



# Workshop Report

**Advancing Climate Resilience in  
Uzbekistan's Water, Agriculture,  
and Energy Sectors through  
Sustainable Financing and  
Private Investment**

25-27 November 2024  
Tashkent, Uzbekistan



## Disclaimer

This report summarizes the outcomes of the country-specific workshop ‘Advancing Climate Resilience in Uzbekistan’s Water, Agriculture, and Energy Sectors through Sustainable Financing and Private Investment,’ which was jointly organized by the ADB’s CAREC Program and the CAREC Institute from November 25-27, 2024, in Tashkent, Uzbekistan. The report was drafted by Dr. Ilhom Abdulloev, Chief of the Capacity Building Division, and Ms. Rose Shao, Capacity Building Specialist, both from the CAREC Institute.

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## EXECUTIVE SUMMARY

The workshop ‘Advancing Climate Resilience in Uzbekistan’s Water, Agriculture, and Energy Sectors through Sustainable Financing and Private Investment’ was held in Tashkent, Uzbekistan, from November 25-27, 2024. This event was jointly organized by the Asian Development Bank’s (ADB) CAREC Program and the CAREC Institute. The primary aim of the workshop was to address the pressing challenges faced by Uzbekistan in the context of climate change and to explore innovative financing solutions that can enhance resilience in the water, agriculture, and energy sectors based on the CAREC Institute’s recent research findings. By bringing together a diverse group of stakeholders, the event facilitated meaningful discussions on innovative financing solutions and collaborative strategies for enhancing climate resilience. The insights gained from this workshop are expected to inform future initiatives and policies aimed at promoting sustainable development in Uzbekistan.

Key outcomes of the workshop include:

- 1. Innovative Financing Solutions:** Participants were introduced to innovative financing mechanisms, including blended finance, public-private partnerships, and climate finance models. These solutions are essential for bridging the significant investment gap in Uzbekistan’s infrastructure projects, particularly in the water, agriculture, and energy sectors.
- 2. Regulatory and Policy Adjustments:** The workshop highlighted the need for regulatory reforms to enable private sector engagement, especially in the water sector. Discussions emphasized the importance of clearer ownership structures, improved fee collection mechanisms, and policies that incentivize private investment. Participants also explored the role of government in creating an enabling environment for sustainable development.
- 3. Infrastructure Modernization:** A key focus was on the modernization and expansion of water, agricultural, and energy infrastructure to meet growing demand and ensure long-term sustainability. The workshop explored practical steps for upgrading aging infrastructure and integrating new technologies, particularly in water management and energy generation.
- 4. Knowledge Exchange and Capacity Building:** The workshop fostered the exchange of knowledge and best practices among stakeholders, enhancing their understanding of sectoral challenges and potential solutions. It also provided valuable capacity-building opportunities, equipping participants with the skills and tools, facilitated networking and dialogue needed to drive change in their respective sectors. These connections are crucial for promoting the nexus approach, sustainable financing, improving governance, and encouraging private sector involvement in the development of critical infrastructure.
- 5. Sustainable Water Management:** The workshop addressed the urgent need for improvements in water management, focusing on efficient irrigation systems, water conservation, and the role of innovative technologies in optimizing water use. By implementing the strategies discussed, Uzbekistan can achieve more equitable access to clean water, improve sanitation, and boost agricultural productivity while minimizing environmental impacts.
- 6. Economic and Social Development:** The outcomes of the workshop are expected to contribute significantly to Uzbekistan’s sustainable economic growth. By addressing the interconnected challenges in agriculture, water, and energy, the country can enhance food security, improve energy security, and foster overall economic development, leading to a more resilient and prosperous future.

## INTRODUCTION

The interconnection between water, agriculture, and energy is crucial for sustainable development in Uzbekistan. These sectors are interdependent, so challenges in one area often have cascading effects on the others. For instance, water scarcity impacts agricultural productivity, which in turn affects energy generation and food security. A coordinated approach is needed to address these interconnected issues effectively.

Uzbekistan faces challenges in water management, especially regarding the collection of fees for irrigation. Ineffective revenue collection mechanisms hinder the funds needed for operations and maintenance. Moreover, regulatory barriers and unclear ownership structures limit private sector investment in water infrastructure. Despite reforms, the water sector struggles with financing, exacerbated by economic challenges, climate change, and outdated infrastructure. Critical areas like hydropower, drinking water, sanitation, and irrigation need modernization to ensure long-term financial sustainability.

In agriculture, Uzbekistan's over-reliance on water-intensive crops like cotton exacerbates water scarcity, while unsustainable farming practices degrade soil quality. Climate change threatens food security by altering precipitation patterns and increasing temperatures, which can reduce crop yields. The lack of modern agricultural technologies and investment in infrastructure further limits potential for diversification and resilience. To address these issues, Uzbekistan should continue adopting sustainable farming practices, enhance water efficiency, and promoting agricultural systems resilient to climate change.

The energy sector also plays a vital role in Uzbekistan's development. With much of the energy infrastructure dating back to the 1970s, there is a pressing need to adopt energy-efficient technologies and integrate renewable energy sources. Climate change exacerbates challenges in energy production by increasing the frequency of extreme weather events like droughts and heatwaves, which disrupt hydropower and thermal power generation. Rising temperatures also drive higher energy demand, especially for cooling, straining the existing energy infrastructure. Modernization and investment in renewable energy are essential to improve energy security, reduce emissions, and mitigate climate impacts.

To address these challenges, a research-based workshop for middle level policymakers served as a platform for stakeholders to discuss strategies, share best practices, and explore innovative financing mechanisms. This collaborative effort is key to mobilizing resources and attracting private investment for water infrastructure in Uzbekistan. The CAREC Institute has previously conducted research and policy dialogues on water and climate change, producing key insights into the financing needs and potential for private capital participation in Central Asia. Its recent research publications highlight the urgent need for coordinated climate action, improved financing, and regional cooperation that was discussed during the workshop.

## OBJECTIVES OF THE WORKSHOP

The workshop's specific objectives were to:

- Present CAREC Institute's recent research findings to national policymakers.
- Facilitate an open dialogue among leading experts and the private sector on long-term sustainable agriculture, energy and water sector financing solutions.

- Discuss, analyze, and select the practical implications of sector financing challenges and opportunities.
- Foster collaboration among stakeholders to overcome challenges.
- Further explore policy recommendations to the government by leveraging possible synergies to play the role of social regulator.

## TARGET AUDIENCE

The workshop brought together a wide range of officials and stakeholders who were directly involved in investing, operating, and policymaking within Uzbekistan’s water, agriculture, and energy sectors.

The workshop featured key government stakeholders, including the Ministry of Water Resources of the Republic of Uzbekistan, which was responsible for managing and ensuring the sustainable use of the country’s water resources. Similarly, representatives from the Ministry of Agriculture of the Republic of Uzbekistan brought their expertise in enhancing agricultural productivity while ensuring environmental sustainability. The Ministry of Energy of the Republic of Uzbekistan was also represented, focusing on energy policy and the country’s transition to renewable energy sources.

Representatives of regional authorities participated to provide valuable insights into local challenges and opportunities. Their inclusion ensured that regional perspectives were taken into account when developing strategies that affected different areas of the country.





Representatives from financial institutions, international organizations, and academia played a pivotal role in the discussions, contributing valuable insights into innovative solutions and best practices. Their input was instrumental in shaping policy recommendations and strategies that were not only technically sound but also adaptable to Uzbekistan’s specific challenges and opportunities. This was crucial for ensuring the long-term sustainability of projects across the country.

By engaging such a diverse group of stakeholders, the workshop aimed to foster collaboration, build cross-sector partnerships, and develop actionable strategies for advancing sustainable funding and attracting private capital to Uzbekistan’s water, agriculture, and energy sectors. This helped in creating a shared understanding and cooperative framework that would drive sustainable development and address the complex challenges facing the nation.

## WORKSHOP PROGRAM

### AGENDA OVERVIEW

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#### DAY 1: WATER

The workshop began with opening remarks from Country Director of the ADB Uzbekistan Resident Mission, and Head of the IFAS Agency, setting the stage for discussions on climate resilience. A keynote presentation on “Climate Change and Its Impact on Agriculture, Energy, and Water in Uzbekistan” provided a foundational understanding of the interconnected challenges faced by these sectors, emphasizing the need for integrated solutions. Session I focused on water financing gaps in Uzbekistan, highlighting current management practices and the need for strategic planning to address these gaps. Session II followed with the presentation of a water financing action plan aimed at enhancing water management and sustainability by addressing identified gaps. Session III explored opportunities for regional cooperation, linking the need for collaborative efforts in financing with earlier discussions on water management. Finally, Session IV presented case studies that illustrated real-world applications of financing solutions in the water sector, reinforcing the theoretical frameworks discussed throughout the workshop.

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#### DAY 2: AGRICULTURE

Session V has focused on financing climate-resilient agriculture, emphasizing the critical connection between sustainable financing and water management due to agriculture’s heavy reliance on water resources. Participants then engaged in group work involving a SWOT analysis to identify investment opportunities, promoting collaboration and the practical application of concepts discussed earlier. Session VI presented existing national policy frameworks and proposed reforms, highlighting the regulatory context essential for supporting climate-resilient agriculture and linking back to financing discussions. Session VII showcased innovative agricultural practices through case studies, illustrating how theoretical frameworks and policy recommendations can be transformed into actionable strategies. Finally, Session VIII provided policy recommendations that synthesized insights from previous sessions, proposing actionable steps to enhance agricultural resilience.

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#### DAY 3: ENERGY

The third day of the workshop continued with Session IX, where the CAREC Institute’s Climate Inaction Report highlighted the interconnectedness of energy, water, and agriculture, emphasizing the need for a holistic approach to addressing climate challenges. Session X explored innovative

financing mechanisms for energy projects, linking the need for investment in energy to earlier discussions on sustainable practices in water management and agriculture. Session XI focused on national policy frameworks for sustainable energy, connecting energy financing with the regulatory frameworks necessary to support sustainable energy initiatives and reinforcing the importance of cohesive policies across sectors. The final session as the panel discussion examined Water-Agriculture-Energy Nexus Approaches, synthesizing insights from previous sessions to emphasize the need for an integrated approach to enhance climate resilience across these sectors. Closing remarks summarized the key insights and outlined next steps, reinforcing the interconnected nature of the discussions and the importance of collaborative efforts moving forward.

## SESSION BREAKDOWN

### OPENING SESSION

#### **Opening Speech by Ms. Kanokpan Lao-Araya, Country Director, ADB Uzbekistan Resident Mission**

Distinguished guests, esteemed colleagues, and valued partners,

It is a great honor to stand before you today at the opening of this important workshop on 'Advancing Climate Resilience in Uzbekistan's Water, Agriculture, and Energy Sectors through Sustainable Financing and Private Investment.' I would like to extend my warmest greetings to all participants, especially to our partners from the Government of Uzbekistan, the CAREC Program, the CAREC Institute, and various stakeholders who have gathered here to address the pressing challenges posed by climate change.

I would like to highlight the significant role of the Asian Development Bank (ADB) as one of Uzbekistan's leading development partners. In 2023, ADB's support has been crucial in guiding Uzbekistan's transition towards a low-carbon, inclusive, and market-driven economy. This initiative aligns closely with the country's national development strategy and its key priority areas, which include:

- Governance and Public Administration Reforms – Strengthening the foundations of effective governance.
- Economic Development – Encompassing essential structural reforms, enhancing private ownership and entrepreneurship, and improving transport and trade connectivity.
- Social Development – Fostering a more equitable society.

The Government of Uzbekistan is committed to reducing its state footprint by empowering a dynamic private sector. In this transformative journey, the ADB serves as a vital partner, offering policy advice, capacity-building initiatives, and projects that support green transitions, promote private sector development, reduce economic and social disparities, and enhance regional cooperation and integration.

As of December 31, 2023, the ADB has committed an impressive total of \$12.4 billion to Uzbekistan through 254 public sector loans, grants, guarantees, and technical assistance. Currently, ADB's sovereign portfolio in Uzbekistan includes 30 loans, 1 grant, and 2 sovereign guarantees, totaling \$4.19 billion.

As we embark on this collaborative journey, I want to take a moment to reflect on the ongoing partnership activities between the ADB and the Government of Uzbekistan under the Central Asia

Regional Economic Cooperation (CAREC) Program. Our collaboration has been pivotal in fostering sustainable development and enhancing regional cooperation across various sectors.

Since the inception of the CAREC Program, we have witnessed significant progress in addressing the diverse challenges that Central Asia faces. The ADB has been a steadfast partner in supporting Uzbekistan's development goals, especially in water management, agricultural productivity, and energy security. Our joint efforts aim to create a resilient and sustainable future for the people of Uzbekistan.

In recent years, we have initiated several projects aimed at enhancing climate resilience and promoting sustainable financing. For instance, our collaborative efforts have included developing integrated water resource management strategies, which are essential for the efficient use of water resources in agriculture and energy production. These strategies not only tackle immediate water scarcity issues but also lay the foundation for long-term sustainability.

Moreover, we are actively promoting innovative financing mechanisms to attract private investment into critical infrastructure projects. By leveraging public-private partnerships, we aim to mobilize the necessary resources to strengthen the resilience of Uzbekistan's water, agriculture, and energy sectors. This workshop provides a platform to further explore these financing solutions and share best practices that can be tailored to our local context.

As we know, climate change poses significant risks to our economies, ecosystems, and communities. The increasing frequency and intensity of extreme weather events, such as droughts and heatwaves, threaten the very foundations of our agricultural and energy systems. It is imperative that we work collaboratively to develop strategies that not only mitigate these risks but also enhance our capacity to adapt to changing climatic conditions.

Recent research findings from the CAREC Institute, which is the knowledge hub of the CAREC Program, underscore the urgent need for coordinated efforts to enhance climate resilience. By fostering collaboration among stakeholders, we can identify innovative solutions to address the unique challenges faced by Uzbekistan. This workshop is an opportunity for meaningful dialogue, knowledge sharing, and partnership building that will drive positive changes.

I encourage all participants to engage actively in the discussions over the next few days. Your insights, experiences, and expertise are invaluable as we strive to develop actionable plans for sustainable financing mechanisms in Uzbekistan's water, agriculture, and energy sectors. Together, we can create a roadmap that not only addresses immediate challenges but also paves the way for a sustainable and resilient future.

In closing, I want to express my gratitude to the Government of Uzbekistan for its unwavering commitment to sustainable development and its partnership with the ADB. I also extend my appreciation to the CAREC Institute for its leadership in organizing this workshop and its ongoing efforts to promote regional cooperation.

Let us seize this opportunity to collaborate, innovate, and inspire one another as we work toward a more resilient Uzbekistan.

Thank you for your attention, and I look forward to the fruitful discussions ahead.

## **Opening Speech of Mr. Vadim Sokolov, Head of the IFAS Agency, Vice-President of ICID**

Dear participants of the workshop on ‘Advancing Climate Resilience in Uzbekistan’s Water, Agriculture, and Energy Sectors through Sustainable Financing and Private Investment,’ it is my pleasure to welcome you today.

As we gather here, we are reminded of the pressing challenges posed by human-caused global warming, which has led to an increase in the average air temperature by 1.1°C since 1850. This rise has resulted in unprecedented changes in the Earth’s climate. And according to Uzhydromet data, Uzbekistan has experienced an average annual temperature increase of about 1.6°C from 1880 to the present. This rate is notably higher than the global average. Experts predict that by 2030-2050, the air temperature in our region may rise by an additional 1.5-3°C.

The impacts of climate change on our people, economic sectors, and ecosystems are more severe than we anticipated, and the risks will escalate with every fraction of a degree of warming. While adaptation measures can significantly enhance our resilience, it is clear that we need more funding to scale these solutions effectively.

Over the next three days, we will engage in discussions focused on ensuring sustainable financing, including the vital involvement of the private sector in implementing adaptation measures for Uzbekistan’s key economic sectors.

I encourage all participants to engage actively in these discussions. I would also like to take this opportunity to express our gratitude to our colleagues from the Asian Development Bank, the CAREC Institute, and other partner organizations for their invaluable assistance in organizing this seminar.

Wishing everyone a productive and successful workshop!

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### **KEYNOTE PRESENTATION ‘CLIMATE CHANGE AND ITS IMPACT ON AGRICULTURE, ENERGY AND WATER IN UZBEKISTAN’**

#### **By Dr. Asif Razzaq, Senior Research Specialist, CAREC Institute**

One of the central themes of the presentation was the distinction between global and local solutions to climate change. While the issue of climate change is undeniably global, the presentation underscored the importance of developing effective solutions that are localized. This approach acknowledges that different regions have unique challenges and opportunities, particularly in the context of Central Asia. By focusing on local solutions, stakeholders can better address the specific impacts of climate change on their communities, economies, and ecosystems.

The presentation also highlighted the significance of climate commitments and the need for countries to adopt robust policies aimed at mitigating climate change. It discussed the role of international agreements and national strategies in guiding efforts to reduce greenhouse gas emissions and promote sustainable practices. The importance of aligning local initiatives with global climate goals was emphasized, as this alignment can enhance the effectiveness of local actions and attract international support and funding.

Another critical topic addressed was the impact of fossil fuel subsidies on climate change and economic sustainability. The presentation outlined how these subsidies can hinder the transition to renewable energy sources and contribute to increased greenhouse gas emissions. It called for a

reevaluation of subsidy policies to promote cleaner energy alternatives and encourage investments in sustainable technologies. By redirecting financial resources from fossil fuels to renewable energy, the countries can enhance their energy security and reduce their carbon footprint.

The presentation also introduced the Carbon Border Adjustment Mechanism (CBAM) and its implications for Uzbekistan. As countries around the world implement measures to reduce carbon emissions, CBAM could affect trade dynamics and competitiveness. The workshop encouraged participants to consider how Uzbekistan can adapt to these changes and leverage opportunities for green innovation and sustainable development.

Throughout the presentation, key statistics were shared to illustrate the current state of climate change impacts on Central Asia's water, agriculture, and energy sectors. For instance, it was noted that climate change is projected to significantly affect hydropower production. The agriculture sector, which employs a significant portion of the population, is also expected to face challenges, including reduced crop yields due to changing climate conditions.

Investment priorities were discussed as a crucial component of addressing climate change. The presentation highlighted the need for substantial financial resources to implement adaptation and mitigation measures. Stakeholders were encouraged to identify and prioritize investments that would enhance resilience in the face of climate-related challenges, particularly in water management, agricultural practices, and energy production.

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## SESSION I 'OVERVIEW OF CURRENT MANAGEMENT PRACTICES AND KEY ASPECTS OF WATER FINANCING GAPS IN UZBEKISTAN'

**By Dr. Georg Petersen, International Consultant**

The presentation by Dr. Georg Petersen provided a comprehensive overview of the current management practices and financing gaps in Uzbekistan's water sector. It highlighted the critical challenges faced by the sector, including inefficient water use, water quality degradation, and the need for innovative financing mechanisms. The presentation was structured around key themes, including situational analysis, financial management, and recommendations for improvement across various sub-sectors.

The presentation began with a situational overview of the water sector in Uzbekistan, emphasizing the significant issues of inefficient water use and water quality degradation. Traditional irrigation methods and outdated infrastructure contribute to substantial water losses, which diminish overall productivity. Additionally, pollution from agricultural runoffs, industrial effluents, and domestic wastewater poses serious risks to both human health and ecosystems. The presentation also addressed the complexities of transboundary water management.

Dr. Petersen outlined the financial management strategies currently employed in the water sector. Key strategies include the implementation of cost-recovery mechanisms through cost-reflective water tariffs, which aim to ensure financial sustainability and incentivize efficient water use. The presentation advocated Public-Private Partnerships (PPPs) to leverage private sector expertise and financing for the development and operation of water infrastructure. Furthermore, it emphasized the importance of international cooperation in seeking funding and technical assistance to support water sector projects.

Innovative financing mechanisms, such as water bonds and green bonds, are also explored as potential solutions to mobilize additional resources. Strengthening the institutional capacity of water

management institutions was highlighted as a critical step to effectively manage water resources and implement necessary reforms.

There is a lack of access to clean drinking water and proper sanitation, particularly in rural areas. The presentation noted that a considerable portion of the population remains underserved. The financial analysis indicates that the depletion of water reserves has led to a decrease in water flow in pipelines and irrigation canals, exacerbating the supply issues.

The presentation concluded with target recommendations for enhancing the water sector. In the land reclamation and irrigation sector, it suggested utilizing green financing options to fund climate-resilient irrigation projects. Developing clear and coherent policies to attract long-term investments in irrigation infrastructure was also recommended. Additionally, establishing insurance or contingency funds could help farmers manage risks related to water scarcity and crop failure.

For the drinking water supply and sanitation subsector, the presentation called for a comprehensive approach to improve access and quality. This includes investing in modern infrastructure, adopting efficient water management practices, and ensuring community engagement in decision-making processes.

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## SESSION II 'OVERVIEW AND KEY ASPECTS OF THE WATER FINANCING ACTION PLAN'

### **By Dr. Georg Petersen, International Consultant**

The second presentation by Dr. Georg Petersen provided a comprehensive overview of the water financing action plan in Uzbekistan, highlighting the existing issues and the potential solutions for sustainable water management. The document emphasizes the importance of addressing financial constraints and improving water pricing structures.

Uzbekistan's water sector financing is primarily supported through government funding, international aid, and PPPs. The government allocated UZS 22 trillion (approximately USD 1.8 billion) for water management over the past two years, with specific allocations for water-saving technology subsidies and infrastructure development. However, the effectiveness of these funds is hampered by low water tariffs and financial constraints, which limit the sector's capacity to address pressing water management issues.

International financial institutions, including the ADB, Islamic Development Bank (IsDB), World Bank (WB), and the European Union (EU), have also provided significant funding for water projects. Notably, the EU has supported the development of a national water management policy framework. Despite this support, challenges remain in adapting international standards to local conditions, which can hinder project implementation.

PPPs are emerging as a viable funding mechanism for urban water and hydropower projects. An example includes Metito Utilities' USD 90 million wastewater treatment plant, developed under a 25-year Build-Operate-Transfer (BOT) framework. However, the success of PPPs relies on strong regulatory frameworks to protect public interests and ensure sustainability.

The presentation identified several key challenges facing Uzbekistan's water sector. Institutional weaknesses, characterized by overlapping responsibilities and bureaucratic inefficiencies, hinder coordinated water management and resource allocation. Additionally, the current pricing structure is distorted, leading to wasteful water use and discouraging conservation efforts. This inefficiency not only impacts revenue generation for the sector but also exacerbates water scarcity issues.

Aging infrastructure poses another significant challenge, as the continued deterioration of water systems results in substantial water losses, adversely affecting agriculture and food security. Furthermore, the lack of implementation of water-saving technologies in industries contributes to the ongoing water conservation challenges faced by the country.

To address these challenges, the presentation suggested several potential financing schemes and reforms. One notable recommendation is the implementation of smart water pricing systems, similar to those in Mexico and Morocco, which incentivize water conservation while ensuring the financial sustainability of water utilities. Progressive pricing models could reward efficient water use and promote equitable access, preventing water costs from becoming a barrier for low-income households.

Moreover, the presentation emphasized the need for a balanced approach to tariff reforms. Rapid increases in water tariffs could disproportionately affect vulnerable populations, necessitating careful consideration of equity alongside financial sustainability.

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### SESSION III 'EXPLORING OPPORTUNITIES FOR REGIONAL COOPERATION IN SUSTAINABLE FINANCING AND PRIVATE CAPITAL PARTICIPATION'

#### **By Dr. Georg Petersen, International Consultant**

The third presentation by Dr. Georg Petersen emphasized the need for regional cooperation and innovative strategies to address the multifaceted issues surrounding water management in the region.

Central Asian countries share a common history under the Soviet Union, where water security was managed as a multidimensional issue encompassing energy, agriculture, and environmental concerns. During this era, upstream countries supplied water for irrigation to downstream countries in exchange for energy resources like coal, oil, and gas. However, following the dissolution of the Soviet Union in 1991, the centrally planned systems for water and energy management were disrupted, leading to disputes over resource allocation. The presentation highlighted that climate change and population growth exacerbate these challenges, with projections indicating an increase in the population from 77 million to 110 million by 2050, further straining water resources.

The current state of water resources in Central Asia is characterized by increasing demand from the hydropower and irrigation sectors, compounded by the effects of climate change and outdated water distribution systems. The presentation underscored the urgent need for regional actions to mitigate these issues, as the quantity and quality of water resources are under significant pressure. The discussion pointed to the necessity of modernizing water management practices and enhancing the efficiency of water use across the region.

To address the ongoing challenges, the presentation outlined several key strategies for rebuilding dialogue and cooperation among Central Asian countries. Establishing diplomatic dialogues, particularly between Uzbekistan and other members of the Interstate Commission for Water Coordination (ICWC), is crucial for addressing core grievances and rebuilding trust. The facilitation of informal dialogues through technical working groups is recommended to explore mutually acceptable solutions. Additionally, involving neutral third-party mediators, such as international organizations or regional experts, can help navigate complex disputes.

The presentation also advocated for revising water allocation agreements through comprehensive water needs assessments that consider both hydropower and irrigation requirements. New water-

sharing agreements should prioritize efficient resource use, incorporate climate change adaptation strategies, and include clear dispute resolution mechanisms with periodic reviews.

Dr. Petersen's presentation concluded with several recommendations aimed at strengthening regional cooperation. These include reviewing and enhancing the structure, goals, and long-term strategies of the ICWC, ensuring active involvement from all Central Asian countries in decision-making processes. Establishing alternative resolution mechanisms for regional disputes is also emphasized, alongside acknowledging the roles of external actors like Russia, Afghanistan, and China in shaping regional water strategies.

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## SESSION IV 'FINANCING THE WATER SECTOR IN UZBEKISTAN: PROBLEMS AND SOLUTIONS'

### **By Dr. Yuliy Yusupov, National Consultant**

The presentation by Dr. Yuli Yusupov addressed the pressing challenges and necessary reforms in the water sector of Uzbekistan. It highlighted the critical need for financial sustainability and improved management practices to ensure efficient water distribution and usage, particularly in the context of agricultural demands. The discussion emphasized the importance of transitioning towards a more market-oriented approach, enhancing PPPs, and reforming the existing management systems. As Uzbekistan grapples with water scarcity and the impacts of climate change, the urgency of these reforms becomes increasingly apparent.

The water sector in Uzbekistan faces several challenges, including outdated infrastructure, inefficient water management practices, and a lack of financial resources. The current system relies heavily on state quotas for water allocation, which can lead to inefficiencies and conflicts of interest. The presentation outlined the need for a comprehensive reform strategy that addresses these issues while promoting sustainable water use. Additionally, the over-reliance on irrigation in agriculture exacerbates water scarcity, necessitating a shift towards more efficient irrigation practices and technologies.

A significant focus of the presentation was on achieving financial sustainability within the water sector. This involves expanding non-state financing and gradually transitioning to a payment system for water delivery services, particularly in agriculture. By outsourcing certain economic functions to private entities and linking labor remuneration to performance outcomes, the sector can improve its financial viability and operational efficiency. The proposed reforms aim to enhance the self-financing mechanisms of water management organizations and improve the planning and monitoring of financial flows. Furthermore, the presentation highlighted the importance of attracting private investment to modernize water infrastructure, which is crucial for reducing operational costs and improving service delivery.

The introduction of market mechanisms for water distribution is a critical aspect of the proposed reforms. The current system's reliance on planned quotas restricts farmers' ability to make informed decisions regarding crop selection based on water availability and cost. The presentation advocated for the allocation of long-term water withdrawal quotas that protect users' rights and allow for commercial reassignment of quotas and saved water. This shift towards a more flexible and market-driven approach is essential for optimizing water use and ensuring equitable access. By allowing farmers to trade water rights, the system can promote more efficient water use and encourage investment in water-saving technologies.



The presentation underscored the importance of integrating PPP principles into water delivery mechanisms. By doing so, the sector can reduce water losses, modernize technological infrastructure, and lower delivery costs. The establishment of the Agency for Operation of Water Management Facilities and Water Delivery Services marks a significant step towards implementing these partnerships and enhancing the overall efficiency of the water sector. The successful implementation of PPPs can lead to improved service quality, increased investment in infrastructure, and greater accountability in water management.

Reforming the management system of the water sector is crucial to eliminating conflicts of interest and improving governance. The presentation outlined the need for a clear separation of government functions and the establishment of transparent processes for water allocation and management. By defining the powers, duties, and functions of water management bodies, the sector can operate more effectively and responsively to the needs of its users. Additionally, the introduction of performance-based evaluations for water management organizations can incentivize efficiency and accountability.

The presentation also emphasized the role of technological modernization in improving water management. The state has been investing in water delivery infrastructure, including the concreting of canals, replacement of pumps, and the introduction of digital technologies. These investments are essential for reducing water losses and enhancing the efficiency of water distribution systems. The adoption of smart irrigation technologies and data-driven decision-making can further optimize water use in agriculture, contributing to the overall sustainability of the water sector.

The promotion of water-saving technologies is another critical aspect of the proposed reforms. The government has been providing financial support for the introduction of these technologies, with significant progress made by 2018 and ambitious targets set for 2024. By expanding the area under water-saving technologies, Uzbekistan can significantly reduce water consumption in agriculture and improve the resilience of its water resources. The presentation highlighted the need for continued investment in research and development to identify and implement innovative solutions for water conservation.

By focusing on financial sustainability, introducing market mechanisms, enhancing PPPs, reforming management systems, and investing in technological modernization, Uzbekistan can move towards a more efficient and sustainable water management model. The proposed changes are essential not only for improving water distribution but also for supporting the agricultural sector and ensuring the long-term viability of water resources in the country. The discussion emphasized the urgency of these reforms in the context of growing water scarcity, climate change, and the need for sustainable development in Uzbekistan. As the country navigates these challenges, the successful implementation of the proposed reforms will be critical in securing a sustainable water future for its population and economy.

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## PRESENTATION 'RURAL WATER SUPPLY REFORMS IN UZBEKISTAN'

**Mr. Gayrat Rahimov, Head of the Operation and Development of Drinking Water Supply and Sewerage Systems Department at the Ministry of Construction and Housing and Communal Services**

**Mr. Rustam Muradov, Swiss-funded National Water Resources Management Project**

The presentation on rural water supply reforms in Uzbekistan, delivered by Mr. Gayrat Rahimov from the Ministry of Construction, Housing and Communal Services, and Mr. Rustam Muradov from

the Swiss-funded National Water Resources Management Project, highlighted the significant strides made in improving access to drinking water and sanitation services in rural areas. The discussion focused on the mechanisms of state social orders, public participation, and the roles of various stakeholders in the implementation of these reforms.

The Ministry of Construction and Housing and Communal Economy issues state social orders aimed at enhancing drinking water supply in remote rural areas. These orders emphasize public participation, with a competitive approach to involving non-governmental organizations (NGOs) in project execution. It is encouraged that the public contributes over 30% of the project costs, ensuring community investment and ownership. The operational and maintenance responsibilities are placed on end-users, fostering a sense of accountability and sustainability in water management.

The state social order mechanism involves a structured process where a government authority contracts a non-government non-profit organization to implement projects of social significance. This partnership model not only facilitates the handover of ready-to-use facilities to NGOs but also promotes collaboration between the public and private sectors, enhancing service delivery and infrastructure development.

The presentation detailed specific activities undertaken in the Andijan, Namangan, and Fergana regions during 2021-2022. Notable villages such as Yangi Hayot and Mallachek in Andijan, and Nayman and Oqtepa in Fergana, were highlighted as beneficiaries of these initiatives. The total project funds amounted to 24.4 billion Uz Sum, with significant contributions from both the government and the local population, showcasing a robust financial commitment to improving water supply systems.

The Ministry of Construction and Housing and Communal Economy plays a pivotal role in developing programs, strategies, and master plans for water supply and sanitation. It is responsible for expanding services, conducting scientific research, and maintaining an electronic database for monitoring purposes. The ministry also evaluates the effectiveness of organizations involved in water supply, ensuring compliance with regulatory standards and addressing issues such as water loss and quality control.

A critical aspect of the reforms is the emphasis on public participation. By involving local communities and NGOs in the planning and execution of water supply projects, the government aims to enhance transparency, accountability, and sustainability. This participatory approach not only empowers communities but also ensures that the projects are tailored to meet the specific needs of the population.

The discussion concluded with a focus on the future of rural water supply in Uzbekistan. Continued investment in infrastructure, the expansion of PPPs, and the integration of innovative technologies are essential for sustaining the progress made. The commitment to improving access to clean drinking water aligns with broader national goals of enhancing public health and quality of life in rural areas.

The presentation underscored the importance of collaborative efforts in addressing the challenges of rural water supply in Uzbekistan. Through state social orders, active public participation, and the involvement of various stakeholders, significant improvements have been achieved. The ongoing reforms not only aim to provide immediate access to drinking water but also seek to establish a sustainable framework for water management that can adapt to future challenges. The commitment of the Ministry of Construction and Housing and Communal Economy and the support from

international partners like the Swiss Government are crucial in driving these initiatives forward, ultimately contributing to the well-being of rural communities across Uzbekistan.

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## SESSION V 'AGRICULTURAL SECTOR RESILIENCE AND FACTORS AFFECTING INVESTMENT OPPORTUNITIES IN UZBEKISTAN'

**By Dr. Abdurasul Kayumov, International Consultant**

The session has started with an exercise on the resilience of Uzbekistan's agricultural sector and the factors influencing investment opportunities which provided a comprehensive overview of the strengths, weaknesses, opportunities, and threats shaping the sector. Participants began with an introductory segment, where they gained foundational knowledge about Uzbekistan's agricultural landscape. This was followed by group work, during which four small groups analyzed and discussed the key factors affecting the sector. They identified strengths such as fertile soil, a favorable climate, and a strategic location for trade, but also highlighted weaknesses like outdated infrastructure, heavy reliance on water-intensive crops, and underdeveloped supply chains. The groups also explored opportunities for growth, including crop diversification, organic farming, and expanding export markets for high-value products. In parallel, they discussed threats such as climate change and water scarcity, which could disrupt agricultural productivity and investment flows. Each group then presented its findings, offering a nuanced view of how these factors interacted and influenced investment potential in Uzbekistan's agricultural sector. The presentation phase allowed participants to share diverse insights on improving resilience and seizing opportunities. Finally, the Q&A session fostered further exploration of practical solutions to the challenges discussed, helping generate actionable strategies that could enhance the sector's attractiveness to investors while building long-term sustainability and growth.

Following the exercise, Dr. Abdurasul Kayumov presented on 'Innovative Financing Mechanisms and Investment Opportunities for Sustainable Agricultural Projects.' The discussions highlighted the critical importance of the agricultural sector in Uzbekistan, the challenges it faces, and the potential pathways for sustainable development through effective financing strategies.

Uzbekistan's agricultural sector is a cornerstone of its economy, contributing significantly to the national GDP and providing employment for a large portion of the population. However, the sector is currently grappling with several challenges, including inadequate infrastructure, low productivity, and inefficient water usage. Agriculture consumes approximately 90% of the country's water resources, and Uzbekistan ranks among the bottom 20 countries globally in terms of water productivity, with a stark contrast between its water productivity (\$0.6 per cubic meter) and the global average (\$15 per cubic meter).

The workshop identified key challenges in agricultural financing, including limited access to financial resources for farmers and entrepreneurs, insufficient investment in rural infrastructure, and a lack of innovation in agricultural practices. The public sector primarily funds large-scale infrastructure projects, which are essential for improving irrigation systems and rural transport networks. Additionally, the low public investment in agricultural research and development (averaging only 0.02% of agricultural value added from 2016-2018) compared to middle-income (1.0%) and high-income countries (2.5%) further exacerbates the challenges faced by the sector.

The discussions categorized agricultural financing into four main clusters:

1. Finance for Inputs and Production: This includes funding for seeds, fertilizers, machinery, and marketing activities.

2. Value-Chain Actors: Recognizing the interlinked activities in agriculture, from supply to consumer.
3. Infrastructure Development: Emphasizing the need for improved rural transport, irrigation, and water supply systems.
4. Research and Development: Highlighting the importance of generating agricultural technology and knowledge to drive growth.

The participants explored various innovative financing mechanisms that could be employed to address the identified challenges. These include:

- PPPs: Encouraging collaboration between the government and private sector to fund infrastructure projects and agricultural initiatives.
- Microfinance and Cooperative Models: Providing small-scale farmers with access to credit and resources to enhance productivity and sustainability.
- Investment in Technology and R&D: Fostering innovation through increased funding for agricultural research and development, which is crucial for long-term growth and resilience.

The session underscored the urgent need for a comprehensive approach to agricultural financing in Uzbekistan. By addressing the challenges of inadequate infrastructure, low productivity, and limited access to financial resources, stakeholders can create a more resilient agricultural sector. The discussions highlighted the importance of collaboration among government, private investors, and international organizations to develop sustainable financing mechanisms that will not only enhance agricultural productivity but also contribute to the overall economic growth and climate resilience of Uzbekistan. The commitment to saving at least 7 billion cubic meters of water by 2026 through efficiency improvements is a testament to the potential for positive change in the sector.

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## PRESENTATION 'EXISTING POLICIES AND PROPOSED REFORMS TO SUPPORT CLIMATE-RESILIENT AGRICULTURE IN UZBEKISTAN'

**By Dr. Shakhboz Akhmedov, National Consultant**

This presentation discussed the challenges posed by climate change to Uzbekistan's agricultural sector, explored existing policies and proposed reforms to support climate-resilient agriculture in Uzbekistan and identified potential solutions and next steps for ensuring the sector's sustainability and resilience.

Dr. Shakhboz Akhmedov introduced the background by highlighting the water security challenges in Central Asia, particularly the vulnerability of water resources to climate change and discussing the potential impact of climate change on agricultural productivity and the need for adaptation measures.

Dr. Shakhboz Akhmedov provided an overview of Uzbekistan's agricultural sector, emphasizing its importance to the national economy and its reliance on water resources. He also highlighted the shift towards higher-value crops and the need for diversification to enhance resilience.

He presented a comprehensive overview of existing laws, presidential decrees, and resolutions related to agriculture and environmental protection in Uzbekistan. He highlighted key strategies such as the Agricultural Development Strategy for 2020-2030 and the Green Economy Transition Strategy for 2019-2030.

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## SESSION VII 'INNOVATIVE AGRICULTURAL PRACTICES FOR CLIMATE RESILIENCE'

### By Dr. Shakhboz Akhmedov, National Consultant

In this session, Dr. Shakhboz Akhmedov explored the potential of Generative AI (Gen AI) in agriculture, discussing its applications in yield management, carbon emission reduction, and personalized marketing on Innovative Agricultural Practices.

Dr. Shakhboz Akhmedov identified several key actions for advancing climate-resilient agriculture in Uzbekistan:

- **Adopting climate-resilient practices:** This includes utilizing alternative energy sources, improving water access, and implementing water-efficient technologies.
- **Improving water management:** Prioritizing less water-intensive crops and implementing innovative water-saving techniques.
- **Strengthening capacity building:** Establishing drought risk management systems, early warning systems, and knowledge-sharing platforms for farmers.
- **Developing community development plans:** Integrating sustainable agricultural systems with social infrastructure improvements to address food security and health needs.
- **Promoting regional cooperation:** Enhancing collaboration among Central Asian countries to optimize water resource utilization and share best practices in sustainable agriculture

Session VI and VII concluded with a call for urgent action to address the challenges facing Uzbekistan's agricultural sector due to climate change. The participants emphasized the need for a comprehensive approach that combines policy reforms, technological innovation, and capacity building to ensure the sector's sustainability and resilience in the face of a changing climate.

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## SESSION VIII 'POLICY RECOMMENDATIONS FROM THE CAREC INSTITUTE CLIMATE INACTION REPORT: BUILDING CLIMATE-RESILIENT AGRICULTURE'

### By Dr. Abdurasul Kayumov, International Consultant

The presentation by Dr. Abdurasul Kayumov focused on sharing findings and policy recommendations from the CAREC Institute's recent project on climate inaction, which explores the interconnectedness of water, agriculture, and energy sectors in Central Asia. The project, which ran from May 1 to November 31, 2024, was designed to produce two key reports: one analyzing the implications of climate inaction across the water-agriculture-energy nexus and the other focusing on an investment gap analysis for these sectors in Central Asia. The research methodology included a two-scenario approach based on Shared Socioeconomic Pathways and Representative Concentration Pathways, allowing for a comprehensive understanding of potential future scenarios. The project was funded by the ADB and supported by a team of national consultants who have contributed to data collection and analysis.

The reports suggest a series of recommendations aimed at enhancing climate resilience across various sectors:

#### Water Sector:

- Regulatory reforms and increased water-use efficiency are essential for sustainable management.

- Modernizing infrastructure and improving maintenance and monitoring of water facilities will enhance resilience.
- Implementing flood control measures and enhancing climate risk-related decision-making are critical for preparedness.

#### Energy Sector:

- Accelerating market transitions through reforms and promoting energy efficiency programs will strengthen the sector.
- Harnessing solar and wind energy opportunities is vital for sustainable energy development.
- Building climate-resilient energy infrastructure will ensure long-term sustainability.

#### Agriculture Sector:

- Introducing new approaches in wheat cultivation and diversifying crop production are necessary to adapt to changing climate conditions.
- Promoting climate-smart agricultural practices and improving livestock management will enhance food security.
- Agroforestry and soil conservation practices will contribute to sustainable land management.

#### Regional Cooperation:

- Establishing a regional climate change framework and promoting joint investments in transboundary infrastructure will enhance collaboration.
- Expanding regional data-sharing practices will facilitate informed decision-making and resource management.

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### SESSION IX 'KEY INSIGHTS FROM THE CAREC INSTITUTE'S CLIMATE INACTION REPORT ON ENERGY'

#### **Dr. Abdurasul Kayumov, International Consultant**

The session aimed to share the critical insights from the CAREC Institute's Climate Inaction Report, emphasizing the need for sustainable financing and private investment to tackle climate challenges. The presentation highlighted several pressing issues related to climate change and its impact on Uzbekistan's energy supply and demand balance. The country faces vulnerabilities in maintaining energy supply while striving for carbon neutrality, particularly under the RCP 2.5 scenario. Projections indicate a significant increase in electricity demand by 2050, necessitating urgent action to enhance the carbon intensity of the power sector.

The workshop outlined several **short-term recommendations** aimed at fostering immediate climate action:

Cross-Cutting Climate Action: Participants discussed the importance of adopting more ambitious Nationally Determined Contributions and carbon neutrality targets to align with global climate goals.

Private Sector Development: The need to accelerate existing reform programs was emphasized to improve business dynamism and strengthen the investment environment, thereby enhancing private sector participation in climate initiatives.

Energy Pricing Reforms: Completing energy sector subsidy reforms was identified as crucial for creating a more sustainable energy market.

Energy Efficiency in Buildings: The implementation of energy efficiency programs in buildings was highlighted as a priority to reduce overall energy consumption.

Renewable Energy Generation: Scaling up competitive and privately driven renewable energy generation was discussed as a vital step towards a sustainable energy future.

Climate-Smart Agriculture: Strengthening incentives for investments in climate-smart agriculture was deemed essential for enhancing resilience in the agricultural sector.

Social Protection Systems: The workshop underscored the need for adaptive social protection systems to enable faster crisis response and greater resilience among vulnerable populations.

In addition to short-term actions, the discussion also covered **medium-term strategies:**

Green Financial Regulation: Developing systems to manage financial sector risks associated with climate change was deemed necessary to ensure stability.

Green Financial Products: The creation of new financial markets and products aimed at sustainability was encouraged to attract private investment.

Disaster Risk Financing Framework: Establishing a financing framework to manage climate risks and prioritize critical needs was highlighted as a strategic approach.

Market-Based Incentives: Implementing market-based incentives, such as a carbon tax, was discussed as a means to encourage sustainable practices.

Public Investment Management: Mainstreaming climate concerns into public investment decisions was emphasized to ensure that climate resilience is integrated into development planning.

Empowering Local Governance: The importance of empowering local governance structures, particularly mahallas, to promote local climate action was recognized as a key factor in enhancing community resilience.

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## PRESENTATION 'INNOVATIVE FINANCING MECHANISMS FOR ENERGY PROJECTS'

**By Dr. Asif Razzaq, Senior Research Specialist, CAREC Institute**

The presentation focused on CAREC Institute's recent research about the current landscape of renewable energy, the challenges faced, and the potential pathways for attracting foreign direct investment (FDI) to foster a robust renewable energy ecosystem in Central Asia.

The research highlights that Central Asia is endowed with significant renewable energy resources, particularly in wind and solar energy. The region's geographical advantages provide a unique

opportunity to harness these resources for sustainable development. Countries such as Kyrgyz Republic and Tajikistan boast abundant hydro-resources, while all Central Asian nations have substantial potential in wind and solar energy generation. However, despite this potential, the renewable energy sector has faced numerous challenges, including inadequate infrastructure, regulatory barriers, and limited access to financing. To address these issues the research suggests a comprehensive framework for assessing FDI in renewable energy and identifying key sub-sectors for investment, such as wind, solar, small-scale hydro, and biomass.

The study also highlights several challenges that must be addressed to realize the full potential of renewable energy in Central Asia. One significant challenge is the prevailing disparity in non-hydro renewable energy deployment across the region. Some countries have made significant strides in solar and wind energy, while others lag behind due to various factors, including lack of investment, insufficient regulatory frameworks, and limited technical expertise.

Moreover, the need for substantial financial investment—estimated at \$1.4 trillion from 2020 to 2050 to transition to a net-zero scenario—underscores the urgency of mobilizing resources for renewable energy projects. This financial challenge necessitates innovative financing mechanisms, such as PPPs, green bonds, and the involvement of multilateral development banks, to attract the necessary capital.

As Central Asia moves forward, the commitment to innovative financing mechanisms and stakeholder engagement will be crucial in realizing a sustainable energy future. The collaborative efforts initiated during this workshop will undoubtedly contribute to the region's economic growth and environmental sustainability. By addressing the challenges identified and leveraging the opportunities presented, Central Asia can emerge as a leader in renewable energy, setting an example for other regions to follow in the global transition towards a sustainable energy landscape.

The central theme of the study is the establishment of the Investment Promotion Programme, which will seek to enhance teamwork among renewable energy project stakeholders. The Programme will have several key objectives, including attracting FDI in prioritized renewable energy sub-sectors, developing a robust renewable energy ecosystem, and strengthening the capacity of national investment agencies. The discussions highlighted the importance of aligning investment strategies with climate targets and ensuring that the framework reflects stakeholder inputs. This collaborative approach is essential for building trust and fostering a conducive environment for investment.

The study concludes with a clear set of next steps, including agreeing on actions with the pilot country, detailing the Investment Promotion Programme, and securing resources for its execution. The implementation of the Programme is expected to take place over the next 1-3 years, with regular workshops and seminars planned to share lessons learned and best practices. Additionally, an annual investment forum will be organized to showcase investment opportunities across all participating countries, further promoting collaboration and knowledge sharing. In this regard, the emphasis on continuous capacity building becomes vital for the long-term success of the renewable energy initiatives in Central Asia.

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## SESSION XI 'EXISTING POLICIES & PROPOSED REFORMS TO SUPPORT SUSTAINABLE ENERGY IN UZBEKISTAN'

**By Dr. Umidbek Narzullaev, National Consultant**

The presentation offered an in-depth examination of the current policies and proposed reforms designed to promote sustainable energy in Uzbekistan. It emphasized the significance of renewable



energy sources, PPPs, and regulatory frameworks that support the transition to a more sustainable and efficient energy sector.

A key focus of the discussion was the expansion of renewable energy sources throughout various regions of Uzbekistan. Initiatives highlighted include the installation of renewable energy systems in government facilities and financial assistance for individuals looking to invest in renewable energy technologies. Importantly, the government has implemented compensation schemes aimed at households in need, encouraging the adoption of solar and wind energy solutions. These schemes feature interest-free installment payment options over three years, thereby enhancing accessibility to renewable energy for the broader population.

The introduction of regulations for small-scale renewable energy projects establishes compensation rates based on the installed capacity of these systems, incentivizing both individuals and businesses to invest in solar and wind energy. The tiered compensation structure offers higher payments for larger installations, which is anticipated to drive growth within the renewable energy sector.

The presentation also highlighted the strategic role of PPPs in power generation as a means to attract investment and expertise. Dr. Umidbek Narzullaev recommended an open tender process to ensure transparency and competitiveness in selecting investors instead of signing the bilateral agreements. He emphasized that while PPPs can provide immediate solutions, the ultimate objective should be the creation of a free power market that fosters competition and innovation.

Collaboration with international financial institutions such as the IFC, ADB, and EBRD was underscored as vital. These partnerships are essential for obtaining funding and technical support necessary for the successful execution of renewable energy projects and the modernization of infrastructure.

Additionally, the presentation addressed Uzbekistan's commitment to reducing greenhouse gas emissions and increasing the proportion of "green" energy in its energy mix. The country aims to achieve a 35% reduction in emissions by 2030 and to elevate the share of renewable energy to 40% by 2050. This ambitious goal reflects the government's commitment to tackling climate change and promoting sustainable development.

Beyond renewable energy initiatives, the discussion also covered the modernization of water management systems. The government intends to attract investors to enhance pump stations with energy-efficient technologies and to implement solar plants aimed at reducing energy consumption by 20%. This holistic approach not only improves energy efficiency but also supports sustainable water management practices.

Overall, the presentation provided a comprehensive overview of Uzbekistan's initiatives to transition towards a sustainable energy future. By prioritizing renewable energy deployment, regulatory reforms, public-private partnerships, and international collaboration, the country is well-positioned to achieve its environmental objectives and bolster energy security. The commitment to reducing greenhouse gas emissions and increasing the share of renewable energy illustrates a proactive stance in addressing climate change challenges while promoting economic growth. As Uzbekistan advances these reforms, it will be crucial to monitor progress and adjust strategies to ensure the successful attainment of its sustainable energy goals.

**Moderated by Ms. Rose Shao, Capacity Building Specialist, CAREC Institute**

Over the course of the past three days, participants have engaged in comprehensive discussions about the interconnections between water, agriculture, and energy sectors in Uzbekistan. These sectors are not only fundamental for the sustainable development of the country but are also essential for the well-being of its communities and the prosperity of its economy. The final panel discussion brought together key experts to explore the challenges, opportunities, and strategic approaches for addressing the Water-Agriculture-Energy Nexus in Uzbekistan.

Ms. Rose Shao, the session moderator, opened the discussion by emphasizing the significance of these interconnected sectors and stressing the need for an integrated, collaborative approach. She noted that the sustainable management of water, agriculture, and energy is critical for ensuring long-term development in Uzbekistan and highlighted the importance of partnerships across various sectors to address the challenges and optimize opportunities.

Ms. Rose Shao opened the discussion with a question about how Uzbekistan can develop integrated policy frameworks to address the interdependencies between water, agriculture, and energy. She asked Dr. Asif Razzaq to outline the institutional collaborations necessary for strengthening the Water-Agriculture-Energy Nexus in the country.

Dr. Asif Razzaq responded by stressing the need for a multi-sectoral approach. He pointed out that existing policies in Uzbekistan often focus on individual sectors, but the challenges at the nexus require policies that transcend sector boundaries. He emphasized the importance of strong institutional collaborations between government agencies, local authorities, research institutions, and the private sector. Dr. Asif Razzaq also highlighted that capacity-building and enhancing coordination at the national and regional levels will be crucial for the successful integration of these sectors into a cohesive framework.

Ms. Shao Rose then asked Dr. Georg Petersen to discuss strategies for ensuring the sustainable management of water resources while meeting the energy needs of agricultural practices in Uzbekistan. She inquired about the role of technological innovations, such as precision agriculture and renewable energy, in enhancing the efficiency of the Water-Agriculture-Energy Nexus.

Dr. Georg Petersen acknowledged the critical need for efficient water management, especially in agriculture, which is the largest consumer of water in Uzbekistan. He suggested that precision agriculture, which uses technology to optimize the use of water, fertilizers, and other inputs, could significantly enhance water efficiency. Furthermore, Dr. Georg Petersen highlighted the potential of renewable energy solutions, such as solar and wind power, to support agricultural energy needs without exacerbating the strain on water resources. He emphasized that integrating these technologies could create a more sustainable and resilient nexus.

Ms. Rose Shao moved on to ask Dr. Abdurasul Kayumov about how Uzbekistan's strategies for the Water-Agriculture-Energy Nexus could be adapted to mitigate the impacts of climate change and ensure resilience.

Dr. Abdurasul Kayumov noted that climate change poses significant challenges to the water and agriculture sectors in Uzbekistan, particularly in terms of water scarcity and shifting agricultural patterns. He stressed the importance of developing adaptive strategies that incorporate climate-resilient practices, such as drought-resistant crops, efficient irrigation systems, and integrated water

management. He also mentioned the role of energy efficiency and renewable energy in reducing the carbon footprint of agricultural practices, thus contributing to climate change mitigation.

Ms. Rose Shao then turned to Dr. Georg Petersen with a question about the roles of the public and private sectors in advancing nexus approaches. She asked how partnerships could be fostered to achieve common goals and about the key challenges and opportunities for financing nexus-related projects in Uzbekistan.

Dr. Georg Petersen highlighted the importance of collaboration between the public and private sectors to drive the necessary investments and innovations in the Water-Agriculture-Energy Nexus. He pointed out that public policies should create a supportive environment for private sector involvement, particularly in areas like renewable energy and agricultural technologies. Dr. Georg Petersen also acknowledged the challenges of financing nexus projects, such as high upfront costs and the need for long-term investment, but he emphasized that international funding sources and PPPs could play a crucial role in overcoming these barriers.

Ms. Rose Shao asked Dr. Abdurasul Kayumov to discuss the economic implications of adopting a nexus approach in Uzbekistan, specifically how these could be balanced with the need for sustainable development. She also asked how socio-economic factors, such as rural livelihoods and food security, intersect with the nexus and how policies could ensure equitable outcomes.

Dr. Abdurasul Kayumov explained that adopting a nexus approach could lead to significant economic benefits by optimizing resource use and improving productivity across sectors. However, he cautioned that these benefits must be weighed against the socio-economic impacts on vulnerable communities, particularly in rural areas. He emphasized the need for policies that promote inclusivity and ensure that the benefits of sustainable practices reach marginalized populations. Ensuring food security and improving rural livelihoods must be key components of any nexus-related policy framework.

Finally, Ms. Rose Shao asked Dr. Asif Razzaq about the potential for regional cooperation within the CAREC framework to enhance the Water-Agriculture-Energy Nexus in Uzbekistan. She asked about the specific benefits that could be anticipated from regional collaboration and strategies for maximizing these benefits.

Dr. Asif Razzaq responded by highlighting the importance of regional cooperation in addressing shared challenges, such as water scarcity and energy needs. He pointed out that many of the issues faced by Uzbekistan are regional in nature, and solutions will require collaboration with neighboring countries. Dr. Asif suggested that regional platforms, like CAREC, can foster the exchange of knowledge, best practices, and joint investment in infrastructure projects that benefit multiple countries. He emphasized that strengthening regional partnerships could help ensure more efficient water management, improved agricultural practices, and enhanced energy security across Central Asia.

The panel discussion underscored the complex and interconnected nature of the Water-Agriculture-Energy Nexus in Uzbekistan and emphasized the need for a holistic, integrated approach to addressing the challenges facing these critical sectors. Experts highlighted the importance of collaboration, innovation, and long-term investment in achieving sustainable outcomes. They also noted the significance of adapting strategies to mitigate climate change impacts and ensuring that policies are inclusive and equitable, particularly for rural and vulnerable populations.

## CLOSING REMARKS AND NEXT STEPS

**By Ms. Rose SHAO, Capacity Building Specialist, CAREC Institute**

Ladies and gentlemen, esteemed colleagues,

As we gather here for the final moments of this extraordinary workshop, I am overcome with a sense of accomplishment and hope. The past few days have been a testament to the power of collective intelligence and the collective will to effect change. We have traversed the landscapes of complex challenges, and in doing so, we have mapped out paths to resilience and sustainability.

I would like to extend my heartfelt thanks to our speakers, who brought their invaluable insights and experiences to the table. Your stories, data, and vision have inspired us all and provided a solid foundation for our work ahead. Your dedication to this cause is a beacon that will guide us through the challenges that lie ahead.

To our participants, thank you for your active engagement and for bringing your diverse perspectives. Your questions, comments, and contributions have enriched our discussions and ensured that our strategies are both robust and inclusive. Your commitment to making a difference in Uzbekistan's climate resilience journey is truly commendable.

Our objectives were not just to set goals, but to forge a roadmap that is both practical and visionary. We have set our sights on:

- Crafting comprehensive action plans and strategies for key sectors such as water, agriculture, and energy, while integrating cutting-edge financing solutions and policy recommendations.
- Fostering stakeholder engagement by including governments, private sector entities, and civil society organizations. We recognize that collaboration is essential for propelling these initiatives forward.
- Mobilizing resources to underpin the execution of action plans, including seeking out funding opportunities, forging partnerships, and delving into innovative financing mechanisms.
- Building the capacity of policymakers, practitioners, and stakeholders through training programs, workshops, and knowledge-sharing platforms, arming them with the necessary skills and knowledge.
- Embracing continued research and innovation to maintain our edge. Staying abreast of the latest advancements, technologies, and best practices in climate resilience and sustainable financing is paramount.

Our work is just beginning. The challenges ahead are great, but with the partnerships we have forged and the knowledge we have gained, we are well-equipped to face them. Let us leave here with a shared resolve, a common purpose, and a commitment to action. Let us continue this dialogue, let us collaborate, and let us work hand in hand to build a future where Uzbekistan is not just resilient, but thriving.

Thank you all once again for your participation and your passion. It is my belief that the seeds we have sown here will yield a harvest of progress and prosperity. I look forward to standing alongside each of you as we watch our efforts bear fruit. Warm regards and best wishes to all of you for a future filled with hope and achievement!

## METHODS USED

The methodology for this workshop was designed to foster an interactive and participatory environment, enabling all participants to actively contribute and share their insights. Building on recent research presentations, the sessions encouraged participants to reflect on their own experiences and delve deeper into specific aspects of their area of expertise or responsibility.

The workshop featured presentations by both international and national consultants, who provided valuable insights and context regarding the current state of the water, agriculture, and energy sectors in Uzbekistan. These presentations served as a foundation for our discussions, highlighting best practices and innovative solutions from around the globe while also addressing local challenges.

In addition to the presentations, participants engaged in a SWOT exercise. This activity allowed attendees to collaboratively analyze the current landscape of the sectors in question, identifying key strengths and weaknesses, as well as potential opportunities and threats. The workshop also included group presentations, where participants shared the outcomes of their discussions and the results of the SWOT analysis. The insights gained from this exercise were instrumental in shaping our discussions, encouraging networking and the exchange of knowledge and guiding the development of actionable strategies.

Simultaneous translation in Uzbek, Russian, and English was provided to ensure that all voices could be heard and that language barriers did not hinder the flow of dialogue. This inclusivity played a key role in promoting cross-sectoral collaboration and allowing stakeholders from various backgrounds to engage in meaningful discussions.

By bringing together experts, practitioners, and decision-makers from different sectors, this participatory approach aimed to create a shared understanding of the challenges and opportunities at the intersection of water, agriculture, and energy in Uzbekistan.

## PARTICIPANTS AND ATTENDANCE

One of the challenges faced during the workshop was low participation from ministry representatives, primarily due to their ongoing work commitments and responsibilities, which caused frequent distractions and interruptions. Many participants struggled to dedicate time to the event as they were pulled away by urgent tasks at their offices. To address this issue, it is recommended that future workshops be held in more remote locations, away from participants' regular work environments. Holding workshops in quieter, more secluded settings would minimize distractions, allowing participants to focus fully on the discussions, collaborate more effectively, and engage in meaningful networking. This approach would not only improve participation but also foster a deeper, more productive exchange of ideas, ultimately enhancing the impact of such events.

List of invited participants to the workshop:

### **Uzbekistan Officials**

1. Mr. Bahrom Yusupov, Head of Division of Ecological Diplomacy, Bio Agriculture, and Climate Change
2. Mr. O'tkirbek Rakhimov, Senior Specialist at the Division of Ecological Diplomacy, Bio Agriculture, and Climate Change
3. Mr. Khasan Ochilov, Senior Specialist at the Department of Soil Degradation

4. Mr. Anvar Mukhammadiyev, Senior Specialist at the Department of Modern Irrigation Technologies
5. Mr. Anvarjon Mirzaaliyev, Deputy Head of the Department of International Collaboration
6. Mr. Gulomjon Boypolatov, Deputy Head of the Department of Agriculture in Ferghana Province
7. Mr. Samandar Ergashev, First deputy Head of the Department of Agriculture in Bukhara Province
8. Ms. Farida Kadirkhodjaeva, Chief specialist, Department of implementation of scientific innovations, Ministry of Water Resources
9. Mr. Abror Jumaev, Head specialist, Strategic reforms and analysis, Center for water management reforms
10. Mr. Azem Yaxshiboev, Specialist in Renewables, Energy Audit, Energy Efficiency Department, Ministry of Energy

#### **Other Organizations**

11. Mr. Vadim Sokolov, Director, IFAS Agency
12. Mr. Birodar Burhonjonov, Deputy Project Manager, National Water Resources Management Project in Uzbekistan
13. Mr. Rustam Muradov, Knowledge Management Coordinator, National Water Resources Management Project in Uzbekistan
14. Mr. Matluba Mukhamedova, PR and Gender Specialist, National Water Resources Management Project in Uzbekistan
15. Mr. Zakhid Ibragimov, Business Development Manager for energy projects of UET Consulting
16. Mr. Bekhzod Irismatov, Chief Specialist in Transaction Advisory Services Department of UET Consulting

#### **Resource Persons**

17. Dr. Georg Petersen, General Manager, HYDROC GmbH
18. Dr. Abdurasul Kayumov, International Consultant, CAREC Institute
19. Dr. Asif Razzaq, Senior Research Specialist, Research Division, CAREC Institute
20. Dr. Yuliy Yusupov, Scientific Supervisor, Centre for Economic Development
21. Dr. Shakhboz Akhmedov, Deputy Director, Institute for Advanced International Studies, Uzbekistan
22. Dr. Umidbek Narzullaev, Deputy Director, UET Consulting, Uzbekistan
23. Mr. Gayrat Rahimov, Head, Operation and Development of Drinking Water Supply and Sewerage Systems Department, Ministry of Construction and Housing and Communal Services

#### **Special Guest**

24. Ms. Kanokpan Lao-Araya, Country Director, Uzbekistan Resident Mission, Asian Development Bank

#### **CAREC Institute**

25. Ms. Rose SHAO, Capacity Building Specialist, CAREC Institute
26. Mr. Steven LIU, Capacity Building Specialist, CAREC Institute

#### **Interpreters**

27. Ms. Maryam Gataullina, Uzbekistan
28. Ms. Yelena Avanesova, Uzbekistan

## EVALUATION AND FEEDBACK

The evaluation by resource people of the workshop reveals several key insights regarding participant engagement, areas for improvement, and suggestions for future development.

### **Participant Engagement:**

- Overall, discussions were balanced, indicating a well-rounded approach to the topics presented.
- Topics of significant interest included the reuse of wastewater, innovative technologies for water and energy efficiency, regulatory frameworks, and innovative financing mechanisms. The integration of high technologies into agricultural practices was also highlighted as particularly engaging.

### **Improvements for Future Workshops:**

- Increased attendance from government stakeholders was suggested to enhance the workshop's impact and broaden involvement.
- It was recommended to secure binding confirmations from participants prior to the event and consider offering incentives to boost commitment.
- Clear communication regarding event details, such as location and venue, is essential for ensuring participant attendance.

### **Suggestions for Continuing Development**

- Continuous assessment of the water finance situation and implementation status was proposed, with a recommendation for repeated cycles of evaluation every 3-5 years.
- Organizing additional sessions and extending the workshop to neighboring countries was suggested to further develop the skills and knowledge introduced.
- Future events should maintain a focus on the relevant topics discussed, aligning with Uzbekistan's transitioning economy.

The evaluation indicates a successful workshop with engaged participants, while also highlighting areas for improvement in organization and communication. The suggestions for ongoing development emphasize the importance of sustained learning and collaboration in addressing climate resilience in Uzbekistan.

## CONCLUSION

The workshop on "Advancing Climate Resilience in Uzbekistan's Water, Agriculture, and Energy Sectors through Sustainable Financing and Private Investment" has underscored the critical need for collaborative efforts in addressing the multifaceted challenges posed by climate change. The diverse perspectives and insights shared by participants have enriched the understanding of the interconnectedness of the water, agriculture, and energy sectors, paving the way for innovative solutions and strategies essential for fostering resilience in these vital areas.

Moving forward, it is imperative to remain steadfastly committed to the actionable recommendations outlined during the sessions. Fostering stakeholder engagement, mobilizing resources, and building capacity among policymakers and practitioners will create a robust framework for climate resilience that not only addresses immediate challenges but also lays the

groundwork for sustainable development in Uzbekistan. This commitment will require ongoing dialogue and collaboration among all stakeholders, ensuring that the voices of local communities, government entities, and private investors are heard and integrated into the decision-making processes.

The path ahead may be fraught with obstacles, including financial constraints, regulatory hurdles, and the need for technological advancements. However, the partnerships forged during this workshop and the collective resolve to implement a shared vision provide a strong foundation to navigate these challenges. The collaborative spirit demonstrated by participants serves as a powerful reminder that together, meaningful change can be achieved. The focus should remain on collaboration, innovation, and striving towards a future where Uzbekistan thrives in the face of climate change, ensuring a sustainable and resilient environment for generations to come.

Key outcomes of the workshop included several pivotal areas of focus that will guide efforts moving forward:

- **Innovative Financing Solutions:** Participants were introduced to innovative financing mechanisms, including blended finance, PPPs, and climate finance models. These solutions are essential for bridging the significant investment gap in Uzbekistan’s infrastructure projects, particularly in the water, agriculture, and energy sectors. Leveraging these mechanisms can attract the necessary capital to implement transformative projects.
- **Regulatory and Policy Adjustments:** The workshop highlighted the need for regulatory reforms to enable private sector engagement, especially in the water sector. Discussions emphasized the importance of clearer ownership structures, improved fee collection mechanisms, and policies that incentivize private investment. The role of government in creating an enabling environment for sustainable development is crucial for fostering a vibrant investment climate.
- **Infrastructure Modernization:** A key focus was on the modernization and expansion of water, agricultural, and energy infrastructure to meet growing demand and ensure long-term sustainability. Practical steps for upgrading aging infrastructure and integrating new technologies, particularly in water management and energy generation, were explored. This modernization is vital for enhancing efficiency and resilience in the face of climate variability.
- **Knowledge Exchange and Capacity Building:** The workshop fostered the exchange of knowledge and best practices among stakeholders, enhancing their understanding of sectoral challenges and potential solutions. Valuable capacity-building opportunities equipped participants with the skills and tools needed to drive change in their respective sectors. This knowledge transfer is essential for empowering local actors to implement effective strategies.
- **Strengthened Stakeholder Cooperation:** The event facilitated networking and dialogue between government officials, financial institutions, and private sector representatives, strengthening partnerships and collaboration across sectors. These connections are crucial for promoting sustainable financing, improving governance, and encouraging private sector involvement in the development of critical infrastructure. Working together can create synergies that amplify collective impact.
- **Sustainable Water Management:** The workshop addressed the urgent need for improvements in water management, focusing on efficient irrigation systems, water conservation, and the role of innovative technologies in optimizing water use. Implementing the strategies discussed can lead to more equitable access to clean water, improved sanitation, and boosted agricultural productivity while minimizing environmental impacts. Sustainable water management is a cornerstone of resilience in the face of climate change.



- **Economic and Social Development:** The outcomes of the workshop are expected to contribute significantly to Uzbekistan’s sustainable economic growth. By addressing the interconnected challenges in agriculture, water, and energy, the country can enhance food security, improve energy security, and foster overall economic development, leading to a more resilient and prosperous future. This holistic approach will ensure that economic growth is inclusive and benefits all segments of society.

Transforming aspirations into reality and making a lasting impact on the climate resilience journey of Uzbekistan requires embracing the outcomes of this workshop and committing to collaborative action. By focusing on the actionable recommendations and fostering partnerships, a sustainable future can be paved that not only meets the needs of today but also safeguards the environment and resources for future generations. This journey should be approached with determination and optimism, knowing that collective efforts will yield significant benefits for Uzbekistan and its people.

## RECOMMENDATIONS FOR FUTURE WORKSHOPS

The following recommendations emphasize the importance of collaboration, continuous improvement, and adaptability in addressing the multifaceted challenges of climate resilience in Uzbekistan:

1. **Increased Attendance from Government Stakeholders:** To enhance the workshop's impact, it is essential to broaden the involvement of government representatives. One effective strategy is to hold the workshop in a remote location outside the city, minimizing distractions from their regular work environments and allowing officials to fully engage in the discussions.
2. **Binding Confirmations:** To enhance participant commitment and attendance, a workshop registration system that mandates participants to confirm their attendance well in advance can be introduced. Furthermore, country liaison people should strengthen their close engagement with government offices to facilitate timely participation and ensure that all relevant stakeholders are involved.
3. **Continuous Research on the Water-Agriculture-Energy Nexus:** Ongoing research of the financial situation and implementation status across the three sectors is essential for monitoring progress and pinpointing areas for improvement. It is advisable to establish a framework for regular research every 3-5 years, which would include data collection on the effectiveness of implemented strategies and feedback from stakeholders. This iterative process will aid in refining approaches and ensuring that the workshops continue to be relevant and impactful.
4. **Additional Sessions:** Organizing additional sessions and extending the workshop to neighboring countries can significantly enhance the skills and knowledge introduced. By fostering regional collaboration, participants can share best practices, learn from each other's experiences, and develop a more comprehensive understanding of the challenges and opportunities in climate resilience. This regional approach can also strengthen partnerships and create a network of stakeholders committed to sustainable development.



**Advancing Climate Resilience in Uzbekistan’s Water, Agriculture, and Energy Sectors through Sustainable Financing and Private Investment**

**Tashkent, Uzbekistan  
25-27 November 2024**

**WORKSHOP AGENDA  
DAY 1**

- 08:30 – 09:00      *Registration*
- Opening Remarks**
- 09:00 – 09:15      Ms. Kanokpan Lao-Araya, Country Director, Uzbekistan Resident Mission, Asian Development Bank  
Mr. Vadim Sokolov, Director, Agency of IFAS (International Fund for Saving the Aral Sea)
- 09:15 – 09:25      Group Photo
- Welcome and Background/Overview**
- 09:25 – 09:30      Ms. Rose SHAO, Capacity Building Specialist, CAREC Institute
- Keynote Presentation**
- 09:30 – 10:30      Dr. Asif Razzaq, Senior Research Specialist, CAREC Institute  
Topic: “Climate Change and Its Impact on Agriculture, Energy and Water in Uzbekistan”  
Questions & Answers
- 10:30 – 10:45      *Coffee Break*
- Session I: Water Financing Gaps in Uzbekistan**
- 10:45 – 11:15      Dr. Georg Petersen, General Manager, HYDROC GmbH  
Topic: “Overview of current management practices and key aspects of water financing gaps in Uzbekistan”
- 11:15 – 12:30      Moderator: Dr. Yuliy Yusupov, Scientific Supervisor, Centre for Economic Development, Uzbekistan  
Questions & Answers
- 12:30 – 13:30      *Lunch*
- Session II: Water financing action plan in Uzbekistan**
- 13:30 – 14:00      Dr. Georg Petersen, International Consultant  
Topic: “Overview and key aspects of water financing action plan”
- 14:00 – 15:00      Moderator: Dr. Yuliy Yusupov, Scientific Supervisor, Centre for Economic Development, Uzbekistan  
Questions & Answers
- 15:00 – 15:15      *Coffee Break*
- Session III: Exploring Opportunities for Regional Cooperation in Sustainable Financing and Private Capital Participation**
- 15:15 – 15:30      Dr. Georg Petersen, General Manager, HYDROC GmbH  
Topic: “Regional opportunities and challenges”  
Questions & Answers
- Session IV: Water financing case studies in Uzbekistan**
- 15:30 – 16:05      Dr. Yuliy Yusupov, Scientific Supervisor, Centre for Economic Development, Uzbekistan

16:05 – 16:45	Case study presentation: “Financing the water sector in Uzbekistan: problems and solutions” Mr. Gayrat Rahimov, Head, Operation and Development of Drinking Water Supply and Sewerage Systems Department, Ministry of Construction and Housing and Communal Services Topic: “Rural Water Supply Reforms in Uzbekistan” Questions & Answers
16:45 – 17:00	Dr. Abdurasul Kayumov, International Consultant, CAREC Institute Key insights and takeaways from Day 1

## DAY 2

08:30 – 09:00	<i>Registration</i>
<b>Session V: Financing Climate-Resilient Agriculture</b>	
09:00 – 10:30	Dr. Abdurasul Kayumov, International Consultant, CAREC Institute Group work: SWOT analysis Topic: “Agricultural sector resilience and factors affecting investment opportunities in Uzbekistan” Group work presentations
10:30 – 10:45	<i>Coffee break</i>
10:45 – 11:30	Dr. Abdurasul Kayumov, International Consultant, CAREC Institute Topic: “Innovative financing mechanisms and investment opportunities for sustainable agricultural projects” Questions & Answers
<b>Session VI: National Policy Frameworks for Sustainable Agriculture</b>	
11:30 – 12:30	Speaker: Dr. Shakhboz Akhmedov, Deputy Director, Institute for Advanced International Studies, Uzbekistan Topic: “Existing policies and proposed reforms to support climate-resilient agriculture in Uzbekistan” Questions & Answers
12:30 – 13:30	<i>Lunch</i>
<b>Session VII: Innovative Agricultural Practices for Climate Resilience</b>	
13:30 – 15:00	Dr. Shakhboz Akhmedov, Deputy Director, Institute for Advanced International Studies, Uzbekistan Case study presentation Questions & Answers
15:00 – 15:15	<i>Coffee break</i>
<b>Session VIII: Policy recommendations for Climate-Resilient Agriculture</b>	
15:15 – 16:45	Dr. Abdurasul Kayumov, International Consultant, CAREC Institute Topic: “Policy Recommendations from the CAREC Institute Climate Inaction Report: Building Climate-Resilient Agriculture” Questions & Answers
16:45 – 17:00	Dr. Asif Razzaq, Senior Research Specialist, CAREC Institute Key insights and takeaways from Day 2

### DAY 3

- 08:30 – 09:00      *Registration*
- Session IX: Identifying Investment Gaps in the Energy Sector**
- 09:00 – 10:30      Dr. Abdurasul Kayumov, International Consultant, CAREC Institute  
Topic: “Key Insights from the CAREC Institute’s Climate Inaction Report on Energy”  
Questions & Answers
- 10:30 – 10:45      *Coffee break*
- Session X: Innovative Financing Mechanisms for Energy Projects**
- 10:45 – 11:45      Dr. Asif Razzaq, Senior Research Specialist, CAREC Institute<sup>34</sup>  
Topic: “Innovative financing mechanisms for energy projects”  
Questions & Answers
- 11:45 – 12:30      Moderator: Dr. Umidbek Narzullaev, Deputy Director, UET Consultings, Uzbekistan  
Discussion “Approaches for attracting investment in Uzbekistan’s energy sector”
- 12:30 – 13:30      *Lunch*
- Session XI: National Policy Frameworks for Sustainable Energy**
- 13:30 – 15:00      Dr. Umidbek Narzullaev, Deputy Director, UET Consultings, Uzbekistan  
Topic: “Existing policies and proposed reforms to support sustainable energy in Uzbekistan”  
Questions & Answers
- 15:00 – 15:15      *Coffee break*
- Session XII: Water-Agriculture-Energy Nexus Approaches**
- 15:15 – 16:30      Moderator: Ms. Rose SHAO, Capacity Building Specialist, CAREC Institute  
Discussants: Dr. Asif Razzaq, Senior Research Specialist, CAREC Institute  
                    Dr. Georg Petersen, General Manager, HYDROC GmbH  
                    Dr. Abdurasul Kayumov, International Consultant, CAREC Institute  
Panel Discussion: “Enhancing Climate Resilience: Navigating the Water, Agriculture, and Energy Nexus in Uzbekistan”
- Closing Remarks and Next Steps**
- 16:30 – 17:00      Ms. Rose SHAO, Capacity Building Specialist, CAREC Institute