CAREC Institute

Climate Change Regional Policy Dialogue: Learning from the COVID-19 Pandemic

Virtual Workshop Proceedings Report

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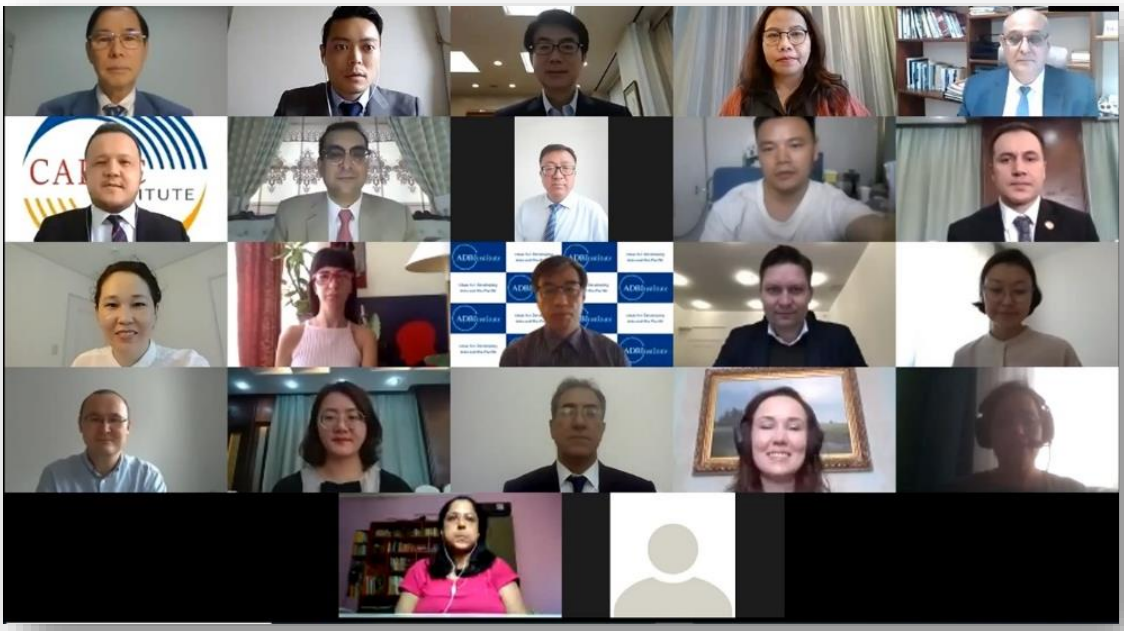

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This proceedings report is one of the outputs of the virtual workshop on "Climate Change Regional Policy Dialogue: Learning from the COVID-19 Pandemic." The CAREC Institute delivered this workshop in collaboration with the Asian Development Bank Institute (ADBI) and the Xinjiang Institute of Ecology and Geography of the Chinese Academy of Sciences (XIEG) on 18-19 June 2020. It aimed at exchanging views and research findings on climate change, development for the CAREC and other Asian sub-regions, as well as best practices and lessons learned on pressing climate change issues at the regional level.

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Abbreviations

ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
ASEAN	Association of Southeast Asian Nations
CAREC	Central Asia Regional Economic Cooperation
CCS	Carbon Capture and Storage
CI	Central Asia Regional Economic Cooperation Institute
CWER	Environment, Natural Resources, and Agriculture Division, ADB
ESG	Environment, Social and Government
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
NDC	National Determined Contribution
PRC	People's Republic of China
SDG	Sustainable Development Goal
XIEG	Xinjiang Institute of Ecology and Geography of Chinese Academy of Sciences

Highlights & Key Takeaways

During the virtual policy workshop on climate change on 18-19 June 2020, organized by the CAREC Institute (CI), Asian Development Bank Institute (ADBI), and Xinjiang Institute of Ecology and Geography of Chinese Academy of Sciences (XIEG), participants unanimously expressed concerns about the potential impacts of climate change on the development of CAREC and other Asian countries. The lively discussion of climate policies, financing and lessons accumulated across Asian countries clearly underlined the need for urgent cross-sectoral and regional action in order to overcome the existing and future challenges associated with the climate change.

The key recommendations and takeaways derived from the workshop include:

- It is important to promote climate-informed investments, provide analysis of economic opportunities and costs of climate adaptation and mitigation in the CAREC region.

- Further work is needed on the CAREC climate vulnerability index focusing on agriculture and energy sectors that would help get more robust data to understand climate impact to design both national and regional scale climate adaptation and mitigation activities.

- Constant dialogue and cooperation between stakeholders on both national and regional levels is needed to stimulate regional cooperation by focusing on multiple sectors and by developing regional climate cooperation gap analysis and roadmap with concrete prospects that can be mainstreamed into concrete regional scale projects.

- In order to reach optimal portfolio allocation by investors, there should be a tax on wastes such as CO2, NOx and plastics based on international tax rate globally which will make investors focus only on return and risks that will lead to optimal asset allocation and sustainable growth.

- Implementation of NDCs should consider that the private sector is comprised of diverse actors (private, institutional, commercial) with different incentives, risks, and opportunities.

- Research-driven and fact-based innovative decentralized solutions and engagement can attract private capital.

- Being subject to the availability of correct data and its interpretation, integration of environmental, social and governmental issues (ESG), if performed well, can cause high macroeconomic growth.

- By setting up stronger regional climate change cooperation in the CAREC region, CAREC countries could reduce both costs and improve the impact of climate efforts across sectors, including agriculture. More alignment of economic growth with potential climate risks can be more successful in regional activities.

Introduction

In 2019, the CAREC Institute (CI), in cooperation with the Innovations and Scientific Research Cluster (ISRC), conducted a research project on the theme of "Climate Insurance, Infrastructure and Governance in CAREC Region." The key aim of the project was to provide an overview of the current status of climate change in 11 member countries through the prism of water, energy and food nexus, economic and financial aspects, and governance (CAREC Institute, 2020)[1].

The project produced a report which provides an overview of changing climate and weather patterns in the region and analysis of most climate vulnerable sectors in different geographic areas. Also, the project examined three important sectors of water-agriculture-food nexus as part of resources and policy nexus approach, reflecting on water footprint, energy efficiency, and greenhouse emissions. Furthermore, economics and financing of climate change adaptation were reviewed in which the researchers examined existing financial instruments for adaptation and mitigation measures. The research project also conducted an analysis of governance, legislative policies, national institutions and linkages between NDCs and SDGs for climate change adaptation and mitigation efforts.

Against this backdrop, for wider dissemination of the CI's research activities and discussion climate change impacts patterns in the context of ongoing COVID-19 pandemic, the CAREC Institute, the Asian Development Bank Institute (ADBI) and the Xinjiang Institute of Ecology and Geography (XIEG) of the Chinese Academy of Sciences (CAS) co-organized a virtual policy workshop on 18-19 June 2020 which focused on regional climate cooperation, innovative climate financing and governance.

The key objective of the workshop was to bring together CAREC, Asian and international intellectuals in order to:

- Share the results of the CAREC Institute and the Asian Development Bank Institute (ADBI) research findings with policymakers from developing member countries to update their knowledge on the impacts of climate change.

- Analyze lessons learned and identify areas for future research to further promote capacity building interventions, insurance, infrastructure, financing, and governance related to mitigating climate change issues.

- Strengthen regional cooperation among leading experts and policymakers in CAREC and other Asian sub-regions on contemporary climate matters.

The workshop was structured along four sessions during two days, focusing on diverse aspects of dealing with climate change impacts in CAREC and other parts of Asia: 1) featuring climate change in CAREC, 2) innovative financing for climate finance in Asia, 3) governance for climate finance, 4) and regional climate change cooperation. Discussing these aspects of climate change in the said regions, the sessions paved a way for further actions and promoted collaboration on a regional scale.

This report herewith summarizes the discussions and conclusions derived from the sessions of the workshop.

[1] Full report can be obtained at: https://www.carecinstitute.org/publications/climate-vulnerability-infrastructure-finance-and-governance-in-carec/

Setting the Stage

Moderated by and opened with welcoming remarks of **Dr. Iskandar Abdullaev,** Deputy Director Two of CI, the opening session set the stage for the workshop followed by thematic sessions. Dr. Abdullaev stated that climate change requires collaboration and efforts from regional and national structures. High economic costs are unavoidable if adaptation measures are not implemented. Both CI and ADBI conducted research on this issue. Today, our aim is to share research results and identify future research engagements. "In the context of the current global pandemic, we see improvements in the air quality of many cities, yet we all understand that sustaining this improvement and, at the same time, recovering economies in a post-pandemic world requires a lot of efforts both on national and regional levels and more research and collaboration," said Dr. Abdullaev.

In her opening remarks, **Ms. Yasmin Siddiqi,** Director, Environment, Natural Resources, and Agriculture Division (CWER), ADB, emphasized that pandemic and climate change are two of the most pressing challenges of our time. These two extremely vital and critically linked topics are impacting our lives, and it is very timely and appropriate to explore the connections and consider the lessons learned from this COVID-19 pandemic in our future climate change policy and investment areas. Three things are important: 1) more holistic resilience, 2) inclusive growth and strengthened governance, 3) and private sector involvement. Across all these three features, there are regional dimensions that are often underserved or underattended, and this workshop allows us to examine and advance these issues by drawing collective knowledge on financing, technology transfer and new research on climate change.

In his turn, **Mr. Syed Shakeel Shah,** Director of the CAREC Institute, highlighted that CI's recent research confirms the adverse effects of climate change are already becoming pronounced across the CAREC region and worldwide – an issue already occupied central stage in global dialogues. Dynamics of this complex issue transcend national and regional boundaries that call for joint collaborative action from governments, private sector and world citizenship supported by innovative green financing approaches. Sharing best practices and knowledge across the region and the world, and catalyzing regional, interregional and global cooperation can enable CAREC member countries not only respond effectively to regional challenges but capitalize on opportunities as well. This policy dialogue is the first step in the series of climate dialogue events to design collective responses to climate change issues in the region.

Professor Tetsushi Sonobe, Dean of ADBI, also underlined that developing Asian and Pacific countries are climate and disaster vulnerable. Due to rapid economic growth, the region is exposed to increased GHG emissions and energy demands which are critical factors to growing climate change. Recognizing this importance, ADBI has organized several policy dialogues on the topic. The future has become uncertain due to COVID-19, yet, recovering from it and a new normal must be more sustainable, greener than pervious normal. This policy dialogue has an important role to play in greening our route back to normal through the promotion of green investments.

In his opening remarks, **Dr. Zhang Yuanming,** Director, XIEG drew everybody's attention to the facts that since the 1950s, the area of forest in the Tarim river basin has decreased by 75%, and since 1961, the size of the Aral Sea has shrunk from 18 thousand square kilometers to less than 8 thousand square kilometers today. These all led to ecological deterioration causing poverty and affecting sustainable development. As pandemic respects no borders, so does climate change. To cope with such global crisis, we must build a community of shared future for mankind, strengthen multilateral cooperation, and work together.

Session I: Climate Change in The CAREC Region

Started with opening remarks of a moderator, **Mr. Eisa Khan Ayoob Ayoobi,** Capacity Building Chief of CI, the session highlighted the outcomes of the joint climate research project of CI and ISRC titling "Climate Insurance, Infrastructure and Governance in the CAREC Region." Mr. Ayoobi noted that research results have been disseminated to member countries for updating knowledge and upgrading skills to promote and inform evidence-based policymaking through regional cooperation in addressing the issues of climate change collectively.

Illustrating key findings of the project, **Dr. Iskandar Abdullaev (CI)** in his presentation underlined how uncertainty can strengthen in the region as per the future projections of climate change patterns unless governments take necessary countermeasures. As per the World Bank estimates, the CAREC region will lose almost 5-9% of GDP by 2030 due to climate change, while fighting global warming worldwide may cost 2% global GDP per annum. Climate inaction can lead to 20% reduction in global per capita consumption. These are the costs of economic, social, and environmental challenges driven by climate change, he noted.

According to the CI's findings, Dr. Abdullaev continued, CAREC region exhibited higher rates of temperature growth compared with the global averages over the past 100 years, frequency and costs of natural disasters are growing, and the future rise of temperature and shifts in the precipitation patterns will exceed the historically observed scale. Knock-on effects of climate change span across many sectors, causing water scarcity, crop failures and decrease of arable land. Salinity and desertification will be accelerated due to drier years. Some 70% of energy sector production is covered by conventional sources and the potential for renewable energy is yet untapped.

He also stated that this all can be improved through effective climate governance, agriculture insurance and catastrophic risk coverage programs, intersectoral coordination and multi-stakeholder cooperation, prioritized investments, integrated planning and leveraging possible synergies for decreasing costs, assessing tradeoffs, demand-side interventions, and decentralized services for ensuring sustainability. In this context, it is important to promote climate-informed investments, provide analysis of economic opportunities and costs of climate adaptation and mitigation in the CAREC region. In its further activities, CI plans to initiate climate-proof regional activities in tourism, agriculture, water resources, health and education sectors that are vulnerable to climate change impacts.

Next, **Mr. Atabek Umirbekov,** IAMO researcher, presented the CAREC climate vulnerability index results, which examined climate impact on water resources across the region. The index aimed to benchmark the countries in terms of their susceptibility to climate change and resilience to adverse impacts in key sectors and capture main sector-specific factors affecting vulnerability and resilience to climate change. It also evaluated the country's adaptive capacity performance along the timeline and the relative importance of climatic and non-climatic factors. As a conceptual basis, the index methodology used the concept of climate vulnerability which was merged and developed between the third and fourth assessment reports of IPCC which defines vulnerability as a function of exposure, sensitivity, and adaptive capacity. According to the index estimations, four (Afghanistan, Pakistan, Turkmenistan, Uzbekistan) out of eleven countries are the most vulnerable to climate change in the long-term.

As per the climate projections, Mr. Umirbekov continued, many CAREC countries will have a growing temperature, above the global mean, in this century. The growing temperature and changing precipitation patterns will inevitably affect the water resources of the region, particularly snow and glacier dominated basins and results in gradual decline of runoff causing changes in the hydrological

cycle across the different seasons. For the rainfed agriculture, climate change will affect Northern and Central parts of the region more adversely, including Kazakhstan, Mongolia and some parts of the Caucasus. Equally adverse exposure to climate change can be observed in irrigated agriculture lands (Afghanistan, Pakistan, Turkmenistan, Uzbekistan and south of Kazakhstan). The reduced river discharge, increased demand for irrigation water due to higher precipitation rates are factors aggravating the situation. These patterns will affect the livestock patterns as well and cause the decreased productivity of pastures in Mongolia, Kazakhstan, and Kyrgyzstan due to a decline in summer precipitation and higher evapotranspiration.

The third presentation, made by **Mr. Shakhboz Akhmedov,** Networking and Partnerships Expert of CI, showcased once more the necessity of regional and collective actions against climate change and climate sensitive infectious diseases such as COVID-19. He mentioned four key reasons to drive regional cooperation, namely: 1) the economies of scale, 2) know-how and tech transfer, 3) complementarity and new opportunities, and 4) common strategy and financing.

The coordination and harmonization of positions with neighboring countries will decrease the unnecessary costs. As per the research done by Adelphi and the Regional Environmental Centre for Central Asia, the Central Asian region loses $4.5 billion annually due to limited regional water cooperation. Moreover, tech and knowledge transfer are necessary especially for having an early warning system and joint monitoring. For example, Mr. Akhmedov noted, recent windstorm in Bukhara, Uzbekistan, caused loss of 20 thousand tons harvest worth $10 million, which could have been avoided provided the early warning system in place. Regional cooperation will also allow, he noted, the development of common risk management strategy, while providing better commodity prices.

He also stated that as the climate is a cross-cutting development issue, it affects all SDGs. In this regard, CI research findings indicated that there is much room for improvement in aligning SDGs with the Paris Agreement. Therefore, constant dialogue and cooperation between stakeholders on both national and regional levels is needed to stimulate regional cooperation by focusing on multiple sectors, and by developing regional climate cooperation gap analysis and roadmap with concrete prospects that can be mainstreamed into concrete regional projects.

As the first discussant of the session, **Ms. Zulfiya Suleimenova,** Deputy Director of Climate Policy and Green Technologies, Ministry of Ecology, Geology and Natural Resources, Kazakhstan, presented lessons of Kazakhstan's climate policy. The actual GHG emissions of the country have been on the rise over the past few years which require more consolidated action to decrease carbon footprint. Low emission development strategy (LEDS) is being developed based on macroeconomic, energy and systems dynamics models to understand the economic rationale of climate policies, changes in global prices for hydrocarbons and societal costs of policies. Additionally, the emissions trading scheme was launched in 2018 which is being strengthened by the new environmental code of the country to be launched by the end of this year. Constant engagement with stakeholders and dialogue with them is a critical factor for introducing new policies.

Ms. Maia Tskhvaradze, Head of Climate Change Division, Ministry of Environmental Protection and Agriculture of Georgia, presented the climate policy of Georgia. As a signatory of multiple global frameworks, including the Paris Agreement, Georgia launched Climate Action Plan (CAP) in 2019 and Climate Change Council in 2020 which coordinates Georgia's climate change policy and international commitments. The work of CAP and updated NDC will be approved by the Council and the government of Georgia. Yet, the COVID-19 pandemic is a challenge blocking planning and approval process.

Session II: Innovative Financing for Climate Finance in Asia

This session was moderated by **Mr. Chul Ju Kim,** Deputy Dean of ADBI and focused on how Asian countries could create innovative financing to mainstream private sector participation into climate finance and green investment. Financing needs for tackling climate change are enormous. While mitigation activities require up to $175 billion per year in Asia, adaptation costs about $40 billion per year until 2030. Notwithstanding many financing opportunities available, the financing gap remains. Therefore, new, innovative sources of financing are necessary, which requires the collaboration of public and private sectors. Private financing can be realized through new instruments such as green bonds, but challenges are still there, such as lack of data, limited risk capacity, etc.

Professor Naoyuki Yoshino, Professor Emeritus Keio University, Japan, highlighted in his presentation that current SDG and ESG allocation of assets will distort optimal portfolio allocation which will bring lower economic growth and greater friction. Different consulting companies provide different criteria and weight for 17 SDGs and ESGs, which will spread investors across different portfolios as there is no uniform approach in this regard. Traditionally, investors look at two major parameters when it comes to investing – risks and rate of return. Recently, these two have been complimented by two others – SDGs and ESGs - that causes confusion for investors.

In order to reach optimal portfolio allocation by investors, there should be tax on wastes such as CO2, NOx and plastics based on international tax rate globally which will make investors focus only on return and risks that will lead to optimal asset allocation and sustainable growth. The tax rate should be based on 2050 climate goal which is to keep the mean temperature below 2^0C. Similar action can be taken vis-a-vis green bonds. Diverging indicators in the evaluation are observed also in the case of green bonds as their greenness differ by criteria of various companies. There is also green banking which issues green loans with varying degrees of greenness from one to another country. Climate is important however current definitions of SDGs, ESGs, green bonds, and green loans may distort optimal portfolio allocation in the long term. Therefore, tax is the best policy option rather than SDGs/green bonds, etc.

Dr. Dina Azhgaliyeva, Research Fellow, ADBI, illustrated how green bonds for financing renewable energy and energy efficiency can be beneficial. While mostly financing renewable energy projects, green bonds finance the climate adaptation projects as well. The real sector and financing sectors are different from each other. Promoting green bonds does not necessarily mean promoting renewable energy and/or environmental projects. There are many definitions of green and gray projects. Green bonds issuance is growing yet decline was observed in March 2020 due to COVID-19 impact. There is a clear link between pandemic and green bonds – green bonds are sensitive to pandemics. It is most probably connected with the decrease of government sector budgets since many green bonds are issued by governments. This needs to be further explored to get a clear understanding of the link between them and draw lessons for possible future pandemics.

Out of ten ASEAN countries, five of them, issue green bonds, namely, Indonesia, Malaysia, Singapore, Thailand, and the Philippines. The government and financial sectors are leaders in issuing green bonds across these countries. Most of the green bonds are directed at green buildings in the region. In terms of policies, there are real sector and financial sector policies. In order to promote green bonds grants policy, one needs to identify the objective of the policy – whether it is promoting green finance or actually reducing greenhouse gas emission. Policies need to restrict the eligibility criteria of such policies to only domestic projects and limit refinancing if the objective is to reduce local GHG emissions. It is up to policymakers to choose, based on the clear objectives, to provide green financing and reduce GHG emissions.

Mr. Adam Cotter, Director & Head of Asia, Official Monetary and Financial Institutions Forum (OMFIF) talked about the global public investors (GPI)' approach to climate finance. Global public investors, such as central banks, sovereign funds and public pension funds possess around $40 trillion assets. This set of investors has gradually embraced environmental, social, and governance factors in the management of portfolios and wider activities. Today, we observe a shift in fiduciary thinking, to a much more holistic and encompassing view of GPI's ability to shape long-term trends for better or worse for future generations. However, central banks also need to take responsibility for safeguarding financial stability against chronic risks in the global economy. In practice, many central banks in developing countries nowadays proactively seek to promote sustainable economic development, be it through the promotion of financial inclusion and aligning the financial system with sustainable development. Opening up a new discussion on the scope of – and limits to – the mandate of central banks, which undoubtedly complicates matters, as developmental objectives may at times conflict with stability objectives and also of course with political objectives.

A big breakthrough has been the realization that embracing ESG criteria in investment is necessary to protect portfolios from exposure to non-financial sources of risk. There are three different approaches to this, Mr. Kotter concluded. First, **do no harm strategies -** to increase the level of exclusion from investment portfolio specific activities and industries with negative ESG impacts such as tobacco, arms or fossil fuels, or specific companies that do not meet minimum ESG standards. Second, **engagement and long-term value** - choosing the best-performing companies based on ESG benchmarks. This includes integrating ESG into active investment decision-making, for example by using shareholder rights to steer investee companies into more sustainable directions. Third is **a positive impact, which means** investing directly in sustainable assets and specialized instruments, including impact investment. Choice of the approach depends on a few factors such as the composition of the existing portfolio, the data availability for different asset classes, the flexibility to invest across asset classes, and the skills and expertise available to the investment team.

Alongside the three resource persons, two discussants provided two case studies - **Mr. Dudi Rulliadi,** Senior Policy Analyst, Center for Climate Finance and Multilateral Policy, Fiscal Policy Agency, Indonesia and **Dr. Rastislav Vrbensky,** CEO, AvantGarde Ideas, Slovakia.

Mr. Rulliadi presented an innovative climate financing case in Indonesia. He illustrated how COVID-19 caused domino effects across sectors by putting pressure on the economy on both supply and demand sides. While the economy went down and unemployment along with the poverty rate increased, the impact of the pandemic has had a positive impact on the environment. Global GHG emissions decreased by 6% so far. Besides public financing, some non-public financing mechanisms such as Green Climate Fund, SDG Indonesia One, and the involvement of the private sector, to name a few. SDG Indonesia One – a blended finance platform from SOEs to finance SDG activities in Indonesia, including climate change. Carbon taxing and reduction of subsidies to the energy sector are under consideration in Indonesia, he concluded.

Talking about climate finance needs and solutions in Central Asia, **Dr. Vrbensky** suggested in his presentation to replicate the Kazakhstani experience in launching innovative climate financing schemes such as emission trading scheme, national green investment fund, and debt for climate swap. He also presented five policy types that can deliver both economic and climate goals. First, clean physical infrastructure investment in the form of renewable energy assets, storage (including hydrogen), grid modernization and CCS technology. Second, building efficiency spending for renovations and retrofits including improved insulation, heating, and domestic energy storage systems. Third, investment in education and training to address immediate unemployment from COVID-19 and structural shifts from decarbonization. Fourth, natural capital investment for ecosystem

resilience and regeneration including restoration of carbon-rich habitats and climate-friendly agriculture, and fifth - clean R&D spending.

Session III: Governance for Climate Finance in Asia

Moderated by **Dr. Nella Hendriyetty,** Senior Economist, CBT, ADBI, this session featured Mr. Frédéric Asseline, Principal Climate Finance Specialist, ADB, **Ms. Paramita Datta Dey,** Senior Research Officer, Urban Ministry and Urban affairs, the National Institute of Urban Affairs, India, and **Dr. Kim Schumacher,** Lecturer in Sustainable Finance and ESG, School of Environment and Society, Tokyo Institute of Technology. Discussions covered such topics as factors and targets countries should have in developing their environmentally friendly investment, while integrating ESG elements and how it is reshaping the investment environment, National Determined Contribution (NDCs) and enabling policies to support the climate finance development.

Following opening remarks of the moderator, interesting information on financing NDCs was presented by Mr. Frédéric Asseline. He noted that while the world has already missed the opportunity to limit the temperature rise to 1.5^0C, there are ways to slow down climate impact by mobilizing public and private finance to finance the transition to a low-carbon economy. Three main financing vehicles are important in this regard: 1) Expanding the green bond market; 2) Diversification of green finance market; 3) Development of blended finance - a combination of capital from the public, national development bank, and private sources. In this context, ADB's climate finance approach is supported by deploying concessional resources, maximizing market mechanisms, and catalyzing private capital. From ADB's resources, as per its Strategy 2030, there is $80 billion until 2030 for dealing with climate change, which makes $6-7 billion per year. ADB also deploys its new initiative, called NDC advance, to help member countries develop a second wave of NDCs and meet climate targets. Another supporting mechanism is the Platform for Climate-Resilient and Low-Carbon Urban Development which aim to advance with NDCs at the city level.

In the end, low-carbon technologies and notably renewable energies have demonstrated that they can attract significant private sector capital with the right policies and economics – this should be scaled up and expanded across a wide range of sectors. It is critical to also focus resources on resilience and social/health safety nets – climate change affects the intensity of heat waves and the quality of water supply. Implementation of NDCs should consider that the private sector is comprised of diverse actors (private, institutional, commercial) with different incentives, risks and opportunities. With the right structuring, the costs of transition and meeting or exceeding NDCs can be lowered.

In her presentation, **Ms. Paramita Datta Dey** illustrated solid waste management sector in India by answering the questions on what is being done on climate financing and what are the challenges in environmental sustainability and what can be done to move forward. About 62 m tons of municipal solid waste is generated annually, which does not include construction and demolition and e-waste. If the business, as usual, continues, then 66,000 thousand hectares of land will be needed by 2030.

Waste management activities generate carbon dioxide (CO2~ 50 per cent), methane (CH4 ~ 50 per cent) and nitrous oxide (N2O < 1 per cent) gas, among others, that intensify global warming as the potential of Methane (CH4) and Nitrous Oxide (N2O) are 25 times and 298 times higher than that of carbon dioxide over a 100-year period according to IPCC. Environmental and financial sustainability of dealing with wastes is, therefore, an important factor. Financial challenges, combined with institutional challenges, are causing more complexities in advancing the treatment of waste. Lack of skilled manpower, low access to finance and lack of financing experience are to name a few.

The way forward could include providing impetus to more innovative nature-based decentralized solutions, direct engagement with people and hear their voices and needs, encourage private investment through grant finance, equity participation by government, introduce improved technology and assure the sale of products. To operationalize all these, India needs a large-scale nationwide research program to find fact-based solutions to this issue.

The importance of science-driven and evidence-based decision-making was also presented by **Dr. Kim Schumacher**, who focused his presentation on ESG investing. Data focused ESG has many elements starting from digitization, the internet of things, blockchain, artificial intelligence, to the engagement of local governments, hospitals etc. All institutions make decisions based on the data, and data providers collect data and resell it. Collected data will be clustered by ESG metrics based on which government makes decisions on how to spend financial resources, for example, public health spending – on masks or testing during the ongoing pandemic.

In this process, it is important to understand who data providers are, data collectors and how one can verify data. And, ultimate decision-making is subject to how we interpret that data in hand. One must rely on true expertise and skills in data evaluation. Also, it is important who verifies and uses the data. For example, the UK government hired an accounting firm Deloitte to run the coronavirus testing center. Since they were not healthcare professionals, the outcome was that the government had to take back this process. Being subject to the availability of correct data and its interpretation, ESG integration, if performed well, can cause high macroeconomic growth.

As the first discussant of the session, **Mr. Riki Frindos,** Executive Director, Indonesian Biodiversity Conservation Trust Fund, presented green investment in Indonesia in the context of capital markets to support the climate agenda. Green investment is not a new thing in the country, yet there are challenges for private climate financing in Indonesia.

There is not yet a comprehensive and systematic strategy to translate the climate agenda into a specific climate financing scheme and accordingly engage the whole spectrum of sustainable investors in the country. Therefore, one has to identify each type of climate financing required to support the climate agenda and develop a strategy and action plan to engage private investors. Stewardship and engagement with big businesses are very important to develop investor initiatives to finance green start-ups and entrepreneurs.

The second discussant, **Mr. Ali Shareef,** Director of Climate Change, Ministry of Climate Change of the Maldives, presented the current situation in the Maldives from climate change perspective and what is envisaged to do in the coming years. As the Maldives is very dependent upon the tourism sector, this is at the same time the biggest emitter (40% of overall emissions of the Maldives), yet the biggest GDP contributor as well. The Maldives Green Fund, capitalized through Tourist Green Tax, finances many development projects in the country. The green tax could generate around $4 million revenue per month.

In the context of the ongoing COVID-19 pandemic, the government has to revisit its commitments under NDCs and align them with the dynamics of COVID-19. It has to analyze the vulnerability of the country across all sectors and the magnitude of climate impact. Strong focus in this process needs to lie on the bottom line where the real problem is. Increased access to donor finance is another factor to increase climate finance, particularly, in island countries as the Maldives.

Session IV: Regional Climate Change Cooperation

The topics in this session spanned through regional cooperation challenges and perspectives, ideas on potential regional projects and their impact on the development of the CAREC region. Following the invited resource persons, discussants gave country presentations. As a moderator of the session, **Dr. Iskandar Abdullaev,** highlighted that climate change will further exacerbate the volatile environment in the region, particularly environmentally problematic areas will further deteriorate, biodiversity will be reduced, and degradation will continue. Moreover, agriculture will be impacted heavily, which covers 14% GDP of the region and 40% of employment. Lastly, regional cooperation is necessary. There are economic cooperation platforms in the region, and multilateral donors and governments set up various collaboration platforms. Which other tools would be necessary in the region to strengthen climate cooperation?

As the first presenter of the session, **Dr. Duan Weili,** State Key Laboratory of Desert and Oasis Ecology, XIEG, presented how climate change and human activities exacerbated water stress in the Aral Sea Basin, Central Asia. Climate change is affecting the hydrological cycle and water resources across the globe. It affects precipitation changes, potential evaporation, water runoff and soil moisture. These factors, combined with human activities in efficient use of water resources and its complex allocation across the Central Asian region, severely affected the Aral Sea and caused its gradual desiccation.

He underlined that the problem in the Aral Sea and the changes of climate factors need better understanding. Knowing precipitation and temperature, and surface water resources in the whole Aral Sea basin would help simulate water resources in the Aral Sea basin. Demonstrating the details of change over the years since the 1960s, he illustrated how increased precipitation and melting water led to an increase in flows from upper rivers to middle and lower rivers. He also mentioned that Central Asian countries use disproportionally large quantities of water relative to the size of their economies and populations. Most water goes to crops grown in poor-quality soils that increase inefficiency in the water sector that is another factor affecting the water stress in the region. Expansion of urban land (219.76 km^2/year) and agricultural land (96.03 km^2/year) from 1992 to 2015 has increased water consumption, exacerbating the stress of water resources. Establishment of reservoirs and irrigation canals had significantly cut off the river discharge, in comparison with the 1960s – an environmental disaster that Central Asian population is still dealing with.

One of the water-stressed countries of the CAREC region is Pakistan. A showcase from Pakistan was presented by the second resource person of this session **Dr. Ghulam Samad**, Senior Research Specialist, the CAREC Institute. Dr. Samad illustrated the impact of climate change on the agriculture sector in Pakistan. He showed the shift in the mean temperature in Pakistan that had been progressively rising over the past 100 years. Equally, the mean rainfall in the country was also increasing over that period. All these changes will directly affect the water and agriculture sectors of the country.

Agriculture of Pakistan contributes 18.6% of its GDP while involving 38.5% of its 220 million population. One of the responses to these challenges could be crop management by adjusting the sowing window and adapting planting techniques. Also, genetic improvement can be important to increase seed tolerance to high temperature. Water use efficiency is another important response Pakistan might use which increases water productivity. In the regional context, projections indicate that climate change will further aggravate the economies and livelihoods of local populations, including Pakistan. High economic costs are unavoidable for every country if adaptation measures are not implemented in the CAREC region. Therefore, by setting up stronger regional climate change cooperation in the CAREC region to join resources, CAREC countries could reduce both costs and improve the impact of climate efforts across sectors, including agriculture.

With respect to regional climate cooperation, **Mrs. Nailya Timerkhanova,** Climate Change Expert highlighted that climate change does not recognize borders and requires immediate concerted action. She underlined that regional climate mitigation and adaptation projects in the region mainly focus on climate policy formulation, the Paris Agreement and its implementation mechanisms, data, knowledge, and information exchange. Regional cooperation is mostly concentrated on capacity building, jointly held workshops and events, development of knowledge products, access to information portals and others.

There are numerous global and regional platforms for cooperation, attended mainly by sector experts dealing with climate science and policies. Cooperation through them is a necessity as the region is exposed to various common problems such as water scarcity, droughts, food insecurity, ecosystems loss and other climate-driven hazards. Yet, there are some challenges as well. The absence of common language, blended mode of investments, climate change indicators are not specifically targeted, such as emission reduction or carbon sequestration or adaptation and complexity due to differing needs of countries are to name a few. Moreover, multiple sub-regional platforms are bounded with projects which question their sustainability. Looking ahead, depending on the degree of commonness of topics for countries, selected issues should be clustered at a regional level. Mainstreaming climate-resilient measures and planning on indicative targets in regional infrastructure projects can be another perspective. More alignment of economic growth with potential climate risks can be more successful in regional activities.

The first discussant, **Mr. Zhihua Chen,** Director of Division of International Cooperation and Exchange, Department of Climate Change, Ministry of Ecology and Environment, the PRC, highlighted a few challenges in dealing with climate-proof activities in the PRC: large population, imbalanced and inadequate economic development, uneven development of urban and rural areas, poverty, the vulnerability of ecological environment, pressure on reducing GHG emissions. He illustrated actions taken and progress made as per the NDC. By the end of 2018, Chinese carbon dioxide emission per unit of GDP and carbon intensity has decreased by 45.8% comparing with the level of 2005. The share of non-fossil fuel in consumption has increased to 14.3% and the area with forest coverage has enlarged by 32.7 million hectares and overall forest stock volume has increased by 5.1 billion cubic meters since 2005.

The PRC prioritizes the cooperation with other countries to increase domestic capacities of developing countries through South-South Cooperation training program. All CAREC countries can join this training program developed by the Chinese government through Belt and Road Initiative and South-South Cooperation program.

In his turn, **Mr. Batyr Kurbanov,** Chief Specialist of the Secretariat of the Interstate Commission on Sustainable Development (SIC ICSD), International Fund for Saving the Aral Sea (IFAS), presented his organization as another platform for climate cooperation. The SIC ICSD was established in 1995 and aims to create an integrated information database for regional and national decision-making. One of the main successful regional activities of the center is the ICSD which acts as the coordinating body for the Regional Environmental Action Plan (REAP) process. Active coordination with national environmental strategies and plans has become an important aspect of the establishment of the REAP. In 2003, REAP was approved by the Board of the International Aral Sea Fund as a general sub-regional environmental program. The ICSD is initiating a process to review and update the REAP in order to respond to current global challenges such as climate change and sustainable development goals.

Conclusion

“There is a lot of learning, exchange and analysis that cannot be covered by one meeting,” Dr. Abdullaev said, “we need to pay attention to the economy of scale when it comes to tackling challenges associated with climate change. We need to promote cooperation, integrated planning between sectors and countries and region, and cross-cutting institutional mechanisms that must be in place. Second, there is a lot of knowledge, experience and technology, so we need to learn how to transfer them across the region. Third, there are opportunities for complementary and new activities – jointly we could identify and implement since the CAREC region is itself very diverse economically which allows complementary activities. Finally, a common strategy is very important, no country by itself can solve climate-related issues – cooperation and joint financing are key elements in this all.”

Dr. Abdullaev mentioned that CI will further continue its climate research with more focus on regional activities and intersectoral policy developments across water, agriculture, and energy sectors. This will allow identify opportunities for joint activities and capacity building sessions for the countries. There is a difference in approaches in Central Asia and South Asia which means there could be good cooperation between them. On top of that, the level of economic development is also different, and this is helpful. As this workshop has shown, Dr. Nella noted, the role of ESG in developing a climate investment portfolio is very important. Encouragement of private sector involvement through green bonds with strategy and government intervention should be prioritized. Long term and sustainable private funding is available but barriers to green investments are significant that need to be addressed.

NDCs can be instrumental in increasing the role of the private sector. For catalyzing private investment, the role of multilateral development banks is also important that would help promote transfer of knowledge, technologies, lessons, and policy options for the countries.

Fighting with climate change is not a sprint, but a marathon. Not only environmental sustainability, but social and economic development also require common understanding and stakeholders’ cooperation and coordination. Cooperation is even more important during these current challenging economic times. Yet, there is room for optimism, despite the challenges that the global economy is facing in the context of COVID-19 pandemic. What is essential right now is to strengthen collaboration and develop new collaborative activities to seek concrete answers to a large number of challenges associated with climate change common to most of CAREC and other Asian countries.

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Appendices

Agenda

A Virtual Policy Workshop

Climate Change Regional Policy Dialogue: Learning from the COVID-19 Pandemic

18-19 June 2020
(as of 17 June 2020)
Chinese Standard Time (CHT)
Japanese Standard Time (JST)

AGENDA **Day 1 (18 June 2020)**	
14:30-14:55 (JST) 13:30-13:55 (CHT)	**Introduction (Technical Guidance)**
14:55-15:15 (JST) 13:55-14:15 (CHT)	**Opening and Welcoming Remarks** • **Ms. Yasmin Siddiqi,** Director, Environment, Natural Resources, and Agriculture Division (CWER), ADB • **Mr. Syed Shakeel Shah,** Director, CAREC Institute • **Professor Tetsushi Sonobe**, Dean of ADBI • **Dr. Zhang Yuanming,** Director, XIEG Moderator: **Dr. Iskandar Abdullaev**, Deputy Director II, CAREC Institute
15:15-15:20 (JST) 14:15-14:20 (CHT)	**Photo Session** • All speakers, moderators and discussants will be requested to switch on their videos in Zoom. A screenshot will be taken.
SESSION I. CAREC Institute Research Findings on Climate Change in CAREC Region	
15:20-16:40 (JST) 14:20-15:40 (CHT)	**Format:** Speakers are invited to make presentations of 15 minutes each on the given topic. Presentations are the outcomes of the CAREC Institute research project conducted in 2019 under the same title as this session. Following the presentations, discussants will give country presentations concluding with a Q&A session where all participants are encouraged to actively engage with speakers through questions and comments. Moderator: **Mr. Eisa Khan Ayoob Ayoobi**, Chief of Capacity Building, CAREC Institute
(1 hour 20 minutes in total) 15 minutes maximum for each presenter	Opening remarks by moderator (5 min) **Presentations** (15 min each) **A.** *Climate Insurance, Infrastructure and Governance in the CAREC Region* – **Dr. Iskandar Abdullaev**, Deputy Director II, CAREC Institute

	B. *CAREC Regional Climate Vulnerability Index* – **Mr. Atabek Umirbekov**, Researcher, IAMO **C.** *CAREC Regional Climate Cooperation Network - a dialogue platform* – **Mr. Shakhboz Akhmedov**, Networking and Partnerships Expert, CAREC Institute
7 minutes maximum for each discussant	**Discussants** (7 min each) **1. Ms. Zulfiya Suleimenova**, Deputy Director of Climate Policy and Green Technologies Department, Ministry of Ecology, Geology and Natural Resources, Kazakhstan **2. Ms. Maia Tskhvaradze**, Head of Climate Change Division, Ministry of Environmental Protection and Agriculture of Georgia
15 minutes open discussion	**Q&A and Discussion** (15 min)
16:40-16:50 (JST) 15:40-15:50 (CHT)	**Intermission (10 min)**
SESSION II. Research Findings on Innovative Financing for Climate Finance in Asia	
16:50-18:10 (JST) 15:50-17:10 (CHT)	Format: Speakers are invited to present for 15 minutes each on the given topics. The topic includes how Asian countries could create innovative financing to mainstreaming private sector participation into climate finance and green investment. Following the presentations, discussants will give country presentations concluding with a Q&A session where all participants are encouraged to actively engage with speakers through questions and comments. Moderator: **Mr. Chul Ju Kim**, Deputy Dean of ADBI
(1 hour 20 minutes in total) 15 minutes maximum for each presenter	Opening remarks by moderator (5 min) **Presentations** (15 min each) **A.** *Better way to induce green bond in order to achieve optimal portfolio allocation* – **Professor Naoyuki Yoshino,** Professor Emeritus Keio University Tokyo Japan/ Former Dean and CEO, ADBI/Director, Financial Research Center, Financial Services Agency (FSA) Government of Japan **B.** *Green bonds for financing renewable energy and energy efficiency in South-East Asia: a review of policies* – **Dr. Dina Azhgaliyeva**, Research Fellow, ADBI **C.** *Global Public Investors' Approach to Climate Finance* – **Mr. Adam Cotter,** Director & Head of Asia, Official Monetary and Financial Institutions Forum (OMFIF)
7 minutes maximum for each discussant 15 minutes open discussion	**Discussants** (7 min each) **1. Mr. Dudi Rulliadi**, Senior Policy Analyst, Center for Climate Finance and Multilateral Policy, Fiscal Policy Agency, Indonesia **2. Dr. Rastislav Vrbensky**, CEO, AvantGarde Ideas, Slovakia

	Q&A and Discussion (15 min)
18:10-18:30 (JST) 17:10-17:30 (CHT)	**Closing: Nella Hendriyetty**, Senior Economist, Capacity Building and Training, ADBI

Day 2 (19 June 2020)

SESSION III. Governance for Climate Finance in Asia	
15:00-16:20 (JST) 14:00-15:20 (CHT)	**Format:** Speakers are invited to present for 15 minutes each on the given topic. The topic will focus on factors and targets that countries should have in developing their environmentally friendly investment. The discussion may include the concept of environment, social and governance (ESG) investment and how it is reshaping the investment environment, National Determined Contribution (NDCs) and enabling policies to support the climate finance development. Following the presentations, discussants will give country presentations concluding with a Q&A session where all participants are encouraged to actively engage with speakers through questions and comments. Moderator: **Dr. Nella Hendriyetty**, Senior Economist, CBT, ADBI
(1 hour 20 minutes in total) 15 minutes maximum for each presenter	Opening remarks by moderator (5 min) **Presentations** (15 min each) **A.** *Securing Financial Resources for Achieving NDCs* - **Mr. Frédéric Asseline,** Principal Climate Finance Specialist, ADB **B.** *Climate Financing - Solid Waste Management in India* - **Ms. Paramita Datta Dey,** Senior Research officer, Urban Ministry and Urban affairs, The National Institute of Urban Affairs, India **C.** *ESG Investing and COVID-19: The importance of science-driven and evidence-based decision-making in times of crisis* - **Dr. Kim Schumacher,** Lecturer in Sustainable Finance and ESG | School of Environment and Society | Tokyo Institute of Technology
7 minutes maximum for each discussant 15 minutes open discussion	**Discussants** (7 min each) **1. Mr. Riki Frindos**, Executive Director, Indonesian Biodiversity Conservation Trust Fund, Indonesia **2. Mr. Ali Shareef**, Director of Climate Change, Ministry of Environment, Maldives **Q&A and Discussion** (15 min)
16:20-16:30 (JST) 15:20-15:30 (CHT)	**Intermission (10 min)**
SESSION IV. Regional Climate Change Cooperation	
16:30-17:50 (JST) 15:30-16:50 (CHT)	**Format:** Speakers are invited to present for 15 minutes each on the given topic. The topic spans regional cooperation challenges and perspectives, ideas on potential regional projects and their impact on the development of the CAREC

	region. Following the presentations, discussants will give country presentations concluding with a Q&A session where all participants are encouraged to actively engage with speakers through questions and comments. Moderator: **Dr. Iskandar Abdullaev**, Deputy Director II, CAREC Institute
(1 hour 20 minutes in total) 15 minutes maximum for each presenter	Opening remarks by moderator (5 min) **Presentations** (15 min each) **A.** *Climate Change and Human Activities Exacerbate Water Stress in the Aral Sea Basin, Central Asia* – **Dr. Duan Weili**, State Key Laboratory of Desert and Oasis Ecology, XIEG **B.** *Regional Climate Cooperation: economic effects – Impact of Climate Change on Major Crops in Pakistan* **– Dr. Ghulam Samad,** Senior Research Specialist, CAREC Institute **C.** *Regional Climate Cooperation – challenges and perspectives* – **Miss Nailya Mustaeva,** International Expert
7 minutes maximum for each discussant	**Discussants** (7 min each) **1. Mr. Zhihua Chen**, Director of Division of International Cooperation and Exchange, Department of Climate Change, Ministry of Ecology and Environment, People's Republic of China **2. Mr. Batyr Kurbanov**, Chief Specialist of the Secretariat of the Interstate Commission on Sustainable Development (ICSD), International Fund for Saving the Aral Sea (IFAS)
15 minutes open discussion	**Q&A and Discussion** (15 min)
17:50-18:20 (JST) 16:50-17:20 (CHT)	**Wrap-up and Next Steps** **CI and ADBI research projects on climate change: focus and intervention logics** • **Dr. Iskandar Abdullaev,** Deputy Director II, CAREC Institute • **Dr. Nella Hendriyetty**, Senior Economist, ADBI **Closing Remarks** • **Mr. Syed Shakeel Shah,** Director, CAREC Institute • **Mr. Chul Ju Kim**, Deputy Dean, ADBI

List of Organizers from CAREC Institute and ADBI

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