



**CAREC Institute**

**Workshop Report**

**Unlocking Private Investments in Sustainable Infrastructure in Asia:  
Lessons from Central Asia**

**23, 24, 30 September, 1 October 2020**



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This report is one of the outputs of the virtual workshop titled “Unlocking Private Investments in Sustainable Infrastructure in Asia: Lessons from Central Asia.” The CAREC Institute in partnership with the Asian Development Bank Institute (ADBI) delivered the workshop during 23, 24, 30 September, 1 October 2020. The overall aim of this policy workshop was to bring together authors of the selected papers and member country senior officials and leading experts of the field to exchange knowledge, expertise, best practices and to promote regional cooperation by exploring a holistic and collective way forward in unlocking private investments for sustainable infrastructure development.

The report is drafted by Ms. Dildar Zakir, Capacity Building Specialist, and Mr. Rovshan Mahmudov, Senior Capacity Building Specialist, with contribution from Gary Huang, the CAREC Institute. It is edited by Mr. Eisa Khan Ayoob Ayoobi, Chief of Capacity Building Division of the CAREC Institute. Dr. Nella Hendriyetty, Senior Capacity Building and Training Economist, ADB Institute, Derek Hondo, Research Associate, ADB Institute, and Misuzu Nakamura, Administrative Assistant, ADB Institute, have contributed to the report.

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Central Asia Regional Economic Cooperation (CAREC) Institute  
No. 376 Nanchang Road, Urumqi, Xinjiang, the PRC  
f: +86-991-8891151  
[LinkedIn](#)  
[km@carecinstitute.org](mailto:km@carecinstitute.org)  
[www.carecinstitute.org](http://www.carecinstitute.org)

## Abbreviations

ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
ASEAN	Association of Southeast Asian Nations
CAREC	Central Asia Regional Economic Cooperation
CI	CAREC Institute
COVID	Corona Virus Disease
DDA	Delhi Development Act
DID	Difference-in-Difference
EBRD	European Bank for Reconstruction and Development
EDI	Energy Development Indicator
ESG	Environmental, Social and Governance
FDI	Foreign Direct Investment
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Global Greenhouse Gas
LCR	Low-Carbon and Climate-Resilient
LDS	Local Developmental State
LNG	Liquefied Natural Gas
PCI	Per Capita Income
PDF	Project Development Facility
PPI	Private Participation in Infrastructure
PPP	Public Private Partnership
PRC	People's Republic of China
SDG	Sustainable Development Goals
SME	Small and Medium-sized Enterprises
TOD	Transit Oriented Development
UN	United Nations
UNDP	United Nations Development Program
UNECE	United Nations Economic Commission for Europe
VAT	Value Added Tax
VGf	Viability Gap Fund

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## Introduction

Sustainable development is anchored by the triple bottom line of environmental conservation, economic prosperity, and social equity (Campbell, 1996). Putting these broad concepts in the context of infrastructure, sustainable infrastructure is defined as systems that have the capacity to endure over a long period of time; enabling the human-built environment to thrive and providing an opportunity for human society to improve its quality of life, without compromising the integrity and availability of natural, economic, and social assets for future generations (Hendricks et al. 2018).

Sustainable development is the strategic focus of the Central Asia Regional Economic Cooperation (CAREC) Program 2030.

According to the Asian Development Bank (ADB), Asia needs to spend \$26 trillion from 2016 to 2030, or \$1.7 trillion every year during this period on infrastructure. Of this amount, nearly one-half is needed for the power sector alone. Given the rising pressures on fiscal resources of the public sector in most countries, it is essential to develop alternative sources of investment. This is where the private sector can play an instrumental role through the development of stronger and more transparent public-private partnerships to incentivize sustainable infrastructure investment. By tapping into private sector financing, Asian countries can help minimize the funding gap.

Given the need for such significant amounts and the lack of public financing, it is critically important to attract private financing for infrastructure investment. Unlocking private investment would require innovative schemes to address concerns, namely: improved public-private partnerships (PPP); financial guarantees; and/or utilization of the spillover effect of infrastructure by returning part of additional tax revenues to the investors to increase the rate of return (Taghizadeh-Hesary and Yoshino, 2019).

The Asian Development Bank Institute (ADBI) and the Central Asia Regional Economic Cooperation (CAREC) Institute launched a call for papers on “Unlocking Private Investment for Sustainable Infrastructure in Asia” in November 2019, and as of now 15 selected research papers have been finalized and compiled in a book scheduled for release in the second half of 2021. The overall aim of this initiative was to put together a comprehensive knowledge product in the form of a handbook on innovative schemes and lessons learned in attracting infrastructure investment throughout the Asian regions with emphasis on Central Asia. In addition, the organizing parties envisioned this virtual policy workshop where authors received peer reviewed feedback and interacted with leading CAREC experts on the region’s ongoing efforts of attracting private investment for sustainable infrastructure.

More than 100 senior government officials and experts from across the CAREC region and beyond participated in this virtual workshop. Presentations were made covering various topics, with extensive Q&A sessions. The workshop received very positive feedback from the participants, with follow-up actions planned to build on the strong foundations laid.

The workshop was based around two sessions per day for four days – with each day consisting of three hours of training. Representatives from the CAREC Institute and ADBI chaired sessions in turn to keep the workshop as interactive as possible.

## Welcoming and Opening Remarks

**Dr. Iskandar Abdullaev**, Deputy Director of the CAREC Institute, opened the workshop by welcoming all participants and stressing the importance of unlocking private investments in development of sustainable infrastructure in the CAREC region. He quoted the ADB special report on sustainable infrastructure (2017), “Developing Asia will need to invest \$26 trillion from 2016 to 2030, or \$1.7 trillion per year, if the region is to maintain its growth momentum, eradicate poverty, and respond to climate change (climate-adjusted estimate).” Also, he mentioned that ADBI and the CAREC Institute recognize the critical need for analysis and recommendations of best practices for the Central Asian countries through empirical research on various aspects of unlocking private investments in sustainable infrastructure. He described that the CAREC Institute and ADBI initiated a call for papers on this subject in November 2019 and held a videoconference in March 2020 to share preliminary research findings.<sup>1</sup> He said that during this four-day workshop around 20 speakers are invited to speak and present research findings originated from chapter manuscripts of the book.

**Ms. Lyaziza Sabyrova**, Principal Regional Economist, Regional Cooperation and Operations Coordination Division, Central and West Asia Department of ADB, was first to deliver her opening remarks. She said that most of ADB lending is in infrastructure, particularly in transport, energy, water infrastructure, urban water supply and sanitation, urban infrastructure, and others in the CAREC region. She urged the participants from CAREC countries to consider incentives for investments, enabling regulatory frameworks, transparency, and open competition policies for unlocking private investments. She expressed delight for such an important workshop and wished this event help all stakeholders working on infrastructure projects gather takeaways from expert discussions.

**Dr. Tetsushi Sonobe**, Dean and CEO ADBI was second to deliver the opening remarks. Dr. Sonobe thanked co-organizers for putting together a comprehensive and timely research-based workshop and welcomed the presenters for their valuable contributions to the book. He expressed confidence that the workshop will be rewarding and will help explore various innovative ways of unlocking private investments in Asia.

**Mr. Syed Shakeel Shah**, Director of the CAREC Institute delivered the last opening remarks by welcoming all participants to the virtual workshop. He highlighted the importance of investment in sustainable infrastructure and emphasized that sustainable development was, beside other aspects, a triple bottom line of environmental conservation, economic prosperity, and social equity. Similarly, sustainable infrastructure is viewed as a multilayered structure with the responsive capacity to the present and future needs of societies over the long period of time without compromising the integrity and availability of natural resources for future generations.

Director Shah said that through such infrastructures, we can thrive and are able to mitigate the impacts of climate change while pursuing and providing socio-economic and sustainable development opportunities to our communities and improving our people’s quality of life and freeing them from the menaces of poverty. Sustainable development has been the strategic focus of the Central Asia Regional Economic Cooperation (CAREC) Program strategy 2030. Under this strategic outlook, the CAREC Institute has been leveraging efforts with all implementing partners to support member countries in sustainable infrastructure development in various sectors. For instance, among other sectors, water and agriculture are in immediate need for upgrading the infrastructure. The climate-adjusted investment needed for such infrastructure requires various innovative schemes to attract investment.

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<sup>1</sup> March 2020 was initially marked for the book launch in a face-to-face event but had to be postponed and replaced by a videoconference due to outbreak of the coronavirus. In that virtual event, only the findings of three papers were discussed.

Director Shah went on to highlight the CAREC Institute's earlier research projects on climate change where water scarcity and food security were found as areas of concern for the CAREC region, which is experiencing higher rate of temperature rise compared with other regions. He accentuated that tackling the issue of water scarcity, judicious and farsighted governance and management of water resources is needed to ensure food security and sustainable economic growth. Any water management efforts require appropriate and sustainable infrastructure that entails large amount of investment that governments alone cannot provide on their own.

Director Shah also underlined that the CAREC Institute along with ADBI initiated a call for papers – inviting renowned global scholars of the field to conduct empirical research, based on which and in consultation with member country experts, explore a collective way forward on this front. He concluded his opening remarks by expressing delight for having leading scholars and country experts to present their research findings and more importantly recommending innovative ways or schemes of unlocking private investment for sustainable infrastructure – through expert discussion with country representatives and development partners.

## Keynote Address: Day 1

Subsequently, keynote address of the workshop was made by **Dr. Ramin Jahanbegloo**, Global Intellectual, Director, Mahatma Gandhi Centre for Peace and Nonviolence, and Vice Dean of School of Law, Jindal Global University. He highlighted the importance of citizen trust and public-private partners in the development of sustainable infrastructure. He pointed out that a mechanism that builds and maintains strong cohesion between social, political, and economic institutions is trust. He underlined that the high level of social capital and political trust can succeed citizen-state-economy (public-private) negotiations. Trust ensures that there is constructive engagement among all three spheres – actors of different spheres get incentivized to participate in socio-economic and political processes to achieve their collective common ends.

Dr. Jahanbegloo also highlighted that trust in social and political institutions is considered critical for the viability of good governance. He referenced an index that incorporates the degree of trust citizens of a country have in the primary institutions of the state, including the economic and investment mechanisms to measure political trust. Trust is, therefore, considered critical for a citizen-state relationship and as a trend towards good governance. Trust is the backbone between a nation and its government. He warned that tensions could arise between infrastructure developers and landholder interests in the absence of trust between governments and households.

However, in the case of a sustainable development project, which is based on a relation of “trust” between the landowners and the government, prospects for a win-win social dialogue seem more feasible. He gave the example from a recent study (2018) done by Naoyuki Yoshino, Saumik Paul, Vengadeshvaran Sarma and Saloni Lakhia for ADBI, entitled “Land Acquisition and Infrastructure Development through Land Trust Laws: A Policy Framework for Asia.” Based on that study, “it takes about 4 years to acquire land through various negotiations followed by a construction period of 5 years, after which landowners start enjoying the spillover benefit from an increase in tax collection.” Professor Jahanbegloo reiterated that the element of “trust” is crucial in such a process that provides regularity of land rent. Once the element of “trust” is inscribed in the model, the landowners would accept to invest their lands for an infrastructure project. However, the process of “trust” between the citizen and the government would not take place automatically without uplifting levels of social capital.

Professor Jahanbegloo also described the role of civic education, which includes adult learning for social, political, and economic engagements and responsibilities to uplift the citizen's consciousness

concerning national interest and good governance. Informed citizens perform the tasks necessary for organizational and developmental involvements, including the critical ability to interpret the social and political information beyond all levels of mistrust.

Professor Jahanbegloo further elaborated the linkage between civic education and organizational and industrial engagement that is abandoned by those governments and political leaderships which have no faith in the power of “trust” in promoting good governance. Civic education is also embedded in the structure of relations between private interests and public interests. In response to this shortcoming, community needs to focus more often on norms and networks that could facilitate coordination and cooperation between a state, citizens, and economy for mutual benefits.

Professor Jahanbegloo said of the democratic communities, where there is a higher level of social trust, varied levels of civic consciousness showed that one could expect more engaged citizen participation in community development and governmental projects that share norms of civic responsibility and social commitment. Therefore, civic trust is valuable when it is accompanied with transparency and accountability structures requested by the citizens and offered by the governments.

Also, according to Professor Jahanbegloo, focusing on the civic capacities and economic dispositions of the citizens in developing infrastructural projects should not obscure the important commitment of a state to social justice. Only commitment to justice-oriented citizenship can promote different practices of social trust in unlocking private investments in sustainable infrastructure development. That is why governments without trust, participation and cooperation of their citizens, walk on a slippery slope of economic development and are doomed for failure.

## Introduction of Book Publication

Then, **Dr. Bhajan Grewal**, (Co-Editor), a professorial fellow at the Centre for Strategic Economic Studies of Victoria University, Melbourne, Australia, and the Director of the Governance and Regional Economies Program, gave an editorial presentation to help authors of the chapters to structure their papers fittingly to the overall book structure. He stressed that this book would serve a very good purpose in terms of informing public servants, policy makers and politicians, creating an atmosphere which will be conducive to promotion of public-private and multi-organizational partnership to incentivize investment in sustainable infrastructure. The book consists of 15 chapters that cover specific topics and themes of various innovative ways of unlocking private investment in sustainable infrastructure.

According to Dr. Grewal, the book will highlight how investment in sustainable infrastructure increases productivity of land, labor, and capital. Investments in sustainable infrastructure help integrate the region and contribute to more economic productivities and prosperities through trade and innovation. Historically, infrastructure remains a public sector responsibility, but things have been shifting. Through public-private partnership, investment for sustainable infrastructure is increasing given the shift to sustainable development that is focusing on low carbon energy sources, environmental protection and climate-adjusted investment.

## Sessions 1 & 2: Assessing the Impacts of Investments and Future of Sustainable Infrastructure

**Mr. Chul Ju Kim**, Deputy Dean, ADBI, moderated the first session. He welcomed all participants and thanked authors for sharing their research findings and providing peer reviewed feedback and engaging with CAREC country experts. The session was comprised of presentations by two paper presenters and two discussants.

The first presenter was **Mr. Eugene Chao**, Faculty Research Associate, the Wharton Business School Finance Department, University of Pennsylvania. Mr. Chao presented his study on **“Infrastructure Investment and Managerial Oversight: A Pathway to Regional Growth.”**

**Mr. Chao** pointed out the two distinctive asset classes (highway vs. rail) and two sets of policies (car vs. transit). According to him, various investment schemes can achieve two different outcomes for governments and investors. However, he recognized the need for building synergies in infrastructure investment schemes at all levels to help redirect efficient resource allocation with the highest possible rate of return. He presented some case studies from Turkey, Luxembourg, Russia where progressive city planning has produced desired outcomes. His research findings indicated that Central Asian governments (i.e., Uzbekistan) are rethinking or repositioning their assets to privatize and change the mandates of state-owned enterprises. This has had an impact on investment schemes in sustainable infrastructure in Central Asia.

Mr. Chao put forward some pros and cons of privatization to draw lessons for Central Asian countries. He pointed out some advantages of a single public transit agency compared with multi-stakeholder agencies where various private operators are engaged in profit maximization. He listed the benefits of having unified management system that align various lines and networks of intermodal transit system into an integrated and consolidated platform that optimizes the service level and minimizes costs. The disadvantages were highlighted as suboptimal financial performance due to subsidies which lead to inefficiencies and deficits. He also highlighted the lack of competition and lack of motivation for innovation in the sector.

In conclusion, Mr. Chao underlined that we need to differentiate the investment scheme of asset recycling versus transfer and return on scale versus quality. Only then, national economies could lay stronger foundation for sustainable infrastructure investments that contribute to regional growth.

**Dr. David Roland-Holst**, Adjunct Professor at the University of California, Berkeley, was the second paper presenter – **“Transition Pathways for Central Asian Energy Infrastructure.”**

Dr. Roland-Holst’s research findings indicated that the conventional energy economy in the CAREC region is not the right solution to achieve the sustainable development goals and cannot meet the increasing energy demand of the region for the long-term. Therefore, the region should consider developing renewable energy technologies given that the region has wind and solar advantages to start breaking away from nonrenewable energy sources. Taking these into account, he underlined the need for public and private partnership to avoid the shortage of public capital in applying the new technologies and infrastructures for transporting the renewable energy in the region.

More specifically, Dr. Roland-Holst made three-staged recommendation for the CAREC region: 1) from high-carbon fuel exports and financing growth, transition to; 2) mid-carbon (by 2030) (natural gas and gas-fired electricity/hydrogen exports), financing new capacity for; 3) low-carbon (2040-50) renewable (solar and wind) electricity exports.

Dr. Roland-Holst concluded that energy exports like the export opportunities for the miracle economies that essentially expanded the opportunities for industrialization and growth on the basis of manufacturing exports, can perform the same function in the CAREC region. They can finance investment regionalization, integration and convergence, and consequently, more inclusive growth. Particularly, they will be creating opportunities for lower income countries which have rich endowments of renewables to realize their potential through collaborative regional investment and much stronger private sector participation. He recommended the regional energy sector transition take place by adapting the Energy Development Indicators (EDIs) under the UN Sustainable Development Goals (SDGs). According to Dr. Roland-Holst, this was the way to achieve wider development priorities.

**Dr. Iskandar Abdullaev**, Deputy Director of the CAREC Institute was the discussant for Mr. Chao's paper. Dr. Abdullaev started his discussant presentation by underlining the strengths of the chapter which states that infrastructure investment is a common scheme to boost economic productivity. He also said the chapter echoed a very important aspect of infrastructure investment and managerial oversight. The paper described the role of investment in boosting both GDP growth and the economic performance of the countries, as well as what will be a key decision-making structure for such investment.

Dr. Abdullaev recognized the meticulous work done by the author to establish and pinpoint linkages among various aspects of the infrastructure needs, technical elements, and reliable factors of the infrastructure operation maintenance. Also, the authors' ability to link operation efficiency of the infrastructure, technical and design elements. He, furthermore, praised the authors to provide in-depth theoretical background relevant to the topic. However, there are some weaknesses in Mr. Chao's paper, according to Dr. Abdullaev. While research results and findings are valuable, it seems to be too theoretical. Moreover, the author should provide sound recommendations to policymakers. At the same time, the decision-making structure and system discussed in the paper is mostly relevant to the developed or middle or high-income economies. As most of the CAREC economies are low income developing countries, they need different decision-making approaches to keep their economies and development pace agile with the compatibility to seize opportunities.

**Dr. Prabheesh Kaarattuparambil**, associate professor at the Indian Institute of Technology was the paper discussant. He provided peer reviewed feedback to Dr. Ronald-Holst. Dr. Kaarattuparambil believed the paper was comprehensive and analyzed the current status of the energy sector in the CAREC region. He believed the recommendations given in the chapter were straightforward and feasible to help CAREC countries undertake the needed reform.

In addition, paper presenters, discussants and other panelists engaged in expert discussions with leading CAREC experts. There were questions and answers to help the authors receive practical inputs to strengthen their chapters on the one hand and on the other to help CAREC countries update knowledge on new innovative ways of providing oversight on sustainable infrastructure projects in their respective countries.

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The second session was comprised of three research paper presentations, and was chaired by **Mr. Eisa Khan Ayoob Ayoobi**, Chief of Capacity Building Division, the CAREC Institute. Mr. Ayoobi made a brief moderation remark on assessing the impacts of investments and sustainable infrastructure and introduced the presenters and discussants and handed them the floor.

**Dr. Nicolas J.A. Buchoud**, Founding Principal of Renaissance Urbaine and Global Solutions Fellow, presented his study – **“Silk Road Smart Cities: Sustainability Drivers for Central Asia?”** He said that “Smart Cities - are typically linked with the quest of investment opportunities for the deployment of ‘new’ IT technologies to manage infrastructure and services.” Giving these advantages, he argued that the concept of “Smart City” is gaining attention in high-level political circles in CAREC countries namely, in Nur-Sultan in Kazakhstan and Tashkent in Uzbekistan, Bishkek in Kyrgyzstan and Ashgabat in Turkmenistan. According to him, these cities have started to apply or shown willingness to apply this new concept in their process of development. However, he believed that the transformation would require large-scale investment on urban infrastructure, not only in energy, transportation and water but also in IT and digital sectors with the competitive standards and the importance of public participation in the decision-making process.

Dr. Nicolas highlighted that the countries, such as Uzbekistan, have been carrying out systematic revision of their country-level 5-year masterplans with the vision of “smart city” to implement pilot projects with different investors. He recommended that for “sustainability,” CAREC countries should base their investments on the United Nations Development Program (UNDP) or the United Nations Economic Commission for Europe (UNECE) approach to contribute to the Global Greenhouse Gas (GHG) emission reduction while undergoing development.

**Mr. Wawan Juswanto**, Senior Policy Analyst and Head of International Tax Working Group Center for State Revenue Policy, Fiscal Policy Agency of the Ministry of Finance of Indonesia, presented his study – **“Tax Incentives to Attract Private Investment in Infrastructure: Indonesian Perspective.”** He stated that rapid population growth in developing Asia generates great need for infrastructure. Even though, 92% of infrastructure funding in developing Asia is sourced from the public sector, investment is far behind to meet the needs.

Mr. Juswanto presented a case study from an Indonesian perspective. According to his research findings, infrastructure development is the main catalyst for the economic development in the country. Indonesian government puts infrastructure development as one of the general policies of national development for economic growth and equitable development. Budget for infrastructure has increased significantly since 2015, but still sizeable financial gaps remain unfilled. Although, the Indonesian government has generously offered tax incentives (tax holidays, tax allowance and VAT exemptions), the utilization rate is extremely low because of the complicated application process. Therefore, Indonesia is undergoing amendments to its regulations to simplify the application procedures which include certainty, simplicity, and transparency. This has been paying off for Indonesia, according to Mr. Juswanto. He recommended that other countries should follow the suit in amending their regulations and make them transparent and simple for the investors to invest in sustainable infrastructure projects.

**Dr. Youngho Chang**, Associate Professor, Singapore University of Social Sciences, presented his study – **“Infrastructure Needs and Investment Schemes: Perspectives from a Pan-Asian Natural Gas Trade Model.”** He presented data on the natural gas import and export trade movement for 2018 and 2019 in Europe, Asia-Pacific and World by pipeline and LNG (Liquefied Natural Gas) and the current trade Patterns in East Asia. His research was focused on: (1) trade flows in an integrated and competitive

natural gas market; (2) the inefficient trade routes; (3) trade flows with new infrastructure; and (4) comparison on integrated markets with and without new infrastructure.

Dr. Chang research findings suggested that countries in with abundant mineral fuel resources need to invest in sustainable infrastructure. He concluded that the CAREC countries will benefit from natural gas trade more if they integrate the natural gas market by building new infrastructure through the coordinated cooperation in the region.

By the end of the session, all paper presenters received peer reviewed feedback from discussants, exchanged views with CAREC countries leading field experts, and received practical input on practices underway in the CAREC region. More importantly, the CAREC country representatives had the chance to engage with leading scholars to update knowledge and upgrade skills on the evolution of sustainable development with an emphasis on the impacts of sustainable infrastructure.

## Keynote Address: Day 2

**Dr. Tetsushi Sonobe**, Dean and CEO of the Asian Development Bank Institute (ADBI) delivered the second keynote presentation of the workshop in the second webinar. He highlighted the importance of private investments in sustainable infrastructure in different development phases. He pointed out that investment in sustainable infrastructure will contribute to achieving sustainable development goals.

Dr. Sonobe provided explanation of the cycle of investment in sustainable infrastructure and its economic benefits. He quoted Professor Jahanbegloo's keynote address on citizens trust and echoed that trust-based interaction between landowners, investors and regulators was needed in sustainable infrastructure project development. According to Dean Sonobe, states needed to generate incentives and motivations for landowners, investors, and other stakeholders by increasing the rate of return to their investments and sharing the increment of tax revenue and generating activities in the localities.

## Sessions 3 & 4: Assessing the Impacts of Investments and Future of Sustainable Infrastructure

The third session included presentations from two authors. The session was chaired by **Dr. Hans Holzacker**, Chief Economist of the CAREC Institute. In his short moderation remarks, Dr. Hans emphasized the importance of sustainable infrastructure and subsequently introduced the presenters and handed them the floor.

**Dr. Iskandar Abdullaev**, Deputy Director, CAREC Institute, was the first author to present his study – “**Financing Infrastructure in Central Asia: The Water Sector.**” He began with shedding light on the importance of water resources and their vital economic role in the development of Central Asia. He stressed that despite water being listed among non-renewables, it remains as a key driver for socio-economic development in the region.

Dr. Iskandar underlined the impacts of climate change on water. His research findings also indicated another determinantal issue contributing to water scarcity in the region. According to him, the water infrastructure in the region is outdated and this impacts negatively the distribution and usage of water. Therefore, infrastructure financing in the water sector is in high demand to help improve the current situation. Funding in the water sector is mainly coming from government that is not enough to meet the demand for investment in new sustainable infrastructure and cover the cost of the operational and management costs of the old infrastructure.

Dr. Iskandar recommended that Central Asian countries should put more focus on public-private partnership in unlocking private investment in sustainable infrastructure in the water sector. He also suggested that CAREC countries should join hands and invest collectively on advanced technology and methods of water management in the region since water in the region is a regional public good.

**Dr. Prabheesh Kaarattuparambil**, Associate Professor, Department of Liberal Arts, Indian Institute of Technology Hyderabad, India, presented the second paper – **“Does Infrastructure Investment Lead to Economic Growth? Evidence from Central Asian Countries.”**

Dr. Kaarattuparambil started by stating that the aim of his study was to find the relation between infrastructure investment and economic growth in the region, mainly the five Central Asian Countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan). Even though, these countries are rich in natural resources and manpower, they remain geographically landlocked. The region suffers from the lack of well-developed infrastructure which could connect the countries and enhance regional connectivity and trade.

Therefore, Dr. Kaarattuparambil suggested that Central Asian countries should invest in infrastructure heavily. They should unlock various sources of funding to promote sustainable infrastructure development in the region. He presented empirical data to show that investment in infrastructure leads to economic growth at various levels.

Both paper presenters received peer reviewed feedback and engaged with panelists and CAREC country representatives for further expert discussions to get practical feedback on their papers and help country representatives update knowledge on the topics.

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**Dr. Nella Hendriyetty**, Senior Capacity Building and Training Economist, ADBI chaired the fourth session, in which two more papers were presented. Dr. Nella opened the session with a brief moderation remarks and highlighted the significance of investment in sustainable infrastructure. Shortly after, she introduced the presenters to present their research findings.

**Dr. Minquan Liu**, Professor of School of Economics and the Founding Director of the Center for Human and Economic Development Studies (CHEDS) of the Peking University, the PRC, presented his study – **“Three Models of Local Public Financing in PRC.”** He started with a brief background description of the Local Developmental State (LDS) of the PRC, which is mainly about financial contribution from the local governments to infrastructure development. He went on to analyze different models of local public financing that the PRC has been undertaking through accumulation fund and welfare fund.

Dr. Liu also discussed the Chinese experiment of tax to domestic buildings as a source of funding for sustainable infrastructure. This was piloted in two cities, Shanghai, and Chongqing. It is yet to be tested at the national level since it faced resistance and opposition in these cities. In his conclusion, Dr. Liu said that land leasing is falling because of the dwindling of the land sources. Nonetheless, he recommended that any policies taken in promoting infrastructure development must have the approval of the first line stakeholders.

**Dr. Muhammad Ayub Mehar**, Professor of Economics and Director of Financial Policy Research Center, Iqra University, Karachi, Pakistan, presented his paper – **“Impacts of the Patterns of Financing on Logistic Infrastructure in CAREC Member Countries.”** His research was focused on the financing impacts on logistic infrastructure and understanding the pattern through empirical research methods. The findings demonstrated that short-term external debt on income and infrastructure development

is the most effective mode of financing the total external debt.

Dr. Meher demonstrated positive effects of domestic credit on the private sector, and vice versa. He noted that the external debt does not have significant impacts on the logistic infrastructure development. However, he demonstrated that utilization of public sector external long-term debt fulfils a substantial role in the improvement of infrastructure – quality logistic infrastructure is a determining factor of the per capita income (PCI). Dr. Meher suggested that CAREC countries should optimize all economic potentials that positively impacts PCI, and this trend will inevitably lead to sustainable logistics infrastructure.

Both paper presenters received peer reviewed feedback. Also, presenters engaged with other scholars and country representatives in expert discussions to receive extra input on their papers. More importantly, time was given for open Q&A exchange to help country participants update knowledge on the topics.

### Keynote Address: Day 3

**Mr. Rajeev Mahajan**, Project Finance Manager, Private Sector Facility of the Green Climate Fund (GCF) was the keynote presenter of the third day of the workshop. In his keynote address, he argued that the sustainable infrastructure is the backbone of any successful society and economy. However, he regretted that the infrastructure built over the last century was extremely carbon intensive.

Mr. Mahajan stressed that 2020 is the year where countries are required to submit the new or revised national climate action plans which is a key step towards realizing the Paris Agreement. This year also marks the start of a decade in which the world must reduce emissions by over 45% if global warming is to be limited to 1.5 degrees Celsius.

Considering current challenges, the capital scarcity as well as persistently low fossil fuel prices delay funding of sustainable infrastructure. He underlined that the private sector will perform a significant role in rechanneling current financial and capital flows into new green and climate resilient asset classes to secure economies against future disaster and pandemic events.

He highlighted some of the lessons and best practices stemming from GCF work in the CAREC region and underlined that GCF plays a significant role in de-risking the delivery of private capital flows into low emission and climate resilient investments in CAREC countries.

## Sessions 5 & 6: Governments' Role and New Models for Unlocking Private Investment in Sustainable Infrastructure

**Dr. Iskandar Abdullaev**, Deputy Director of the CAREC Institute was the chair of the session. He opened the session by highlighting the importance of governments' role and new models of infrastructure investment in incentivizing various sources of funding and introduced two paper presenters of the session.

**Dr. Naoyuki Yoshino**, Professor Emeritus of Keio University, Tokyo, Japan, and former Dean and CEO of ADBI was the first presenter. He presented his presentation – **“Increasing Infrastructure Investment in the CAREC Region with Spillover Tax Revenues.”**

Dr. Yoshino stressed that COVID-19 has dramatically impacted the infrastructure investment atmosphere since fiscal spending in many countries have seriously declined, SMEs and rural regions have suffered the most. In his presentation, Dr. Yoshino talked about the credit guarantee, SMEs promotion, and the role of international development agencies like ADB.

He underlined that insurance is very important to finance infrastructure investment, especially in the CAREC region. Given low rate of return and risks of investments into infrastructure, the governments should consider various practical ways of increasing rate of return and reducing risks to bring private sector finance to this area.

He said that spillover effects created by infrastructure is about 68% of the total impact from the infrastructure investment. Moreover, the infrastructure investment together with education will also increase spillover effects. He also emphasized the importance of digital infrastructure in the age of COVID-19, particularly in SME promotion. The point is that crowdfunding and internet sales of products will help SMEs which can locate their businesses along new infrastructure investment.

Regarding the environmental issues associated with infrastructure investments, Dr. Yoshino pointed out the significances of ESG (Environmental, Social and Governance) investment, SDG (Sustainable Development Goals) investment, and “green investment.” He believed these schemes optimizes green portfolio allocation and green credit rating based on waste and pollution. Thus, CAREC countries should take these schemes into account while working to unlock private investment in sustainable infrastructure.

**Dr. Keun Jung Lee**, Associate Professor of Bang College of Business, KIMEP University, Kazakhstan, presented his presentation – **“The Role of Government in Attracting Private Investment in Suitable Infrastructure: Case of Foreign Direct Investment Inflows in Central Asia.”** His study was on Foreign Direct Investment (FDI) inflows that is seen as a driving factor for infrastructure development in countries suffering from shortage of domestic investment. He also believed that FDI can help CAREC countries to achieve their sustainable development goals. Countries selected in his studies were Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.

Dr. Lee, put forward eleven variables that represent the determinants of FDI to Central Asia, the economic conditions (GDP growth rate), reliability (FDI stocks), exports, imports, economic stability (inflation rate), economic freedom, fiscal freedom, market size (total population), labor force (employment), infrastructure (internet users), trade openness. Addressing these variables, he applied two different econometric regression methodologies to hypothesize their relationships with IFDI.

Professor Lee's research findings indicated that availability of the natural resources is the main attracting factor for FDI. However, that is not a sustainable option for the economic development.

Therefore, Central Asian countries need to consider diversifying into new products and markets. He also highlighted that stable political environments, reliable institutions, and infrastructures will help to increase FDI flows in Central Asia.

At the end of the sessions, designated paper discussants provide their peer reviewed feedback to the presented papers. Presenters, discussants, and other panelists engaged with CAREC country representatives in expert discussions for further practical feedback and knowledge sharing.

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**Dr. Nella Hendriyetty**, Senior Capacity Building and Training Economist of ADBI chaired the sixth session. There were two paper presenters.

**Dr. Yohanna M. L. Gultom**, Assistant Professor at the Department of Economics, Faculty of Economics and Business, University of Indonesia, presented her research – **“Government Initiatives to Unlock Private Participation in Infrastructure: Lessons from Indonesia’s PPP in the Water Sector.”** According to Dr. Gultom, in developing countries, the private investors are not willing to invest in the water sector because of high risk of uncertainty and low rate of return compared to investment in energy and transportation infrastructures. In the case of Indonesia, she listed a number of barriers: the lack of funding; land acquisition; tariff setting; multiple layers of different sub-national government contributing to project delay; overlapping and complexity of regulations; and lack of understanding of PPP. She believed these were some of the main obstacles in the water sector to attract the private participation in infrastructure (PPI) development.

Therefore, Indonesian Government has introduced Viability Gap Fund (VGF), Project Development Facility (PDF), land acquisition financing, infrastructure guarantee and tax incentives to attract private investment in water sector considering its high economic and social impacts. Dr. Gultom concluded that government guarantees are needed to mitigate uncertainty and to build investor’s trust by providing investment comfort through transparency guarantee provision.

**Dr. Umid Abidhadjaev**, Deputy Director of Center for Economic Research and Reforms, Uzbekistan, presented his research – **“Impact Evaluation of Infrastructure Provision: Case Studies from Uzbekistan.”**

Dr. Abidhadjaev discussed the impact of newly developed railway line in south-east of Uzbekistan - the Toshguzar-Boysun-Kumkurgon (TBK) - on the financial performance of enterprises and institutions. Based on his applied difference-in-difference (DID) methodology, he had explored the regional effect, spillover effect, and connectivity effect of the current railway system in Uzbekistan. He underlined that the highest impact was observed in the service sector both for territories along the infrastructure and territories located at the far end of the railway system. According to him, the industry sector followed the service sector in terms of impact, and agriculture was least impacted.

Based on his empirical and quantitative research findings, Dr. Abidhadjaev recommended that Central Asian countries should put more focus on investment in sustainable infrastructure, particularly those having multiplier or positive spillover effects in various industries.

Both Dr. Gultom and Dr. Abidhadjaev received peer reviewed feedback on their papers. They were commended for drafting comprehensive chapters but requested to further improve and make them more fitting for policy advocacy purposes. Finally, they engaged with other panelists and CAREC country representatives for further practical inputs and knowledge sharing.

## Sessions 7 & 8: Governments' Role and New Models for Unlocking Private Investment in Sustainable Infrastructure

**Mr. Chul Ju Kim**, Deputy Dean of ADBI chaired the session, in which two papers were presented. Mr. Kim said that the private sector can be considered as a tool to ensure operational efficiency, quality of assets and services compared with the public sector. However, to be successful, PPPs must be formed with strong public policy consideration based on acceptable commercial principles, effective risk sharing, as well as bankable contract structures that offer valuable money over the project life.

**Dr. Dharish David**, Associate Faculty, the Singapore Institute of Management - Global Education, presented his research – **“PPPs in ASEAN and CAREC and the Scope for PPPs in Renewable Energy Projects.”** He started by noticing that a trend for PPPs is growing in renewable energy rapidly in the last 2-3 years. Around 70% of GHG emissions come from the electricity generation, transportation, and urbanization industries. There are great needs to build low-carbon and climate-resilient (LCR) infrastructure to achieve SDGs. Climate-adjusted infrastructure investments could help “lock-in” future emission levels.

Dr. David argued that the private sector is a key player not only in terms of bringing the know-how and technology but also in terms of taking the largest share of investments into infrastructure over time. In his conclusion, he emphasized the need for rapid economic growth in ASEAN and CAREC regions to create significant demand in energy consumption in many sectors across industries – transportation, residential, and commercial. His research findings stemmed from three case studies and indicated that technology is gradually changing the global energy landscape. In such an evolving situation, he urged that governments and other stakeholders shall coordinate regional financing in new innovative areas of sustainable development.

**Mr. Gaurav Verma**, CEPT University, Ahmedabad, India, presented his study – **“Land Pooling- A PPP Model for Sustainable Infrastructure Investment in Delhi.”** In his presentation, he discussed the context and mechanisms through which development-based land value capture contributes to improve value capture as a sustainable financing model for developing urban infrastructure in Delhi. He pointed out that some findings showed different results from empirical analysis of land pooling policy of different cities of India. As an example, he presented data from Delhi city where land pooling policy seems to be ineffective in creating long term wealth for their land holders. It does not generate enough opportunities to produce more entrepreneurs, shareholders, or permanent jobs in companies.

In some cities, Mr. Verma highlighted that the government tried to make citizens as partners of some development projects by providing flexibility to landowners and farmers to bear equal rights and privileges. In Ahmedabad, landowners are happy to pay the betterment levies because the benefit they receive from a land value is at least ten times higher than their original undeveloped land parcel.

Mr. Verma suggested that the tax-based land value capture should be separated from the property tax. This could be done by testing different variables like the property of the arterial, sub-arterial and local roads, and the fee-based development value capture strategy in which citizens are willing to pay the fees. He proposed the share mechanism for fee-based capture – bandwidth and the betterment levy. He concluded that on average 74.3% of the revenue comes from land monetization in India. Therefore, the purest form of capturing land value is land monetization.

Mr. Verma said that to simplify land pooling schemes and its implementation on the ground, governments need new administrative frameworks, in which the revenue collected from these tools will be handed over to the right agencies. Funding allocations must be effective, and money shall go to the development of infrastructure services. He also recommended governments have transparent

mechanism for declaration of fees or charges for each tool where revenue is being generated and building the capacity of agencies to promote sustainable infrastructure and make valuable development contributions.

The designated discussants provided peer reviewed feedback to the papers. Panelists, discussants, and presenters engaged in Q&A with CAREC country representatives for further policy dialogue and knowledge sharing.

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The eighth session was comprised of country perspective presentations and was chaired by **Mr. Eisa Khan Ayoob Ayoobi**, Chief of Capacity Building Division, CAREC Institute. Mr. Ayoobi highlighted the importance of having country perspectives presented in knowledge sharing events where leading experts and scholars are engaged in analyzing and exploring innovative and feasible ways forward for sustainable development at national and regional levels. He, then, introduced the country representatives to deliver their respective presentations.

## Country perspectives

The representative of the **Ministry of Industry and Commerce of Afghanistan** presented investment promotion framework of Afghanistan. In his presentation, he provided an overview of the country's economic plans and highlighted main services by sectors. He listed investment incentives that include business licensing one-stop-shop in 24 provinces, regional connectivity, 25 industrial parks in 18 provinces, liberal investment law, untapped investment opportunities with \$1 trillion natural resources and preferential tariffs. He illustrated the strategic planning pyramid adopted by Afghanistan, which describes the mission and vision, annual objectives, steps, activities and implementers, deliverables, benchmarks, achievements, and the next strategy.

Then, the representative of the **Ministry of Finance and Revenue of Pakistan** presented "Government's Role and New Models for Unlocking Private Investment in Sustainable Infrastructure, Future Challenges and Opportunities." The presenter gave a general explanation and highlighted that the overall score of Pakistan for PPP utilization was ranked ninth in Asia. The representative also described the role of government at both the federal and provincial levels. She noted that the government is always seeking to acquire state assets and develop infrastructure projects through private sector investment. The government established the PPP Authority under the Ministry of Finance to encourage domestic and foreign private investment in public infrastructure projects through transparent and fair procurement processes. Thus, the government efforts have paid off to reduce transaction costs; to ensure appropriate regulatory control and provide enabling legal and economic environment for investment in sustainable infrastructure.

Finally, the country representative from Turkmenistan informed the audience about sustainable infrastructure planning in Turkmenistan. He gave general information on some of the ongoing investment trends in large-scale infrastructure projects and the government's sustainable development plans in the energy, transport, industry, and water sectors.

## Recap

Since the workshop was a mixture of “research conference and capacity building” events, the organizers have allocated time for a recap session to provide chapter authors with final tips on how to shape their research more fittingly for the book. Hence, **Dr. Naoyuki Yoshino**, Professor Emeritus of Keio University, Tokyo, Japan, and former Dean and CEO, ADBI, was requested to provide the final presentation on the structure of the book, including questions about the audience of the book. Dr. Yoshino echoed that the book will be useful and will address policy issues for a group of diverse audiences, including policymakers, politicians, private infrastructure investors, academic scholars, graduate students, and general public. He also highlighted the themes of the book such as sustainable development, SDGs and infrastructure, climate change and infrastructure and COVID-19 and infrastructure. All papers in this book are intended to facilitate governments in achieving the sustainable development goals, encouraging PPPs to infrastructure investment, and enacting measures and regulations that promote and facilitate sustainable infrastructure in Asia, with an emphasis on Central Asia.

## Closing Remarks

**Dr. Iskandar Abdullaev**, Deputy Director of the CAREC Institute, and **Mr. Chul Ju Kim**, Deputy Dean of ADBI, closed the four-day workshop by giving closing remarks. In his closing remarks, Dr. Iskandar Abdullaev noted the importance of the topic and congratulated the organizers and participants for the completion of a successful and fruitful event. He also thanked the authors and panelists for bringing many good ideas and sharing with the audience the best practices on how to improve long-term sustainable economic growth, how to attract private investment in sustainable infrastructure, how to resolve institutional and government challenges, how to assist the governments in making the right decision during the economic crisis.

Dr. Abdullaev also appreciated the strong working relations between ADBI and the CAREC Institute and suggested that this should continue to collaborate more on in-depth research in different areas, especially on land and water issues that have a lot of open questions. He believed that ADBI and the CAREC Institute have established strong platforms to promote knowledge and advocate for sustainable development through the policy dialogue based on research findings at the ministerial and senior official’s meetings organized by ADB and the CAREC Secretariat. He underlined the importance of empirical research in helping member countries with evidence-based decision making. Finally, Dr. Abdullaev invited ADBI and other partner colleagues to join the CAREC Institute Research Conference that will be conducted in March 2021.

Finally, Mr. Chul Ju Kim, the Deputy Dean of ADBI thanked the authors for their comprehensive presentations as well as for provision of peer-reviewed comments. He believed that the workshop achieved its objectives and served the purpose to present research findings and received constructive feedback. It also helped country representatives update knowledge on various critical topics pertaining to unlocking various sources of investment in sustainable infrastructure. He thanked the organizers and expressed appreciation to the participants for their active participation.

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# Appendices

## Agenda

<b>DAY 1</b>	<b>23 SEPTEMBER (WEDNESDAY)</b>
<b>Opening &amp; Keynotes</b>	<b>13:50 -14:45 (Japan Standard Time)</b>
13:50–14:00	<b>Introduction and Technical Guidance</b> This time is allocated for all Speakers, Moderators and Participants to connect to the Zoom webinar in advance.
14:00–14:15	<b>Opening and Welcome Remarks</b> <ul style="list-style-type: none"> <li>Lyaziza Sabyrova, Principal Regional Economist, Regional Cooperation and Operations Coordination Division, Central and West Asia Department, ADB</li> <li>Tetsushi Sonobe, Dean and CEO, ADBI</li> <li>Syed Shakeel Shah, Director, CAREC Institute</li> </ul> <b>Moderator:</b> Dr. Iskandar Abdullaev, Deputy Director, CAREC Institute
14:15–14:35	<b>Keynote Address 1: Sustainable Infrastructure and Citizen Trust</b> <ul style="list-style-type: none"> <li>Ramin Jahanbegloo, Global Intellectual, Director, Mahatma Gandhi Centre for Peace and Nonviolence, and Vice Dean of School of Law, Jindal Global University</li> </ul>
14:35–14:45	<b>Introduction of Book Publication</b> <ul style="list-style-type: none"> <li>Bhajan Grewal (Co-Editor), Victoria University Melbourne</li> </ul>
	<b>Group Photo</b> <ul style="list-style-type: none"> <li>All speakers should turn on their camera at this time. Event organizers will take a screenshot.</li> </ul>
<b>SESSION 1</b>	<b>14:45 -15:55 (Japan Standard Time)</b>
<b>Assessing the Impacts of Investments and Future of Sustainable Infrastructure</b>	
<b>Chair:</b> Chul Ju Kim, Deputy Dean, ADBI	
14:45–15:15 (10 min) (10 min) (10 min)	<b>Paper 1: Infrastructure Investment and Managerial Oversight: A Pathway to Regional Growth</b> <b>Speaker:</b> Eugene Chao, The Wharton Business School, University of Pennsylvania <b>Discussant:</b> Iskandar Abdullaev, Deputy Director, CAREC Institute <b>Q&amp;A</b>
15:15–15:45 (10 min) (10 min) (10 min)	<b>Paper 2: Transition Pathways for Central Asian Energy Infrastructure</b> <b>Speaker:</b> David Roland-Holst, University of California, Berkeley <b>Discussant:</b> Prabheesh Kaarattuparambil, Indian Institute of Technology Hyderabad <b>Q&amp;A</b>
15:45–15:55	<b>Intermission</b>
<b>SESSION 2</b>	<b>15:55-17:55 (Japan Standard Time)</b>
<b>Assessing the Impacts of Investments and Future of Sustainable Infrastructure</b>	
<b>Chair:</b> Eisa Khan Ayoob Ayoobi, Chief of Capacity Building Division, CAREC Institute	
15:55–16:25 (10 min) (10 min) (10 min)	<b>Paper 3: Silk Road Smart Cities?</b> <b>Speaker:</b> Nicolas J.A. Buchoud, Founding Principal of Renaissance Urbaine <b>Discussant:</b> Minquan Liu, Professor of Economics, School of Economics, Peking University <b>Q&amp;A</b>

16:25–16:55  (10 min) (10 min) (10 min)	<b>Paper 4: Attracting Private Sectors in Infrastructure Investment: the role of tax incentives in Indonesia infrastructure</b>  <b>Speaker:</b> Wawan Juswanto, Fiscal Policy Agency, Ministry of Finance, Indonesia <b>Discussant:</b> Naoyuki Yoshino, Professor Emeritus Keio University Tokyo Japan/ Former Dean and CEO, ADBI <b>Q&amp;A</b>
16:55–17:25  (10 min) (10 min) (10 min)	<b>Paper 5: Infrastructure Needs and Investment Schemes in CAREC Countries: Perspectives from a Pan-Asian Natural Gas Trade Model</b>  <b>Speaker:</b> Youngho Chang, Singapore University of Social Sciences <b>Discussant:</b> Eugene Chao, The Wharton Business School, University of Pennsylvania <b>Q&amp;A</b>
17:25–17:55 (10 min) (10 min)	<b>Country Perspectives</b> <ul style="list-style-type: none"> <li>Afghanistan Representative</li> </ul> <b>Q&amp;A/Discussion</b>
<b>Closing:</b>	Nella Hendriyetty, Senior Capacity Building and Training Economist, ADBI
<b>DAY 2</b>	<b>24 SEPTEMBER (THURSDAY)</b>
<b>Technical Guidance</b>	<b>13:50-14:20 (Japan Standard Time)</b>
13:50–14:00	<b>Introduction and Technical Guidance</b> This time is allocated for all Speakers, Moderators and Participants to connect to the Zoom webinar in advance.
14:00–14:20	<b>Keynote Address 2:</b> <ul style="list-style-type: none"> <li>Tetsushi Sonobe, Dean and CEO, ADBI</li> </ul>
<b>SESSION 3</b>	<b>14:20 -15:30 (Japan Standard Time)</b>
<b>Assessing the Impacts of Investments and Future of Sustainable Infrastructure</b>	
<b>Chair:</b> Dr. Hans Holzhaecker, Chief Economist, CAREC Institute	
14:20–14:50  (10 min) (10 min) (10 min)	<b>Paper 6: Financing Infrastructure in Central Asia: The Water Sector</b>  <b>Speaker:</b> Iskandar Abdullaev, Deputy Director, CAREC Institute <b>Discussant:</b> Nicolas J.A. Buchoud, Founding Principal of Renaissance Urbaine <b>Q&amp;A</b>
14:50–15:20  (10 min) (10 min) (10 min)	<b>Paper 7: Does Infrastructure Investment Lead to Economic Growth? Evidence from Central Asian Countries</b>  <b>Speaker:</b> Prabheesh Kaarattuparambil, Indian Institute of Technology Hyderabad <b>Discussant:</b> David Roland-Holst, University of California, Berkeley <b>Q&amp;A</b>
15:20–15:30	<b>Intermission</b>
<b>SESSION 4</b>	<b>15:30 -16:30 (Japan Standard Time)</b>
<b>Assessing the Impacts of Investments and Future of Sustainable Infrastructure</b>	
<b>Chair:</b> Nella Hendriyetty, Senior Capacity Building and Training Economist, ADBI	
15:30–16:00  (10 min) (10 min) (10 min)	<b>Paper 8: China: Three Models of Local Public Financing for Infrastructural Investment</b>  <b>Speaker:</b> Minquan Liu, Professor of Economics, School of Economics, Peking University <b>Discussant:</b> Wawan Juswanto, Fiscal Policy Agency, Ministry of Finance, Indonesia <b>Q&amp;A</b>
16:00–16:30	<b>Paper 9: Impacts of the Patterns of Financing on Logistic Infrastructure in CAREC Member Countries</b>

(10 min)	<b>Speaker:</b> Muhammad Ayub Mehar, Iqra University Karachi, Pakistan
(10 min)	<b>Discussant:</b> Youngho Chang, Singapore University of Social Sciences
(10 min)	<b>Q&amp;A</b>
<b>Closing:</b>	Eisa Khan Ayoob Ayoobi, Chief of Capacity Building Division, CAREC Institute
<b>DAY 3</b>	<b>30 SEPTEMBER (WEDNESDAY)</b>
<b>Technical Guidance</b>	<b>14:50 -15:20 (Japan Standard Time)</b>
14:50–15:00	<b>Introduction and Technical Guidance</b> This time is allocated for all Speakers, Moderators and Participants to connect to the Zoom webinar in advance.
15:00–15:20	<b>Keynote Address 3:</b> <ul style="list-style-type: none"> <li>Rajeev Mahajan, Project Finance Manager, Private Sector Facility, Green Climate Fund</li> </ul>
<b>SESSION 5</b>	<b>15:20 -16:30 (Japan Standard Time)</b>
<b>Governments' Role and New Models for Unlocking Private Investment in Sustainable Infrastructure</b>	
<b>Chair:</b> Dr. Iskandar Abdullaev, Deputy Director, CAREC Institute	
15:20–15:50	<b>Paper 10: Increasing Infrastructure Investment with Spillover Tax Revenues</b>
(10 min)	<b>Speaker:</b> Naoyuki Yoshino, Professor Emeritus Keio University Tokyo Japan/ Former Dean and CEO, ADBI / Nella Hendriyetty, Senior Capacity Building and Training Economist, ADBI
(10 min)	<b>Discussant:</b> Muhammad Ayub Mehar, Iqra University Karachi, Pakistan
(10 min)	<b>Q&amp;A</b>
15:50–16:20	<b>Paper 11: The Role of Government in Attracting Private Investment in Suitable Infrastructure: Case of FDI Inflows in Central Asia</b>
(10 min)	<b>Speaker:</b> Keun Jung Lee, Bang College of Business, KIMEP University, Kazakhstan
(10 min)	<b>Discussant:</b> Gaurav Verma, CEPT University, Ahmedabad, India
(10 min)	<b>Q&amp;A</b>
16:20–16:30	<b>Intermission</b>
<b>SESSION 6</b>	<b>16:30 -17:50 (Japan Standard Time)</b>
<b>Governments' Role and New Models for Unlocking Private Investment in Sustainable Infrastructure</b>	
<b>Chair:</b> Nella Hendriyetty, Senior Capacity Building and Training Economist, ADBI	
16:30–17:00	<b>Paper 12: Government Initiatives to Unlock Private Participation in Infrastructure: Lessons from Indonesia's PPP in the Water Sector</b>
(10 min)	<b>Speaker:</b> Yohanna M. L. Gultom, Assistant Professor of Economics, University of Indonesia
(10 min)	<b>Discussant:</b> Dharish David, Singapore Institute of Management – Global Education
(10 min)	<b>Q&amp;A</b>
17:00–17:30	<b>Paper 13: Evidence based infrastructure financing: case of Uzbekistan</b>
(10 min)	<b>Speaker:</b> Umid Abidhadjaev, Deputy Director, Uzbekistan Center for Economic Research and Reforms
(10 min)	<b>Discussant:</b> Yohanna M. L. Gultom, Assistant Professor of Economics, University of Indonesia
(10 min)	<b>Q&amp;A</b>
17:30–17:50	<b>Country Perspectives</b> <ul style="list-style-type: none"> <li>Pakistan Representative</li> </ul>
(10min)	<b>Q&amp;A/Discussion</b>
(10min)	<b>Q&amp;A/Discussion</b>
<b>Closing:</b>	Nella Hendriyetty, Senior Capacity Building and Training Economist, ADBI

<b>DAY 4</b>	<b>1 OCTOBER (THURSDAY)</b>
<b>Technical Guidance</b>	<b>14:50-15:00 (Japan Standard Time)</b>
14:50–15:00	<b>Introduction and Technical Guidance</b> This time is allocated for all Speakers, Moderators and Participants to connect to the Zoom webinar in advance.
<b>SESSION 7</b>	<b>15:00-16:10 (Japan Standard Time)</b>
<b>Governments' Role and New Models for Unlocking Private Investment in Sustainable Infrastructure</b>	
<b>Chair:</b> Chul Ju Kim, Deputy Dean, ADBI	
15:00–15:30	<b>Paper 14: PPPs in ASEAN and CAREC and the Scope for PPPs in Renewable Energy Projects</b>
(10 min)	<b>Speaker:</b> Dharish David, Singapore Institute of Management – Global Education
(10 min)	<b>Discussant:</b> Keun Jung Lee, Bang College of Business, KIMEP University, Kazakhstan
(10 min)	<b>Q&amp;A</b>
15:30–16:00	<b>Paper 15: Land Pooling- A PPP Model for Sustainable Infrastructure Investment in Delhi</b>
(10 min)	<b>Speaker:</b> Gaurav Verma, CEPT University, Ahmedabad, India
(10 min)	<b>Discussant:</b> Umid Abidhadjaev, Deputy Director, Uzbekistan Center for Economic Research and Reforms
(10 min)	<b>Q&amp;A</b>
16:00–16:10	<b>Intermission</b>
<b>SESSION 8</b>	<b>16:10-17:00 (Japan Standard Time)</b>
<b>Governments' Role and New Models for Unlocking Private Investment in Sustainable Infrastructure</b>	
<b>Chair:</b> Eisa Khan Ayoob Ayoobi, Chief of Capacity Building Division, CAREC Institute	
16:10–16:30	<b>Country Perspectives</b>
(10 min)	<ul style="list-style-type: none"> <li>Turkmenistan Representative</li> </ul>
(10 min)	<b>Q&amp;A/Discussion</b>
16:30–17:00	<b>Recap</b>
	<ul style="list-style-type: none"> <li>Professor Naoyuki Yoshino, Professor Emeritus Keio University Tokyo Japan</li> </ul>
	<b>Closing Remarks</b>
	<ul style="list-style-type: none"> <li>Iskandar Abdullaev, Deputy Director, CAREC Institute</li> <li>Chul Ju Kim, Deputy Dean, ADBI</li> </ul>

## List of organizers from the CAREC Institute and ADBI

### CAREC Institute

Eisa Khan Ayoob Ayoobi, Chief, Capacity Building Division, CAREC Institute  
Rovshan Mahmudov, Senior Capacity Building Specialist, Capacity Building Division, CAREC Institute  
Dildar Zakir, Capacity Building Specialist, Capacity Building Division, CAREC Institute  
Rose Shuai Shao, Capacity Building Specialist, Capacity Building Division, CAREC Institute  
Gary He Huang, E-Learning Specialist, Capacity Building Division, CAREC Institute  
Steven Hao Liu, Capacity Building Specialist, Capacity Building Division, CAREC Institute

### Asian Development Bank Institute

Nella Hendriyetty, Senior Capacity Building and Training Economist, ADB Institute  
Derek Hondo, Research Associate, ADB Institute  
Misuzu Nakamura, Administrative Assistant, ADB Institute