

Digital Transformation in Central Asia: Challenges and Lessons

Farrukh Khakimov and Shavkat Alimbekov from the Development Strategy Center of Uzbekistan analyzed digital development priorities and challenges of five Central Asian countries: Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan.

They described national digitalization programs which are titled as “Digital Strategy” in three out of five countries: Digital Kazakhstan 2018-2022, Digital Kyrgyzstan 2019-2023, and Digital Uzbekistan 2030, whereas Tajikistan and Turkmenistan prioritized their digital transformation programs in the framework of broader national development and/or digital economy programs.

Giving an example of Uzbekistan where the Internet access is uneven, the digital economy contributes just 1.8% to the GDP, 70% of 700 government information systems are not integrated with the e-government platform, and only 27 agencies provide services through the national public service delivery framework, the authors argued that COVID-19 quarantine and containment measures have accelerated the implementation of digital strategies in Uzbekistan and other Central Asian states.

They quoted OECD which observed that Kazakhstan, Kyrgyzstan, and Uzbekistan have increased digitalization measures in 2020. Kyrgyzstan moved more than 80 government services online through the Tunduk initiative, while Uzbekistan has accelerated the development of online one-stop shops and other e-services. The government of Uzbekistan has also opened a call center to help traders with their queries and used the moment to expand digitalization in customs and trade procedures what helped keep trade flowing. In Kazakhstan, the Ministry of Health required the citizens under quarantine to use the SmartAstana tracking app, which allows officials to guarantee these individuals remained in isolation, whereas the Ministry of Interior relied on “Sergek” video surveillance technology to find violators of the quarantine regime in Almaty city.

The authors found common barriers to e-government development in Central Asia, such as the digital divide, insufficient ICT infrastructure, costly Internet access, lack of qualifications among civil servants, lack of digital literacy among citizens, and low level of public confidence in digital documents and services. As a result, there is poor demand for e-services. They also found that lack of a digital base of international

treaties and shortcomings in the digitalization of the legislative framework impede business access to legislative acts and hamper creation of innovative management systems, and development of new and unique products.

Khakimov and Alimbekov argued that developing countries with limited fiscal space will need to prioritize resources and efforts to target highest impact areas. Investing in digital infrastructure, technologies, and services will not only help countries prepare for future shocks but also identify pathways to accelerate inclusive growth. Expanding access to affordable internet connectivity and ensuring secure data and computing infrastructure are core digital enablers to facilitate development of government e-platforms, digital financial services, digital skills, and new innovative business models across sectors.

Improved Health Conditions and Digital Transformation post-COVID-19

The research on improved health conditions and digital transformation post-COVID focused on the role of digitalization in reviving the economy. Muhammad Zeshan of the World Bank, Pakistan, and Mehwish Rafique from the University of Arid Agriculture, Pakistan, highlighted that the pandemic has triggered digital transformation and the digital technologies have become essential tools to operate businesses in the new environment. It has become important to analyze the role of recent digital transformation to examine digital dividends in a more resilient future.

Utilizing a CGE (Computable General Equilibrium) based framework, this work aimed to identify how digital transformation can be useful to accelerate the lost economic growth in the CAREC region. The author also discussed the economic mechanism through which the health cost of the pandemic can be compensated. For this purpose, the author used the latest GTAP (Global Trade Analysis Project) database version 11, which is a global input-output table of 142 countries/regions and comprises 65 sectors.

The simulation results of the research indicated that boosting IT and rising employment of skilled labor support the desired growth trajectory in the CAREC region. However, It is challenging to understand whether it is sufficient to cover the required health cost of the COVID-19 pandemic. Direct investments in the health sector are required for this purpose, and restructuring the medical industry necessitates heavy fixed investment costs. Currently, it is even harder to assess the type and level of investment required to cope with the COVID-19 as the relevant technologies are still in an underdeveloped phase. There is a need to evaluate the economic cost of COVID-19 in the CAREC region and pay attention to investment in the health industry.

The research attempted to calculate the direct health cost of COVID-19 for the CAREC region. Findings illustrated that the direct health cost of COVID-19 was the highest in

Pakistan and Kazakhstan compared with other CAREC countries. Comparison of the direct health cost with the gains from welfare indicates that accelerated adoption of the IT can effectively offset the direct economic cost of COVID-19 in the short run.

E-commerce Taxation in Central Asia: Current State & Opportunity for Reform

Nikolai Milogolov, a principal academic researcher at the Institute of Applied Economic Research of the Russian Presidential Academy, explored the current state and opportunities for reforming e-commerce taxation in Central Asia. He performed a comparative analysis of the e-commerce infrastructure, tax administration development, and general economic development of four Central Asian economies: Kyrgyzstan, Kazakhstan, Uzbekistan, and Tajikistan.

The author identified a large gap between Kazakhstan and other states. This gap could be observed at the levels of respective tax administration capacities, the size of digital service markets, and the development of the national e-commerce infrastructure.

He reasoned that Tajikistan has the least developed tax administration system, ranking at 139th globally with double the nominal tax burden on business than in three other countries. Kyrgyzstan is striving to streamline its tax system, which is still rather complex and burdensome for taxpayers.

In Uzbekistan, the definition of e-commerce is wider than it is in Kazakhstan, as e-commerce trade includes not only goods (as in Kazakhstan) but also services. Uzbekistan also has a lower threshold for the share of e-commerce income as part of total income at 80%, while the threshold in Kazakhstan is 90% for a business to be eligible for special tax conditions. As Uzbekistan's system was introduced two years after the Kazakhstan system, it might suggest that there is a Central Asia international tax competition for e-commerce businesses between the largest and the second largest economies.

As of 26 December 2020, there were 72 Uzbek small businesses who applied for e-commerce treatment as per the National Registry. The author suggested that this is quite modest, especially considering the context of the 2020 pandemic which pushed small businesses towards adopting e-commerce.

He recommended investing in building up digital capacity for tax authorities especially as a pre-condition for collaborating with e-commerce platforms in tackling the shadow economy, and introduction of the digital service tax based on the harmonized regional model. Such a step would be optimal for finding a balance between the goals of mobilizing tax revenues for financing the post-COVID-19 recovery and creating simple and certain conditions for foreign digital platforms operating inside these economies. Attracting foreign platforms to local economies is critical for the digital transformation

of SMEs, and it could partly compensate for their losses due to COVID-19 restrictions, the author argued.

Adaptability towards Work from Home Arrangements in Pakistan

Umer Khalid and Lubna Shahnaz from the Policy Research Innovation Development and Education Institution have analyzed evidence from Pakistan on adaptability towards work from home arrangements.

Their study presented estimates of proportion of non-agricultural workforce that can potentially work from home in Pakistan, using nationally representative data from Pakistan Social and Living Standards Measurement Survey 2018-19. Measuring feasibility of work from home on the basis of a worker's ability to use computers and involvement in home-based work, study results indicate that around 15% of the non-agricultural workforce in Pakistan could work from home, including 9% who can use computers and 5.3% that are engaged in home-based work.

The total employed labor force of Pakistan aged 10 years and above stood at 61.71 million in 2017-18. The majority of the employed workforce in the country is male at 78% (48.17 million), while only 22% (13.54 million) females. A large share of this employed workforce is engaged in the agricultural sector at 38.6%, while 61.4% (37.9 million) are employed in the non-agricultural sector. Of the country's 37.9 million non-agricultural workers, the significant majority at 72% is employed in the informal economy, while only 28% are engaged in the formal sector and enjoy some form of employer provided social protection support.

The largest size of non-agricultural employment is in the manufacturing sector at 9.91 million, followed closely by wholesale and retail trade (9.21 million) and community, social & personal services (9.11 million); while the construction and transport, storage & communications sectors provide employment to 4.7 million and 3.82 million workers, respectively.

The analysis further showed that usage of ICT devices is significantly higher for individuals living in households in the top two expenditure quintiles. Findings from multivariate analysis showed that the probability of working remotely from home is higher for youth and the middle aged, individuals living in urban areas and in smaller nuclear family structures. Education is a strong predictor of the ability to work from home remotely – individuals with higher education have higher probability of working from home. Workers engaged in white collar occupations are more likely to work from home compared to those in the lower skilled occupations.

The authors concluded that investment in development of ICT infrastructure for improving productivity of the country's workforce is an important area of policy action.

Promoting Fintech to Meet Underserved Needs in Trade Finance in CAREC

Minsoo Lee of ADB and Ghulam Samad from the CAREC Institute analyzed financial inclusion in CAREC. Their paper presents analysis of a cross-sectional dataset of firms in four periods and various factors driving trade finance rejections affecting largely the needs of smaller firms.

According to the World Trade Organization estimate, trade finance facilitates around 80-90% of international trade today. Worldwide, the unmet demand for trade finance amounted to \$1.5 trillion in 2017 and is expected to rise to more than \$2.4 trillion by 2025 (WEF and Bain & Company 2018). In 2018, 57% of trade finance applications from firms in CAREC - mostly from Kyrgyzstan and Pakistan - were rejected, almost half of which no longer seek alternative finance, altogether withdrawing from a potentially viable trade activity.

Trade finance requests from smaller firms are often rejected due to high perceived costs and risks associated with their insufficient collateral or guarantees, lack of relationship with financial institutions, and insufficient credit or performance history. For lenders, smaller ticket transactions involve high transaction and information costs of having to stringently comply with international regulations and standards, such as anti-money laundering and know your client (KYC). Country-specific factors such as the lack of correspondent banking relations exacerbated by large global bank withdrawal from emerging countries due to the perceived risk of doing business also influence success of trade finance applications.

More specifically, Tajikistan exhibits the largest decline and had lost more than half of the correspondent bank relations from 2011 to 2019. It is followed by Afghanistan, Azerbaijan, and Kazakhstan, with more than 30% of decline in such relations. Georgia seems to have endured the global trend, allowing its correspondent relations to grow by almost 20% during the same period.

The gap is further complicated by the absence of national export credit agencies in many CAREC countries, such as Afghanistan, Azerbaijan, Georgia, Kyrgyzstan, Mongolia, Tajikistan, and Turkmenistan.

The trade finance gap, hindering some businesses to trade and access markets, poses repercussions toward investment flows and financial inclusion that could affect future economic growth and development. Finding solutions to bridge the gap would foster business dynamism, enforcing the ability of even smaller firms to benefit from the reallocation of production and investment within the global supply chains.

Dr. Lee discussed potential solutions to trade financing gap through the use of financial technologies. He argued that digital technologies in financial services make

risk management more effective, facilitate transactions across larger distances and at a faster speed, allow transactions without having to rely on personal relations, and increase transparency. Using distributed ledger technology, supply chains can be more cost effective and efficient by replacing complex and paper-based procedures. Use of blockchain technology can enhance the flow of information and overcome compliance challenges.

Within CAREC, the PRC has proved to be in advanced phases of financial development in both traditional and tech-heavy sectors. The alternative finance market volume in the PRC totaled \$215.4 billion, more than half of the global alternative finance industry facilitating \$304.5 billion in transaction volume. Georgia's alternative finance industry facilitated around \$193 million in transaction volume in 2018, followed by Kazakhstan (\$87 million) and Mongolia (\$38 million). The rest of the member economies have less than \$10 million in transaction volume, with the lowest recorded in Afghanistan (\$184,479) and Azerbaijan (\$2,222).

The authors recommended CAREC members to focus on building their fintech foundation; bolstering the ICT and digital infrastructures; ensuring regulatory quality (e.g., cybersecurity and other technical vulnerabilities, data governance, and privacy protection), and enhancing required capabilities to advance inclusive trade and finance. He also recommends CAREC to benefit from the ADB-supported guarantees and loans through its Trade and Supply Chain Finance Program (TSCFP) to support international trade.

REGIONAL INTEGRATION AND MACROECONOMIC DYNAMICS

The COVID-19 pandemic is unprecedented in its global reach and impact. The impact is significant and covers all sectors. Its impact is expected to be long-term, therefore it is posing formidable challenges to policymakers. Considering this, it is important to conduct research on it and many researchers from around the world are working on this. This section herewith contains presentations about the direct and indirect impacts of the global pandemic on economic growth and regional integration processes.

How Kazakhstan sees ASEAN in the post-COVID-19 New Normal

Alessandro Arduino and Inkar Aitkuzhina from the National University of Singapore, along with Paradorn Rangsimaporn, a Thai diplomat based in Nur-Sultan, looked into Kazakhstan's perception of the ASEAN and its implication on cooperation alignment in the region. They argued that it is essential to understand how Southeast Asia is perceived locally, both by the ruling elites as well as the local population to understand how Central Asia could develop and coalesce as a region in terms of trade, infrastructure, and investment beacon for ASEAN.

In their assessment, ASEAN's economic cooperation and logistics network integration with Eurasia via Kazakhstan represents an underexplored opportunity, and Kazakhstan's political, commercial, and analytical elites perceive ASEAN as an important and large market to access with a population of approximately 656 million and a combined GDP of \$3,166 billion. Moreover, they mention Vietnam's Free Trade Agreement (FTA) with the Eurasian Economic Union (EAEU) in which Kazakhstan is a member and 2021 chair, and Indonesia, Cambodia, and Thailand having Memoranda of Cooperation with the Eurasian Economic Commission (EEC), the EAEU's executive and regulatory body.

Further, the researchers provided that Kazakh elites noted special interest in economic cooperation with Vietnam on agricultural and livestock products; learning from experiences of Singapore and Indonesia in diversifying and modernizing the economy, intellectual property ecosystem and innovation; tapping into Malaysia's halal food, fintech, and Islamic finance expertise. He argued that ASEAN countries are perceived as less assertive than big powers and ASEAN does not have any negative historical burden in Central Asia.

Seeing ASEAN's success in uniting small states to withstand pressure from larger states, some Kazakh analysts have proposed ASEAN as a useful model for Central Asian regionalism, with "informal" or "soft" features and focus on consensus and consultation rather than on formal integration and institutionalization.

Since the 1990s, the success of the Asian Tigers was seen by Kazakhstan, as well as other Central Asian states, as an economic and political model to emulate. The idea of providing Bolashak (the future) scholarships for thousands of gifted Kazakh students to study abroad came to President Nazarbayev when he visited Singapore in 1993 and witnessed the country's achievements due to its highly educated and skilled workforce. The Samruk Kazyna (Sovereign Wealth Fund) was also modelled after Singapore's Temasek, and other policies, like affordable housing and pension system, are being watched for possible replication.

Overall, ASEAN is seen as a potential economic partner to diversify foreign relations and lessen dependence on a single or few stakeholders. The pandemic is unlikely to diminish this trend and only serve to reinforce Kazakhstan's need to search for new partners in ASEAN, the author concluded.

Exploring Prospects of China-Pakistan Energy Cooperation

Lv Zhiping and Li Jinhong of Xinjiang University of Finance and Economics looked into Pakistan's economic recovery post-COVID-19 and explored prospects of the PRC-Pakistan energy cooperation.

The authors provided that the economic growth is driven by "troika:" investment, export, and consumption. Then look into Pakistan's low savings rate which restrict domestic consumption, security situation which affects the foreign investor confidence, Pakistan's foreign exchange reserve of less than \$20 billion, average annual FDI of \$2 billion, export of textile industry which accounts for 40% of the country's' industrial output value, China-Pakistan Economic Corridor (CPEC) investment which provided more than 30% of foreign investment in Pakistan in most years since 2015, external debt burden, energy situation, corporate tax practice, and development options given the context.

According to the authors, Pakistan has long been short of energy and its energy consumption structure is severely unbalanced to meet the needs of the country's more than 9.6 million consumers. Pakistan imports expensive oil and gas mainly for coal-fired power generation, putting a huge burden on the government's finances and contributing to the worsening fiscal deficit. The total installed capacity of all types of power stations in Pakistan is 33,500 megawatts, of which 61% comes from thermal power, 29% from hydropower, 6% from renewable energy and 4% from the nuclear power.

Pakistan's power grid is assessed to have a loss of 20% in transmission and distribution links, and there are arrears of payments for energy use. Given that 74% of the PRC's energy cooperation projects are energy power generation projects, the issue of arrears between the power generation enterprises and energy providers might affect negatively capital investment in future projects, the authors argued.

Although Pakistan has abundant opportunities in clean energy, it is generally underdeveloped. Wind and solar power development have just started, and investment requirements are sizable, while the service life is only about 25 years. The authors argued that Pakistan is severely affected by climate change and its impact is likely to worsen through continued use of fossil fuels. Effective deployment of renewable energy could increase the country's electrification rate, boost economic development, decarbonize the power system, and help Pakistan meet its obligations under the Paris Agreement. The authors mentioned that, under CPEC, eight energy projects have been completed and now provide more than 3,640 MW of energy to Pakistan's national grid. In addition, there are several renewable projects under construction with a total capacity of 5,094 MW.

Factors that influence investment include Pakistan's heavy external debt burden at 104.3% of GDP in 2020 (if Pakistan's corporate debt is added), and heavy taxation of enterprises with cumbersome paperwork which, in the assessment of OECD, takes on average 594 working hours and 47 payments, while OECD countries only need 175 working hours and 12 payments.

The authors argued that CPEC can upgrade Pakistan's economic infrastructure, improve its transportation and logistics conditions, and make Pakistan a geographic entry port and trade area for the Chinese energy. Taking this as an opportunity, the PRC can transfer part of its petroleum refining industry to Pakistan and combine it with Pakistan's textile industry to promote development of Pakistan's industrial economy. For this, it is suggested to improve the energy production system, establish energy cooperation in digital financial services, explore the energy financial system with capital market participation and promote the driving effect of the energy industry on the economy.

Impact of COVID-19 Pandemic on Pakistan & Central Bank Response

Muhammad Moaiz Siddiqui, Deputy Director, Financial Stability Department, State Bank of Pakistan, analyzed the impact of the pandemic on the economy of Pakistan and explored the responses of the Central Bank. As in many other countries, due to lockdown measures, the manufacturing, textiles, construction, automobile, transportation, leather and allied goods industries have come to a halt, which produced a supply shock for the economy. Drastic reduction in aggregate demand for goods and services have been observed. The shock has affected the Pakistan Stock Exchange (PSX) as well. It got reduced from 41630 points on 31 January 2020 to 29231 points in March 2020. The market cap has also reduced from \$50.8 billion to \$33.8 billion for the same period.

Yet, the government ensured the supply chain of foods and other essential items. The Central Bank responded to shocks with monetary easing. The bank cut the monetary policy rate from 13.25% in February 2020 to 7% in June 2020. Rate cuts helped banks meet the liquidity requirement and eased day-to-day operations. The widespread and quick policy response of Pakistan's Central Bank with measures such as monetary easing, facilitated new investment, macro-prudential relief, loan extension and restructuring package, salary & wage financing, support to health sector, promotion of digital payments and introduction of Roshan Digital Accounts (RDA), among other. This provided not only pivotal liquidity support to small businesses and the wider economy but also enhanced resilience of the banking system. This confidence is reflected in the steady improvement in performance of the banking system and its impacts are also being carried over to the broader economy.

The responses made by Pakistan's Central Bank to the challenges stemmed from the COVID-19 crisis provided a good policy blueprint to developing economies for future crisis of this nature.

Debt and Debt Sustainability in the CAREC Region

Naseem Faraz from Pakistan Institute of Development Economics and Ghulam Samad of the CAREC Institute provided a historical overview of debt accumulation in CAREC, analyzed impact of COVID-19 on debt, and looked into scenarios for debt sustainability.

The authors narrated that several CAREC countries were in significant debt waves during 1990-2001 mainly driven by the Washington consensuses to help Central and East Asian countries liberalize their economies during 1990s. The second debt wave was experienced during the global financial crisis that disrupted bank financing during 2007-9. This crisis pushed Pakistan, Georgia, Kazakhstan, and Mongolia into recession, eventually causing either zero or negative GDP growth.

They further argued that while external shocks typically triggered financial crisis, the impact on individual economies was heavily influenced by domestic policy frameworks and choices.

From the perspective of a macroeconomic theory, a government debt to fund expenditures should have a positive impact on the economic growth if money is spent on productive sectors. The author then analyzed several parameters in CAREC, namely: debt service on external debt, interest payment on external debt, debt service to GDP and debt service to percent of GDP, debt service percent of exports, debt service percent of reserves, reasons for debt, current account balance, exchange rates, grants, foreign direct investment (inflow), etc.

To select few examples, the authors argued that Pakistan has accumulated more than \$10 billion new debt during the pandemic. Pakistan's debt-GDP ratio was highest in CAREC at 86% in 2019. It further increased to 88% in 2020. The researchers provided a scenario where Pakistan can achieve fiscal responsibility and debt limit of 60% by 2030 at a 10% GDP growth.

The government debt in Kyrgyzstan was roughly 68% of GDP in recent past. It was 54% in 2019 and increased to 68% of GDP in 2020. In her assessment, the debt to GDP ratio will decrease from 68% to sustainable 60% by 2030 if the government maintains the primary balance close to zero, real interest rate does not cross the historical value, and a 12% GDP growth is achieved.

The authors made suggestions to create an investment-friendly environment in CAREC.

TOURISM SECTOR IN TIMES OF HIGH UNCERTAINTY

It is no secret that the ongoing pandemic has disrupted the tourism industry worldwide, contributing to the decline of 10.3% of global GDP from the tourism and travel industry. The CAREC region reflected the same trends. The tourism industry is the key contributor to several economies in CAREC. Tourist arrivals in 8 CAREC countries, excluding Afghanistan, the PRC, and Turkmenistan, reached almost 20 million in 2018. Pre-pandemic, the share of total employment by tourism increased from 7% to over 13% in Azerbaijan, from 16% to nearly 27% in Georgia only. During the same period, the sector's contribution to GDP doubled in both countries.

Despite the enormous potential of the tourism sector in the CAREC region, already pre-pandemic, there were a number of challenges and obstacles associated with consumer perception, tourism products, standards, services, and personal safety. Governments need to ponder on policy actions to revive the tourism industry. In the wake of the ongoing global pandemic, the sector is facing even more challenges. Recovery and unlocking full potential of the sector can be supported by crisis-resilient policy actions that are depicted in the presentations of this section.

COVID-19 Impact on the Development of Cities: the Case Kabul

Madina Junussova from University of Central Asia and Saniya Soltybayeva from the Economic Research Institute under the Ministry of National Economy of Kazakhstan assessed the impact of COVID-19 on sustainable urban development of informal settlements in Kabul from the angle of (i) urban hygiene and access to water and sanitation and (ii) access to housing, land, and property rights. The findings show that success of any development intervention in informal settlements depends on the level of local community buy-in and participation.

The authors adopted a theoretical framework putting together three Sustainable Development Goals (SDG) - SDG 11 sustainable cities and communities, SDG 3 good health and well-being, SDG 6 clean water and sanitation - for this study. They argued against the top-down approaches, forced resettlement, and structure demolition, instead they advocate for adoption of a bottom-up and socially-just approaches.

Approximately 70% of Kabul residents live in informal settlements (UN-Habitat identified 54 informal settlements in 2020). These residents comprise the urban poor, rural migrants, returned refugees, and people displaced by conflicts or disasters. The residents purchase land by entering Urfe agreements (customary deeds) without realizing they entered informal deals.

In 2018, the average annual household income in the Central/Kabul region was estimated at \$2,400, whereas the price of formal housing was from \$30,000 to

\$500,000 depending on the size and location. Thus, the cost of housing exceeds the average annual household income more than 12 times, whereas OECD estimates that “affordable” housing should not exceed 3.5 times the mortgage applicant's annual income.

During the pandemic, social distancing or self-isolation has become an unaffordable luxury for the urban poor living in densely populated informal settlements. Additionally, current practices of wastewater disposal pose significant biohazard risks and foster the spread of COVID-19 in informal settlements, and implementation of handwashing has become impractical due to absence of adequate access to clean water and sanitation.

The groundwater is the main source of water supply in Kabul on which about 70% of the urban population relies. The estimated groundwater availability in Kabul is approximately 44 million m³/year that is enough to supply only 2 million inhabitants at the modest per capita consumption of 50 liter/day. In Kabul, with over 6 million people, more than 80% of urban residents struggle with access to potable water. The continuous private extraction of groundwater by a growing number of residents leads to decreased groundwater level due to a negative balance between natural recharge and unregulated extraction.

In 2011, the Kabul City Master Plan was proposed which included recommendations for upgrading informal settlements, but proposed changes did not consider local resources and capacities.

The authors concluded that COVID-19 pandemic became a trigger to reassess the role of informal settlements in sustainable urban development. These settlements represent urban spaces with significant public health risks requiring special attention from the government regarding urban hygiene. The situation with informal settlements cannot continue to be overlooked if Central Asian governments want to protect their citizens.

Recovering from the Impact of the COVID-19 in the Tourism Industry

Analysis of Nam Foo, from Edith Cowan University, Perth, Western Australia, evolved around the questions of how significantly the pandemic affected the tourism industry and whether and how the Central Asian governments should do better to implement the recovery policy. Central Asia, known as part of the Great Silk Road, has been continuously gaining momentum as an emerging tourism destination. The region attracted approximately 11 million international arrivals in 2014. However, the coronavirus pandemic has significantly impacted the demand for travel and tourism across the region. To contain the spread of the virus, borders and businesses, including airlines, restaurants, tourist attractions, and hotels have closed. Within months, the

tourism industry transitioned from a status of 'over tourism' to no tourism making it one of the worst-hit sectors.

This health crisis has put approximately 700,000 travel and tourism jobs at risk. Central Asian governments have made substantial interventions and adopted appropriate economic policy measures to support the service industry. This study herewith investigated the impact of the COVID-19 pandemic on the tourism industry in Central Asia and assessed how the pandemic may change society, the economy, and tourism in the region's countries.

By applying quarterly panel regression analysis and developing data related to the total number of COVID-19 cases and deaths per country as of 6 December 2020, the researcher found a positive and significant correlation with developments in international tourism during the pandemic.

In general, the findings showed that the impact of COVID-19 could significantly impact international arrivals for CAREC members. The researcher recommended that governments to adopt new technologies. It was noted as equally important to broaden the use of applications aimed at minimizing human-to-human contact in the tourism industry. Through commitment and acceleration of digital adoption, the governments should encourage creation of travel bubble within the region and encourage domestic travel. As this global health crisis has serious consequences for international tourism, a government recovery plan is imperative. Hence, this paper detailed some key research requirements and COVID-19 recovery plans which governments can adopt to develop a more sustainable post-pandemic tourism industry in the region.

Network Analysis of Tourism Stocks During COVID-19 Pandemic

Faheem Aslam, Yasir Tariq Mohmand, Tahir Mumtaz Awan, & Mrestyal Khan from Comsats University Pakistan analyzed dynamic changes of the financial networks of tourism stocks concerning COVID-19 by using the data ranging from 01-July-2019 to 10-November-2020. They applied a comprehensive network theory to analyze the dynamics of 55 tourism stocks registered in the PRC (other CAREC members did not have any tourism related stocks listed).

The authors estimated change regarding the network of these tourism stocks by dividing them into five different categories (hotel & catering, travel agencies, transportation, airlines, and cruise lines). They then analyze the network changes with the evolution of COVID-19. Their study constructs and quantifies the variations in the network structures by dividing the timeline into three sub-periods: S1 (01-July-2019 to 31-December-2019) pre-pandemic times, S2 (01-January-2020 to 07-April-2020) peak times of the pandemic, and S3 (08-April-2020 to 10-November-2020) the time when the pandemic came under control.

The authors found significant correlation change during periods S1 and S2 with an increased association during the peak spread, specifically in the stocks of hotel and catering companies along with an increase in the correlation pairs of travel agencies. Network analysis reveals that before the outbreak of COVID-19, the tourism industry was least connected, but the interconnection among the tourism stocks became strong at the peak phase of COVID-19 and decreased after the peak phase. Among the stocks, the transportation sector played a vital role during these three timeframes according to a degree, betweenness and closeness centralities.

Before the outbreak of the COVID-19 pandemic, the author found seven different communities having the largest community of hotel, catering, transportation, and travel agencies with transportation stocks in the center. During the peak time, transportation and cruise liner stocks act as a bridge between the stocks of other tourism categories. Finally, after the peak time, findings show a decreased level of connectivity as compared with the peak phase.

The authors suggested that these findings can help regulatory authorities and practitioners globally in designing effective strategies with consideration of varying stock market dynamics. Specifically, the stock market regulators in the tourism industry must incorporate coordinated and combined policies so that abnormal fluctuations in the tourism stock returns can be removed. Apart from this, these statistical results provide insight for both the domestic and foreign investors to construct optimal portfolios and adopt risk mitigating strategies. The findings also suggest that chances of portfolio diversification decreased during the pandemic whereas the probability of higher diversification was present before COVID-19. On the other side, investment managers can utilize the information regarding the tourism stocks of several categories in establishing pair trading strategies via observing the co-movement of the selected categories. Furthermore, the applied topological network would help portfolio managers in designing the diversified categorical portfolios.

ENTERPRISE AND INDUSTRY

This section features a range of policy actions to support enterprises and industries in dealing with the impacts of the global pandemic. As businesses in various sectors have been forced to temporarily close or adapt their normal working arrangements, it has become imperative to reconfigure policy settings vis-à-vis enterprises and industries in order to sustain a resilient and robust economy in the post-pandemic world. The papers featured in this section reflected the impact of the pandemic on enterprises, also oil and banking sectors of the economy.

Impact of the COVID-19 Pandemic on SME: the Case of Kazakhstan

Brendan Duprey and Aizhan Salimzhanova of Sustainable Kazakhstan Research Institute reflected the impact of COVID-19 pandemic on SMEs in the Central Asian region through the case of Kazakhstan. SMEs represent more than 90% of total businesses in Central Asia, but their contribution to GDP is between 25% and 41%, except for Uzbekistan, which is closer to OECD average of around 55%. SMEs employ 78% of the workforce in Uzbekistan, and only 38% in Kazakhstan. SMEs are mostly concentrated in low value-added sectors, e.g., agriculture. Their contribution to GDP and employment is as follows: 57% GDP and 78% employment in Uzbekistan, 26% GDP and 32.1% employment in Kazakhstan, 12% GDP and 3.9% employment in Kyrgyzstan.

The authors have analyzed the impact of COVID-19 on the number of operating SMEs, production level of goods and services, and the number of employed people in SMEs in Kazakhstan. However, other factors, such as effects of the regulatory interventions of the government, and policy response to COVID-19 on SME performance were not considered.

The analysis showed that the COVID-19 pandemic continued to affect the economy of Kazakhstan, particularly the SMEs performance. SMEs development and growth halted in early 2020. Regulatory measures like lockdowns, and border closures have severely disrupted trade and consumption in the region, especially considering that the country is highly dependent on the export of raw materials, primary commodities and agricultural products. Lockdowns and movement controls in Kazakhstan, advised in dealing with COVID-19, were executed through social distancing, self-isolation, and travel restrictions.

Allowing SMEs to operate on a daily basis, even for a limited duration, during lockdowns, would be an essential support for companies. This, combined with flexible staff rotation and payment options, temporarily downsizing non-essential activities and analyzing new opportunities, could have helped SMEs in surviving through tough times.

Analysis of COVID-19 Impact on Azerbaijan's Oil Industry

Ulviyye Sanili Aydin from Manisa Celal Bayar University of Turkey analyzed COVID-19 impact on Azerbaijan's oil and gas sector and the country's adaptation to the new normal.

She provided that more than 90% of Azerbaijan's export is comprised of oil and natural gas (Azerbaijan being among the 24 largest oil producers with 0.8% of approx. 95 million barrels of oil per day being produced by Azerbaijan in 2019). Thus, any fluctuation in oil price and supply has a direct effect on the country's economy. Dr. Aydin suggested that, in near future, COVID- 19 will continue affecting the oil and gas industry of Azerbaijan negatively. However, in the long run, the new normal will push restructuring and transformation of the economy encouraging the state to diversify and open up for more renewable energy sources taking advantage of the revenues of the State Oil Fund.

She saw opportunities in preparing the workforce for the digital era, increasing the share of renewables in the economy, opening up the economy for the private sector, and revitalizing the agriculture which produced sizable volumes of silk, wool, raw cotton, grapes, tea, and fruits in the past.

Psychological Distress on Bank Employees: Moderating Effect of E-banking

The COVID-19 pandemic has affected all socio-economic sectors including the service sector. The service sub-sectors which deal directly with public, i.e., health, education, sanitary workers and banking, etc. are more affected than others. Employees providing these services are facing an imminent risk of virus infection. Such risks affect employee's mental health, which in turn shrinks their efficiency. Waheed Ali from the Xian Jiaotong University, China has zoomed in on the psychological aspects of the pandemic in the work of the banking sector.

To analyze the impact of psychological distress due to COVID-19 infection risk on the performance of bank employees, a sample of 214 employees was collected from commercial banks in Pakistan. The findings of the study revealed that psychological distress due to COVID-19 infection risk had a significant negative impact on bank employee performance. The author also noted that e-banking significantly moderated the psychological distress posed by infection risk.

In order to manage the employee performance and customer satisfaction, the author suggested a few policy options that can be instrumental in this case. He suggested promoting e-banking services by giving benefits and discounts to customers through e-banking. Awareness should be provided to customers through media about the benefits of e-banking, especially in the time of a pandemic. Special training should be

provided to bank employees to deal with customers without losing their loyalty during such testing time.

Converging Environmental Necessities and Energy Requirements

The global pandemic has negatively affected Asia, which is the world's largest economy and energy consumer. To a varying extent, the economies in the CAREC region have experienced slowdowns, recessions and/or contractions, as a result of their lockdowns and imposed restrictions on economic and social activities as well as those of their trading partners. The pandemic has signified the danger of the worsening global warming and climate change and the urgency of shifting from the current carbon-intensive economy to a low-carbon and, eventually, zero-carbon arrangements, claims Hooman Peimani of Leiden University, the Netherlands.

The mentioned shift in the CAREC region demands replacing oil, gas, and coal as the main source of energy with sustainable alternatives. Hence, it is necessary to develop the regional production capacities to supply the region with green energy, i.e., renewable, nuclear, and potentially hydrogen. Developing the region's renewable energy and nuclear sectors is not only a necessity for reducing its greenhouse gas (GHG) emissions, but also an available means for revitalizing its economy, the author argued.

Efforts to develop the CAREC region's production of environmentally clean renewable energy (e.g., wind, solar and small hydro) can certainly boost the regional economy, which is damaged heavily by the pandemic. Such efforts, if wisely made, will involve a wide range of industries from mining to manufacturing. Producing hydrogen for fuel cells, not through methane steaming ("grey" or "blue" hydrogen), but from electrolyzing water with green electricity ("green" hydrogen) could be another option for expanding the range of countries who can adopt alternatives to fossil energy.

The author highlighted that developing and expanding renewable and nuclear energy sectors in CAREC, also hydrogen production capacity and their respective bus/truck engines and electric vehicles, could not only help the region stop and eventually reverse global warming as an environmental and economic imperative, but also help revitalize and potentially expand its economy after a period of the pandemic-imposed contraction.

Impact of COVID-19 on SME in Central Asia: Coping Strategies & Gov-t Policies

Falendra Kumar Sudan, University of Jammu, India, has analyzed how SMEs in Central Asia have been affected by the COVID-19 pandemic and explored the coping strategies adopted by SMEs in the region. Describing the role of governments' policies and stimulus measures to support SMEs to cope with the pandemic, the author has

drawn policy options for resilient, inclusive and sustainable SMEs in the region. The research showed that SMEs in Central Asia have been affected through both internal factors (such as lockdown-induced business disruptions, lower consumption and impact on the economy) and external factors (such as volatile international market prices, border closures and trade restrictions).

The author highlighted that SMEs and policymakers were shifting their focus to post-pandemic new normal economy; therefore, SMEs should adapt to this new normal economy spurred by governmental incentives. Governments can support SME resilience by providing investment subsidies in risk mitigating technologies, trade diversification and regional economic integration.

Further, the paper suggests that employment creation and/or retention should be considered as an additional criterion for financial support to SMEs. Export promotion and trade facilitation efforts should be the basis of cheap credits to SMEs. Greater formalization of labor standards, contracts, job safety, technical regulations of domestic and export markets, also sanitary and phytosanitary measures should be mandatory for extending government support to SMEs. There is a necessity to invest in skills training as well. Long-term economic recovery through support promotion requires high competitiveness, economic diversification, and reduction in resource dependence. The author concluded that all these policy measures require robust cooperation and regional integration along with substantial aid and support from international financial institutions.

RESEARCH PARTNERSHIPS AND OUTLOOK

Research Partnership Dialogue

Partnerships play a critical role in building resources and capacity gaps for young organizations. Partnerships inevitably help create synergies for institutionalizing joint research and capacity building projects by pooling institutional and technical resources. Successful partnerships build on continuous, mutual and long-term commitment to create value addition to all partners rather than having one time, one-sided and sporadic interventions.

Partnerships with leading research and capacity building institutions in the region and beyond remain a crucial strategic objective for the CAREC Institute. The purpose of this session was herewith to present and discuss research and capacity building partnerships currently ongoing in the CAREC region and exchange on potential partnership perspectives.

The World Economic Forum

Presented by the representative of the World Economic Forum, Digital CAREC project is the collaborative work between the CAREC Institute, and the World Economic Forum started in 2021. In the context of ongoing pandemic, this project's relevance is truly high. Digitization is driving growth and there are increasing new opportunities, both directly in digital activities and horizontally across the economy. This became clearer due to COVID-19 – it was already happening, but now it has magnified the importance of digital economy, and competitive digital capacity. At the same time, there is a growing digital gap as some economies may not keep up with this. So, they may not even sufficiently leverage the potential. There is an opportunity to work with public and private stakeholders to address the gap and develop the full potential.

Hence, there are three reasons why Digital CAREC is important: 1. **New digital economy growth potential**, yet CAREC region has not yet fully benefited. Outdated regulations, insufficient digital infrastructure, and fragmented governance holding back potential; 2. **“Digital gap”** between economies in the region needs to be addressed for the region's full potential to be realized and to avoid any economies being left behind; 3. **Stakeholders** can come together, define critical issues, develop policy recommendations, and champion solutions for implementation at regional and country levels.

The Digital CAREC project is to be implemented in collaboration with the CAREC Institute and has three pillars of activities – (i) Digital FDI; (ii) Digital Payments; (iii) E-commerce. These three pillars are mutually reinforcing and integrated. These pillars

are to be implemented through three phases: gap analysis, policy recommendations, and 4IR Trade Tech Governance.

Partnership with UNICEF

In 2020-2021, the CAREC Institute and UNICEF implemented a joint research on sustainable water and sanitation systems in rural areas of Tajikistan, Uzbekistan, Mongolia, and the PRC. The project goal was to prepare research findings for key stakeholders on the topic, prepare advocacy plan for promoting the policy recommendations for CAREC countries, and project proposals for MDPs.

Hence, joint efforts with partners are to meet the concerns of the vulnerable people in the region. From the CAREC Institute perspective, knowledge generation and development of policy recommendations for CAREC members is critical. UNICEF, in its turn, focuses on promotion of South-South cooperation, promoting WASH program, attracting human and financial resources for the vulnerable.

The project analyzed the WASH supply chain and investment, as well as enhanced the South-South knowledge sharing and application of efficient technologies.

Planned future cooperation between the CAREC Institute and UNICEF:

- 1) Develop tools and policies for increasing the access of most unserved rural communities and populations to community-based WASH systems.
- 2) Set a model (exemplary and disseminatable case system) on increased healthcare for the disadvantaged communities through increased access to water supply, sanitation, hygiene, power supply, including renewable energy sources and appropriate waste management.
- 3) Establish a system for knowledge exchange and capacity building to support the development of WASH systems in CAREC countries through collection and dissemination of the best practices and know-how on WASH.

CAREC Institute - ADBI Partnership

The CAREC Institute has established a long-term collaboration with the Asian Development Bank Institute (ADBI). The first CAREC Institute research conference was also organized in cooperation with ADBI. The collaboration counts many successful projects in the past, also a number of future initiatives, to name just few:

- 1) Book project titled Developing Infrastructure in Central Asia: Impacts and Financing Mechanisms
- 2) Research collaboration titled Determinants of the Export Performance of SMEs in Kyrgyzstan

- 3) Research collaboration titled Leveraging SME Finance through Value Chains in CAREC Landlocked Countries
- 4) Joint workshop on trans-Caspian transport corridor: infrastructure and trade

Some joint initiatives include:

- 1) Analyzing infrastructure impact in Asia through big data
- 2) Women and online marketplaces in developing economies in Asia
- 3) Climate-smart agriculture, productivity and food security: farm household-scale survey in Central Asia

CAREC Institute - PIDE partnership

Established by the government of Pakistan in 1957, the Pakistan Institute of Development Economics (PIDE) is a research institute which combines research and academic activities. Since 2010, PIDE awards degrees as well. Since 2013, PIDE has been the number one think tank in Pakistan and among the top ten research institutions of Asia in terms of production quality in the field of economics. As a think tank, PIDE acts under the Planning Commission of Pakistan.

PIDE's core functions include advising the government of Pakistan through policy-oriented research on critical economic and developmental issues and conducting theoretical and applied research on policy formulation and its impact.

With similar mandates, there are many avenues to tap through joint collaboration between PIDE and CAREC Institute. From research production and knowledge sharing through joint events. Exchange of researchers and fellows on short-term placements can be departing points of future joint activities of the two organizations following the recently signed memorandum of cooperation between the two.

CAREC Institute Research Partnership Matrix

The CAREC Institute's research and capacity building activities are aligned with the CAREC 2030 Strategy and its priority clusters. The mission of the organization lies in providing effective knowledge support to the CAREC Program's thematic areas via systemized and structured research, capacity building, and knowledge management. By connecting research and policy formulation in CAREC countries, the CAREC Institute aims to produce research products of decent quality to underpin evidence-based policy making for promoting regional economic cooperation and integration for sustainable development.

The CAREC Institute constantly builds partnerships with the leading think tanks and research institutes of the CAREC region and beyond to bridge the knowledge gap and

facilitate knowledge exchange by stimulating joint research activities and development of knowledge products.

In this context, the Institute has created various platforms which help implement its mission: CAREC Think Tanks Development Forum (CTTDF), Visiting Fellow Program (VFP) and the CAREC Institute Research Conference (RC). Through these research platforms, the CAREC Institute stimulates new partnerships for joint research works and capacity building.

In developing research partnerships, the institute prioritizes and aims at the following outputs:

- Strategic institutional partnerships, which will help conduct joint research activity contributing to priority clusters of 2030 strategy with prominent research institutes systematized through memorandum of understanding.
- New joint research initiatives to be able to devise responses to the contemporary challenges and trends across sectors.
- Partnerships for joint resource mobilization and participation in international research tenders.
- Holding international conferences/seminars and capacity building activities.
- Contributing/setting up new research products, e.g., publications, databases of CAREC that will allow to close the knowledge and data gap.

Outlook for Research in the CAREC Region in the post-COVID Period

The purpose of this panel discussion was to outline long-term research outlook by identifying priority research areas for the future in the CAREC region to promote impactful regional policy implementation grounded in research. With the participation of prominent experts of ADB, ADBI, SDPI and the CAREC Institute, the panel has charted research pathways for better economic recovery.

The CAREC Institute acts as a knowledge connector among the five CAREC themes – economic and financial stability; trade, tourism, and economic corridors; infrastructure and economic connectivity; agriculture and water; human development – to ensure coherence in design and implementation of policies, programs, and projects to promote regional economic cooperation and integration. While building back, immediate focus of most countries in the region will be on economic recovery and development. Therefore, CAREC countries are expecting the evidence-based, policy relevant and innovative solution to tackle these challenges. This discussion was dedicated to identifying those ways and policy options to build more resilient economies.

The panelists suggested a number of concrete research activities to be undertaken to ensure that pressing issues of the region are addressed through viable and evidence-based research outputs. By reflecting upon the key takeaways from the conference for two days, the discussion evolved around two questions that unpacked how we can move forward in research in the CAREC region. The following perspectives have emerged from discussion vis-à-vis those two questions:

1. What do you regard as the most pressing research questions for the CAREC region in the post-COVID-19 period?

- a) **Data issue** is key to advance research and policy activities in the post-pandemic world. As the pandemic has shown, transdisciplinary data, integrating economic and epidemiological datasets, will be instrumental for making economic forecasts in the future. A mechanism for regional data exchange would herewith help with immediate and effective reaction to cross-border challenges.
- b) **Regional cooperation and integration.** In order to respond more rapidly to a crisis imposed by the pandemic and leverage emerging opportunities fully, there is a need for more integration and interstate cooperation. Stronger integration can be a key pillar for the post-pandemic recovery. If in the pre-pandemic period, G2G arrangements were the mainstream, studying B2B engagements and case studies can be an important research to start in the post-pandemic world. It is equally important to zoom in on economic and industrial policies – how they could be aligned better with each other and across the region. Also, trade and regional integration are important to upgrade the quality of trade to encourage participation in value chains and move up the value-added ladder.
- c) Accelerated by the pandemic, **technological change**, which includes digitalization and greening, becomes urgent. Smart diversification and finding niches for production and exports will become more urgent. What can CAREC countries do to usher the technological change?
- d) More than 30% population of the CAREC region is employed in **agriculture**. The way agriculture is managed in the region is not sustainable, particularly in the context of climate change. It can be a big issue how to move forward. There is a need to decarbonize and support both **mitigation and adaptation policies** and reach **carbon neutrality by 2050**. What kind of policies would be necessary to achieve this kind of transformation? How to make green growth happen? Green growth does not mean a weaker growth. Analytical work on this topic would be a good area to focus on.
- e) The area of **digital transformation** – particularly financial digital transformation – as it also affects SMEs is very important. As digital financial literacy and access are uneven between men and women across the region, gender aspect of the matter can also be another important topic for research. Equally important aspect of this theme is data privacy.

- f) Macroeconomic policy management and **debt management** issue, highlighted in the conference, could include both public and private debt.
- g) Nexus could be developed between **capital market development** and infrastructure financing. Infrastructure needs are very large. The key question is how to make financing more attractive for the private sector to augment the capacity of the public sector.
- h) Expanding **CPMM data collection** will provide an opportunity to conduct original research with the field data to explore trade facilitation issues.

2. How can we make sure that research is more impactful, viable and helps shape policies?

- a) The way information is compiled, and the way people consume information is very different today. Audio and video dissemination is becoming more prominent, e.g., TikTok. So, innovative ways of knowledge dissemination can help deepen research on policymaking and overall societal development.
- b) Raising the quality of research can be helpful to increase the impact on policymaking. Research projects which crosscut across various CAREC countries and sectors can have more influence on policymaking.
- c) Research conference should be annual and is a good platform to bring researchers from the region and this could serve to increase the number of joint projects. Another idea relevant to this point would be to establish a regional journal. The CAREC think tanks network could be used for promoting such project in the CAREC region.
- d) Think-tanking as an institution is very new to the CAREC region. A supportive think tanking ecosystem should be in place in order to make think tanks develop as knowledge brokers throughout the region and sectors of economy. The right ecosystem would allow to create a demand-driven mechanism for the work of think tanks. For instance, the CAREC Institute is best placed to have a quick needs assessment. A consolidated needs assessment can become a strategic research agenda for the medium term.
- e) Investing in policy engagement tools available at CAREC as well as in associated think tanks can be key to strengthen a bridge between researchers and policymakers. Parliamentarians or civil servants of CAREC member countries need to understand how they can bank on our capacities, how they can demand inputs from think tanks. For example, in Pakistan, civil servants are not even informed of think tanks and their research capacity. There is an information gap.
- f) Another way to increase the impact of research on policymaking and refine policy engagement would be to learn from best practices and examples from other countries/regions.

WAY FORWARD

As the next step, the planned CAREC Institute annual book is to be published as a knowledge product of the event, which will include selected papers. From research and policy perspectives, the conference suggested the below intervention areas and recommendations derived from presented papers of the four thematic sessions that could help shape policy actions and research activities supporting the resilient recovery.

Digital CAREC and Post-Covid Economic Recovery in the CAREC Region

- Investment in development of ICT infrastructure for improving productivity of the country's workforce is an important area of policy action.
- Developing countries with limited fiscal space will need to prioritize resources to target highest impact areas.
- CAREC members need to focus on building their fintech foundation; bolstering the ICT and digital infrastructure ensuring regulatory quality and enhancing required capabilities to advance inclusive trade and finance.
- Investing in building up digital capacity for tax authorities especially as a pre-condition for collaborating with e-commerce platforms in tackling the shadow economy, and introduction of the digital service tax based on the harmonized regional model.

Regional Integration and Macroeconomic Dynamics

- Pakistan should improve the energy production system, establish energy cooperation in digital financial services, explore the energy financial system with capital market participation and promote the driving effect of the energy industry on the economy.
- There is a need to create an investment-friendly environment in CAREC for effective debt management and financial sustainability.
- ASEAN is seen as a potential economic partner for Kazakhstan to diversify foreign relations and lessen dependence on a single or few stakeholders. The pandemic is unlikely to diminish this trend and only serve to reinforce Kazakhstan's need to search for new partners in ASEAN.

Tourism Sector in Times of High Uncertainty

- The stock market regulators in the tourism industry must incorporate coordinated and combined policies so that abnormal fluctuations in the tourism stock returns can be removed.
- It was highlighted that COVID-19 pandemic became a trigger to reassess the role of informal settlements in sustainable urban development.

- Regional tourism in the CAREC region should be promoted.
- Increasing role of technology in promoting safe tourism was highlighted and recommended.

Enterprise and Industry

- There is a need to focus on the impact of COVID-19 on SME performance in Central Asia from the industry perspective.
- SMEs and policymakers are shifting their focus to the post-pandemic new normal.
- The new normal will push restructuring and transformation of the economy encouraging the state to diversify and open up for more renewable energy sources taking advantage of the revenues.
- E-banking services should be promoted by giving benefits and discounts to customers through e-banking.

CONCLUSION

Looking towards the coming decade of the post-pandemic world, CAREC countries will face economic and social challenges of various scope and magnitude as the crisis will cast a long shadow on sectors of economies. The complexity of the associated challenges lies in the fact that they are interlinked and have knock-on effect on one another. As was demonstrated throughout this conference. The crisis holds profound lessons for CAREC countries on sustainability and future recovery.

To draw on those lessons and leverage opportunities, while minimizing pertaining risks, the CAREC region could consider a few factors that will be affecting the economic recovery and resilience to crisis in future. The first essential factor is **the importance of regional cooperation**. Contemporary challenges, like global pandemic and climate change, which have dire consequences for economies and societies, transcend state borders. They can be addressed effectively and quickly through joint efforts of regional scale.

The second trend is the ability and willingness of countries to **accelerate digital transformation**. Only by harnessing the power of digital technologies, countries can expedite effective recovery and strengthen their resilience. Unprecedented health crisis and a global economic shock caused by COVID-19 has demonstrated the significance of digital technologies for quick exchange of data and information across sectors and countries, and also for keeping many businesses operational.

Closing the missing link between **evidence-based research outputs and policymaking** is the third factor that affects long-term economic recovery and resilience. In order to develop better understanding of contemporary and future challenges, evidence and fact-based research products contributing to decision-making should be available and taken into consideration.

All insights discussed at the conference made clear that the impact of COVID-19 and its challenges will not dissipate overnight. Providing feedback to the questions and points raised throughout the sessions of the conference could be the next step.

CONFERENCE AGENDA

Time	SESSIONS
DAY ONE – 04 March 2021	
OPENING SESSION Chair: Mr Ziqian Liang , Deputy Director One, CAREC Institute	
Time (Beijing time) 10.45 – 11.00	Thematic videos to be screened
Time (Beijing time) 11.00 – 11.45	<p>1. Opening Remarks (6 mins each). Mr Syed Shakeel Shah, Director, CAREC Institute Dr Tetsushi Sonobe, Dean and CEO, Asian Development Bank Institute (ADBI) Mr Safdar Parvez, Director, Regional Cooperation and Operations Coordination, Central and West Asia Department, Asian Development Bank (ADB)</p> <p>2. Introductory Notes of the CAREC Institute Research Conference and Annual Book (7 mins) Dr Qaisar Abbas, Chief of Research Division, CAREC Institute</p> <p>3. Keynote address (20 mins) Prof Dr Richard Pomfret, Professor of Economics at the University of Adelaide</p>
Time (Beijing time) 11.45 – 11.55	Short break (10 mins)
Session one: Digital CAREC and post-COVID-19 economic recovery Chair: Mr Ziyang David Fan , Head of Digital Trade, World Economic Forum	
Time (Beijing time) 11.55 – 13.45	<p>Introduction and opening remarks by chair (5mins)</p> <p>1. Digital Transformation in Central Asia: Challenges and Lessons Learned from the Global Pandemic Mr Farrukh Khakimov, Development Strategy Center, Uzbekistan</p> <p><i>Discussant</i></p>

	<p>Dr Naoyuki Yoshino, Professor Emeritus-Keio University of Tokyo, Japan</p> <p><i>2. Improved health conditions and digital transformation: a post-Covid-19 analysis</i></p> <p>Mr Muhammad Zeshan, Consultant, The World Bank, Islamabad, Pakistan</p> <p><i>Discussant</i></p> <p>Ms Inez Mikkelsen Lopez, Health Specialist, ADB</p> <p>3. E-commerce Taxation in Central Asia: Current State and Opportunity for Reform</p> <p>Dr Nikolai Milogolov, PhD, Head of Laboratory of Tax Policy Research at the Institute of Applied Economic Research of the Russian Presidential Academy of National Economy and Public Administration (RANEPA), Russia</p> <p><i>Discussant</i></p> <p>Dr Minsoo Lee, Senior Economist, Regional Cooperation and Operations Coordination, Central and West Asia Department, ADB</p> <p><i>4. Adaptability towards Teleworking Arrangements: Evidence from Pakistan</i></p> <p>Dr. Umer Khalid, Director Research, Policy Research, Innovation, Development and Education (PRIDE), Pakistan</p> <p><i>Discussant</i></p> <p>Mr Daniel Suryadarma, Research Fellow, ADBI</p> <p>5. Financial Inclusion in the CAREC Region: Promoting Fintech to Meet Underserved Needs in Trade Finance</p> <p>Dr Minsoo Lee, Senior Economist, Regional Cooperation and Operations Coordination, Central and West Asia Department, ADB</p> <p><i>Discussant</i></p> <p>Mr Long Q. Trinh, Project Consultant, ADBI</p> <p>Q&A session (30mins)</p>
Time (Beijing time) 13.45 – 14.30	Health break (45 mins)

Session two: Regional Integration and Macroeconomic Dynamics Beyond COVID-19 Pandemic

Chair: Prof. Dr Saeed Akbar, Chair in Accounting and Finance, and Head of Accounting, Finance and Economics Research Centre, University of Bradford, UK

Time (Beijing time) 14.30 – 16.05	<p>Introduction and opening remarks by chair (5mins)</p> <p>1. <i>How Kazakhstan sees ASEAN and its member countries in a post COVID-19 new normal</i> Dr Alessandro Arduino, Principal research fellow MEI, National University of Singapore</p> <p><i>Discussant</i> Dr Dina Azhgaliyeva, Research fellow, ADBI</p> <p>2. <i>Pakistan's economic recovery and development in the post-epidemic era (Covid-19) - to explore the prospects of China-Pakistan energy cooperation</i> Lv Zhiping, Xinjiang University of Finance and Economics</p> <p><i>Discussant</i> Dr Ghulam Samad, Senior Research Officer, CAREC Institute</p> <p>3. <i>Impact of COVID-19 Pandemic on Pakistan & Central Bank Response</i> Mr Muhammad Moaiz Siddiqui, Deputy Director, Financial Stability Department, State Bank of Pakistan</p> <p><i>Discussant</i> Mr Ulrich Volz, Director of the Centre for Sustainable Finance, University of London</p> <p>4. <i>COVID-19 and Debt Sustainability in the CAREC Region</i> Dr. Naseem Faraz, Pakistan Institute of Development Economics</p> <p><i>Discussant</i> Dr John Beirne, Research Fellow, ADBI</p> <p>Q&A session (30mins)</p>
16.05 – 16.15	Recap of the first day by Dr Qaisar Abbas , Chief of Research Division, CAREC Institute

DAY TWO – 5 March 2021

Session three: Tourism Sector in Times of High Uncertainty Chair: Dr Qaisar Abbas, Chief of Research Division, CAREC Institute

Time (Beijing time) 10.45 – 11.00	Thematic videos to be screened
Time (Beijing time) 11.00 – 12.10	<p>Introduction and opening remarks by chair (5mins)</p> <p>1. <i>COVID-19 Impact on the Sustainable Development of Cities of Central Asia: The Case Study of the Capital City of Afghanistan</i> Ms Madina Junussova, Research Fellow, Institute of Public Policy and Administration, University of Central Asia, Kyrgyzstan</p> <p><i>Discussant</i> Mr Ayoob Ayoobi, Chief of Capacity Building Division, CAREC Institute</p> <p>2. <i>Recovering from the Impact of the COVID-19 Pandemic on the Tourism Industry in the Central Asia Region</i> Mr Nam Foo, Research Associate, School of Business and Law, Edith Cowan University, Perth / Lecturer, Curtin University, Perth, Western Australia</p> <p><i>Discussant</i> Mr Matthias Helble, Senior Economist, ADB</p> <p>3. <i>Network Analysis of Tourism Stocks During COVID-19 Pandemic: An Evidence from CAREC Region</i> Mr Faheem Aslam, Department of Management Sciences, Comsats University, Pakistan</p> <p><i>Discussant</i> Mr Sanjay Saxena, Managing Director, Total Synergy Consulting, India</p> <p>Q&A (20mins)</p>
Time (Beijing time) 12.10 – 12.20	Short break (10mins)

<p align="center">Session four: Industries and Enterprises for Restart and Recovery Chair: Dr Dina Azhgaliyeva, Research Fellow, ADBI</p>	
<p>Time (Beijing time) 12.20 – 13.50</p>	<p>Introduction and opening remarks by chair (5mins)</p> <p>1. <i>Impact of the COVID-19 pandemic on Small and Medium Enterprises in the CAREC Region</i> Dr Brendan Duprey, Director of SKRI at Narxoz University, Kazakhstan</p> <p><i>Discussant</i> Dr Ranjeeta Mishra, Project Consultant, ADBI</p> <p>2. <i>Analysis of COVID-19 Pandemic's Impacts on Azerbaijan's Oil Industry: Policy Lessons in Hard Times</i> Dr Ulviyye Aydin, Assoc. Prof. Dr. Manisa Celal Bayar University, Department of Political Science and International Relations, Turkey</p> <p><i>Discussant</i> Dr Kamalbek Karymshakov, Economist, Chief Economist Group, CAREC Institute</p> <p>3. <i>Impact of psychological distress due to COVID-19 risk on bank employees' performance: Moderating effect of e-banking services</i> Mr Waheed Ali, School of Economics and Finance, Xian Jiaotong University, China</p> <p><i>Discussant</i> Mr Khalid Umar, Chief of Strategic Planning Division, CAREC Institute</p> <p>4. <i>Converging Environmental Necessities and Energy Requirements: Producing Renewable Energy and Hydrogen for Economic Revitalization and Growth in the Post-COVID-19 Pandemic</i> Dr Hooman Peimani, Senior Consultant, International Institute for Asian Studies (IIAS) and Energy Programme Asia, Leiden University, the Netherlands</p> <p><i>Discussant</i> Mr Rovshan Mahmudov, Senior Capacity Building Specialist, CAREC Institute</p> <p>Q&A (25mins)</p>

Time (Beijing time) 13.50 – 14.30	Health break (40mins)
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Special session: Research Partnership Dialogue Chair: Mr Khalid Umar , Chief Strategic Planning Division, CAREC Institute	
Time (Beijing time) 14.30 – 15.30	<p><i>Opening and Setting the Stage by chair</i></p> <p>1. Digital CAREC Ms Yan Xiao, Project Lead-Digital Trade / Digital Payment, World Economic Forum</p> <p>2. WASH project Mr Dang Haipeng, Chief of Knowledge Management Division, CAREC Institute</p> <p>3. ADBI/CAREC Institute Joint Book on Infrastructure Development in Central Asia Dr Dina Azhgaliyeva, Research Fellow, ADBI</p> <p>4. PIDE/CI partnership on Debt and Financial Sustainability in the CAREC region Dr. Ghulam Samad, Senior Research Officer, CAREC Institute / PIDE representative</p> <p>5. CAREC Institute's Partnership Matrix presentation Mr Shakhboz Akhmedov, Senior Research Fellow, Knowledge and Research Networking, CAREC Institute</p>
Time (Beijing time) 15.30 – 15.40	Short break (10mins)

PANEL DISCUSSION & CLOSING SESSION Chair: Dr Iskandar Abdullaev, Deputy Director Two, CAREC Institute	
Time (Beijing time) 15.40 – 16.40	PANEL DISCUSSION: Outlook for Research in the CAREC Region in a Post-COVID-19 period Ms Lyaziza Sabyrova , Senior Regional Economist, ADB Dr Peter Morgan , Vice-Chair for Research, ADBI Dr Hans Holzhacker , Chief Economist, CAREC Institute Dr Vaqar Ahmed , Joint Executive Director, Sustainable Development Policy Institute (SDPI), Pakistan
Time (Beijing time) 16.40 – 17.00	CLOSING SESSION 1. Report of the conference and future perspectives Dr Qaisar Abbas , Chief of Research Division, CAREC Institute 2. Closing Remarks Mr Syed Shakeel Shah , Director, CAREC Institute

CAREC INSTITUTE



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