



**CAREC Institute**

## **Symposium Proceedings Report**

# **International Symposium on Ecological Restoration and Integrated Management of the Aral Sea**

**24-25 November 2020**



## Disclaimer

The CAREC Institute workshop report and policy brief series is a forum for stimulating discussion and eliciting feedback on ongoing and recently completed research and workshops undertaken by the CAREC Institute staff, consultants, or resource persons. The series deals with key economic and development issues, particularly those facing the CAREC region, as well as conceptual or analytical issues relating to program or policy design and implementation.

This report is one of the outputs of the online international symposium titled “Ecological Restoration and Integrated Management of the Aral Sea” jointly organized by the CAREC Institute, Xinjiang Institute of Ecology and Geography, CAS, the National University of Uzbekistan, and other partners.

The symposium was conducted during 24-25 November 2020. The workshop aimed to facilitate an international platform for scientific research and knowledge sharing regarding water and ecological security of the Aral Sea.

The report is drafted by Ms. Rose Shao, Capacity Building Specialist, the CAREC Institute and edited by Mr. Eisa Khan Ayoob Ayoobi, Chief of Capacity Building Division, the CAREC Institute. Rovshan Mahmudov, Senior Capacity Building Specialist, and Gary Huang, E-Learning Specialist of the CAREC Institute have contributed to the report.

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## Abbreviations

ABEC	Almaty–Bishkek Economic Corridor
ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
CAREC	Central Asia Regional Economic Cooperation
CAS	Chinese Academic of Sciences
CEL	Climate, Ecosystems and Livelihoods
CHMF	Circular Halophytic Mixed Farming
CI	Central Asia Regional Economic Cooperation Institute
DSES	Dryland Socio-Ecological Systems
ECOSF	Economic Cooperation Organization- Science Foundation
ESAI	The Environmentally Sensitive Area Index
IFAS	International Fund for Saving Aral Sea
IGSNRR	Institute of Geographic Sciences and Natural Resources Research, CAS
MTS	Medium Term Strategy
PRC	People’s Republic of China
SDG	Sustainable Development Goal
SEBA	Socio-Ecosystem Based Adaptation
STI	Science Technology and Implementation
UAV	Unmanned Aerial Vehicle
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
XIEG	Xinjiang Institute of Ecology & Geography, CAS

## Table of Contents

Abbreviations .....	3
Introduction .....	5
Keynote Presentations .....	6
Discussion on Green Aral Sea Mega Science Initiative.....	7
Subject I. Evolution of the Aral Sea, Climate Change and Human Activities.....	7
Subject II. Innovation Technologies and Green livelihood under SDGs .....	8
Subject III. Regional Cooperation for Sustainable Development .....	9
Launch of “Joint Uzbek-Chinese Key Laboratory of Eco-Biomes in Arid Land” .....	9
Closing and Wrap Up.....	10
Appendices.....	11
Agenda .....	11
List of organizers .....	15

## Introduction

Covering an area of 67,499 square km, the Aral Sea used to be the fourth largest inland lake in the world and the second largest inland saltwater lake in Asia until the early 1960s. In recent decades, Aral Sea has seen its water surface area reduced to 1/10 of the original, and its water salinity increased by more than 12 to 24 times, which is nine times higher than the average salinity of the world's oceans. Its dried bed produces 150 million tons of salt dust annually, which seriously affects the ecological environment of Central Asia, especially Karakalpakstan and Khorezm regions.

During a visit to the Aral Sea in July 2017, UN Secretary-General Antonio Guterres expressed that the desiccation of the Aral Sea is one of the biggest environmental disaster currently faced by mankind and called on the international community to cooperate in addressing the problem.

On August 24, 2018, the President of Uzbekistan, His Excellency Mr. Shavkat Mirziyoyev, stressed that the drying of the Aral Sea is a huge disaster for Central Asia, and called on Central Asian countries to work together in mitigating the environmental consequences of the Aral Sea challenges. He proposed declaring the Aral Sea region as the Zone of Environmental Innovations and Technologies.

At the People's Republic of China (PRC)-Uzbekistan Symposium on Bilateral Cooperation Initiative held in Urumqi on 13 October 2019, leading experts, and scientists from relevant scientific research institutions in the PRC and Uzbekistan jointly adopted the Urumqi Declaration for the PRC-Uzbekistan Cooperation Initiative – Ecological Restoration for the Aral Sea Region. The declaration calls for leveraging efforts in science, technology, expertise and best practices among the PRC, Uzbekistan, and other countries under innovation-driven regional cooperation on ecological restoration of the Aral Sea. This is to contribute to the improvement of regional ecological environment and sustainable socio-economic development essential for regional and global welfare of the present and future generations.

Also, sustainable development has been at the forefront of the CAREC Program and more so in the CAREC 2030 strategic outlook. All the CAREC member countries, including the PRC and Uzbekistan have been working together to address regional development challenges through enhanced and effective regional cooperation. On this front, the CAREC Institute as the program's knowledge arm has been providing innovative knowledge support in priority clusters in collaboration with key implementing partners – like this symposium.

The symposium covered a wide range of topics discussed through thematic sessions in the context of the Aral Sea, climate change and Green Aral Sea Mega Science Initiative in Central Asia. Various national and regional partners were assigned to deliver sessions related to their institutions and expertise portfolios. The following list of topics reflect the structure of the conference:

### **Day 1**

- Six Keynote Presentations from Special Guests
- Discussion on “Green Aral Sea Mega Science Initiative”

### **Day 2**

- Subject 1: Evolution of the Aral Sea, Climate Change and Human Activities
- Subject 2: Innovation Technologies and Green Livelihood under SDGs
- Subject 3: Regional Cooperation for Sustainable Development
- Launch of “Joint Uzbek-Chinese Key Laboratory of Eco-Biomes in Arid Land”

## Keynote Presentations

Six special guests made presentations on different areas, including:

- 1) Interaction and synergism management of water and ecosystem in the Aral Sea basin.
- 2) Promoting nexus approaches to address multiple challenges.
- 3) Bioresource of Central Asia and its utilization on ecological restoration of damaged desert ecosystems.
- 4) The main directions of research activities of the National Institute of Deserts, Flora and Fauna of Turkmenistan on the implementation of the UN convention.
- 5) Aral Sea Disaster: review of current state and future prospects.
- 6) Integrated land use planning for water food, energy security and ecosystem conservation.

**Professor Chen Xi** from Xinjiang Branch of Chinese Academy of Sciences, in his keynote presentation, listed some of the research projects related to the Aral Sea that have been carried out by the academy in recent years. He also discussed plans for future research, including: 1) Multi-objective synergism mode of water resources and ecological management in the Aral Sea basin; 2) Road map of water and ecology for green development in the Aral Sea basin; and 3) Assessment of socio-economic security of water ecology. He called for collective knowledge efforts in the Aral Sea restoration activities.

**Professor Zhang Linxiu**, Director of the UNEP International Ecosystem Management Partnership, detailed UNEP's Medium-term Strategy (MTS) for 2022-2025 – on the road to 2030 and work on ecosystem restoration and management. She pointed out that the objectives of the 2030 Agenda for Sustainable Development Goals (SDG) will not be achieved without large-scale restoration of degraded terrestrial and marine ecosystems globally. She believed that there were pathways to overcome the barriers. She also presented two cases on the nexus approach of Climate, Ecosystems and Livelihoods (CEL): one on Socio-Ecosystem Based Adaptation (SEBA) in mountains and another on Dryland Socio-Ecological Systems (DSES).

**Professor Zhang Yuanming**, Director General of the Xinjiang Institute of Ecology & Geography, CAS, in his presentation, mentioned about the biological resources in Central Asia, utilization of the bioresources for the ecological restoration. He discussed some successful cases on this front from institutional experience. At the end of his presentation, he proposed the “**Green Aral Sea Mega Science Initiative**” and called on all stakeholders to join hands in addressing the Aral Sea issues collectively.

**Professor Pirli Kepbanov**, Director of the National Institute of Deserts, Flora and Fauna of Turkmenistan, discussed the main directions of research activities of his institute. He also provided details on how they have been addressing climate issues in general through implementation of the UN conventions.

**Dr. Iskandar Abdullaev**, Deputy Director Two of the CAREC Institute, delivered a keynote presentation titled “Aral Sea: Past, Present and Future.” As a leading regional expert in water resource management in Central Asia, Dr. Abdullaev pointed out the main issues surrounding the Aral Sea. He stated that the Aral Sea degradation has had severe socio-economic implications, including public health problems, loss of local economy and livelihood opportunities, loss of cultural heritage and increasing environmental migration. Despite multiple efforts, the situation remains concerning. He advocated for stronger cooperation among affected regions with further support from remote regions to address pressing issues of the Aral Sea through scientific research and proven international best practices. Dr. Abdullaev concluded by saying that restoration of the Aral Sea would mean restoration of livelihoods

of local communities and regional prosperity.

**Ms. Jia Xiaoxia**, Program Officer, Science Technology, and Implementation, UNCCD, also presented in this session. She described experiences of integrated land use planning for water food, energy security and ecosystem conservation. She believed that such integrated and nexus planning is key for restoration of ecosystem in an around the Aral Sea region.

## Discussion on Green Aral Sea Mega Science Initiative

**Professor Zhang Yuanming**, Director General of the Xinjiang Institute of Ecology and Geography, CAS, presented the Green Aral Sea Mega Science Initiative. After giving an overall picture of the initiative, he highlighted the main objectives, where his presentation was centered, namely:

- To pool multilateral scientific and technological strengths by establishing cooperation mechanisms for scientific research and green innovative technology application implemented by multiple countries and promoting regional sustainable green development.
- To carry out scientific research on the evolution of the ecosystem mechanism in the Aral Sea basin, as well as to experiment and demonstrate green innovative technologies in ecological restoration by focusing on ecological restoration and regional sustainable management of the Aral Sea and present a "Plan and Roadmap of Ecological Restoration and Green Development in the Aral Sea" to contribute significantly to achieving the UN SDGs and ensuring the human well-being.
- To facilitate cultivation of creative talents in Central Asia through capacity building and jointly enhancing scientific and technological innovation capacities in the region.

Professor Yuanming concluded by calling on all partners to support the initiative and participate in its implementation.

## Subject I. Evolution of the Aral Sea, Climate Change and Human Activities

This session included four thematic presentations in the following order:

- 1) The Aral Sea disaster: climate change and water-land ecological problems in Uzbekistan
- 2) The Aral Sea region microbiome - an extreme anthropogenic example
- 3) Agricultural development strategy in Central Asia under climate warming
- 4) Restoration of the drained bottom of the Aral Sea by means of forest melioration

In the first presentation, the speaker provided a general picture of the climate change and water-land ecological problems in Uzbekistan. **Professor Rashid Kulmatov**, National University of Uzbekistan, recommended intensifying the development of monitoring of quantity and quality of the water in the basin of the rivers Amu Darya and Syr Darya, equipping the basin with modern means to monitor volumes and quality of the river water and realization of research and engineering works on clearing, regeneration of collector-drainage waters for reuse, and demineralization of salty waters.

**Professor Gabriele Berg**, Graz University of Technology, suggested that in order to restore the Aral Sea's microbiome, we need to focus on microbial inoculants with plant growth promoting and stress protecting bacteria, which is essential for plant growth and the plant rhizospheres that can help restore soil quality and recycle pollutants.

**Professor Yu Jingjie**, Institute of Geographic Sciences and Natural Resources Research, CAS, noted that water stress is the main challenge for sustainable development, especially for agricultural development. He suggested three strategies for agricultural development: 1) To increase amount of water available; 2) To reduce irrigation water demand; and 3) To improve land productivity.

**Professor Zinovy Novitsky**, Research Institute of Forestry, Uzbekistan, shared the experience of his Institute in carrying out forest reclamation works on the drained bottom of the Aral Sea.

## Subject II. Innovation Technologies and Green livelihood under SDGs

This session included six presentations in the following order:

- 1) UNDP's approach in promoting innovation/green technology in the Aral Sea region
- 2) Risk characteristics and governance demonstration of desertification in Central Asia
- 3) Innovative climate resilient technologies and approaches for water use efficiency and circular halophytic mixed farming development in the Aral Sea basin
- 4) Opportunities for photovoltaics to promote the ecological restoration of the Aral Sea: technology, policy, and potential evaluation
- 5) Climate change mitigation: the role of clean energy technologies
- 6) Application of UAVs in ecological management of Aral Sea

In this session, experts from UNDP, XIEG, Tottori University, Kyoto University, Pakistan ECOSF, Qinghua University and IGSNRR discussed approaches and innovative technologies that are used in the Aral Sea and Central Asia.

UNDP uses systems analysis for an integrated intervention to 1) build capabilities and foster cross-functional participation; 2) enable constantly evolving "innovation project pipeline"; and 3) strategic partnering for financing of high-impact interventions.

XIEG presenter said that the environmentally sensitive area index (ESAI) method was first utilized to monitor the risk of desertification in Central Asia. Combined with the spatial convergence analysis, XIEG investigated the ESAI convergence processes as revealed by an early warning of desertification risk. The expert also introduced the methods used in the four pilot demonstrations, the challenges encountered and solutions to the ecological obstacles for the capital circle of Kazakhstan, oil and gas fields in Sakar Desert in Turkmenistan, the lower reaches of the Amu River basin and salinized land around the Aral Sea.

The expert from the International Innovation Center for the Aral Sea basin under the President of Uzbekistan talked of the Circular Halophytic Mixed Farming (CHMF), nutritional and economic value of non-traditional crops and New Generation 'Sand Panics Technology (soilless agriculture).

Qinghua University's expert listed a few reasons as to "why PV power plants can restore uncertified land." He emphasized that a mechanism of land restoration with PV power panels, the elimination of carbon emissions and the offset and lower price of solar energy are the three main reasons. On practical ways of solar energy application in the Aral Sea region, he gave an example of the arid agriculture combined with PV power plants.

For the promotion of research and technological advancement for sustainable development and economic growth in the ECO region, the expert from ECOSF proposed strong collaboration and coordination in the field of human resources, the strengthening of institutional capability in science, technology, and research, as well as dissemination of knowledge and information through workshops,



conferences, and meetings.

In the last part of the session, experts shared the application of UAV remote sensing in ecological management of the Aral Sea and called for the early establishment of UAV-RS networks for ecological restoration and integrated management in the region. The system will provide multi-type, multi-scale and customized remote sensing data for the ecological restoration project and the water balance of the Aral Sea in the future.

### Subject III. Regional Cooperation for Sustainable Development

In the last session, experts from the International Innovation Center for the Aral Sea basin under the President of Uzbekistan, Interstate Commission on Sustainable Development of the IFAS, and ADB focused on regional cooperation. They argued that regional cooperation and integration improve the living standards of the population and could enhance environmental situation in the Aral Sea region. IFAC and ADB presented the Regional Environment Action Plan and the Aral Sea Basin Environmental Improvement Program, as well as setup of a water cooperation pillar under CAREC 2030 strategy, respectively.

Experts from Eberswalde University made suggestions on Agroforestry for sustainable land use in Central Asia as follows:

- Focusing on promoting benefits that are highly valued by farmers
- Promoting and encouraging farmers to develop through best practices
- Improvement and cooperation in knowledge transfer from national to local levels
- Support adoption of collaborative measures to set up joint 'shelterbelt' systems

At the end of the presentations, time was allocated for questions and answers. Experts enthusiastically responded to the questions received from the floor and thus constructive expert discussion took place for further knowledge sharing among experts and participants.

### Launch of “Joint Uzbek-Chinese Key Laboratory of Eco-Biomes in Arid Land”

**Dr. Dilfuza Egamberdieva**, Head of Joint Uzbek-China Key Laboratory of Eco-Biomes of Arid Lands, National University of Uzbekistan, facilitated this session. She showcased a three-minute video of a collaborative laboratory that aims to develop and deliver innovative and practical solutions to farmers and other stakeholders that improve soil, water, and plant health in extreme environmental conditions. Subsequently, the symposium was closed with wrap up and closing remarks. Professor Jilili Abuduwalli, Deputy Director of Xinjiang Institute of Ecology & Geography, CAS, closed the session by thanking all speakers and participants for the engaging presentations and discussions.

## Closing and Wrap Up

**Dr. Liang Ziqian**, Deputy Director One, CAREC Institute, closed the symposium. In his closing remark, he underlined that the CAREC Institute strongly supports XIEG’s “Green Aral Sea Initiative” and is with the belief that systematic joint efforts will bring high-end results. The CAREC Institute is ready to take part in this initiative and will provide up-to-date knowledge support in its implementation.

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## Appendices

### Agenda



## International Symposium on Ecological Restoration and Management of the Aral Sea

*Virtual symposium*

24 -25 November 2020

### AGENDA (Beijing time)

24 November 2020 (Tuesday)	
15:00-15:40	<p><b>Opening and Welcoming Remarks</b> (5 minutes each)</p> <p>Co-Moderator: Prof. Cao Jinghua, Executive Director of the Secretariat of ANSO Prof. Dr. Iskandar Abdullaev, Deputy Director II of the CAREC Institute</p> <ul style="list-style-type: none"> <li>• Prof. Bai Chunli, President of ANSO and President of Chinese Academy of Sciences</li> <li>• Mr. Ibromkhim Abdurakhmonov, Minister of the Ministry of Innovation Development</li> <li>• Dr. Jusipbek Kazbekov, First Deputy Prime Minister of Karakalpakstan of Uzbekistan</li> <li>• Ms. Jiang Yan, Ambassador of the Embassy of China in Uzbekistan</li> <li>• Prof. Zhang Yuanming, Director General of the Xinjiang Institute of Ecology &amp; Geography, CAS</li> <li>• Dr. Avazjon Marakhimov, Rector of National University of Uzbekistan</li> <li>• Ms. Jamal Annagylyjova, Representative of Executive Secretary, UNCCD</li> <li>• Ms. Yasmin Siddiqi, Director of Environment, Natural, Resources and Agriculture Division (CWER), Central and West Asia Department, ADB</li> <li>• Prof. Manzoor Hussain Soomro, President of the ECO Science Foundation (ECOSF), Pakistan</li> </ul>
15:40-15:45	<p><b>Photo Session</b></p> <ul style="list-style-type: none"> <li>• All speakers, moderators and discussants are kindly requested to switch on your videos in Zoom. A screenshot will be taken.</li> </ul>
15:45-18:20	<p><b>Keynote Presentation (20 minutes each)</b></p> <ul style="list-style-type: none"> <li>• Co-Moderator: Prof. Komil Tojibaev, Director of the Institute of Botany, Academy of Sciences of the Republic of Uzbekistan</li> <li>• Prof. Li Yaoming, Division Head of Xinjiang Institute of Ecology &amp; Geography, CAS</li> </ul> <p><b>Presentations (20 minutes each)</b></p> <ul style="list-style-type: none"> <li>• Presentation 1: Interaction and synergism management of water and ecosystem in Aral Sea Basin - <i>Prof. Chen Xi, Director of the Research Center for Ecology and Environment of Central Asia</i></li> <li>• Presentation 2: Promoting nexus approaches to address multiple challenges - <i>Prof. Zhang Linxiu, Director of the UNEP International Ecosystem Management partnership</i></li> </ul>

	<ul style="list-style-type: none"> <li>• Presentation 3: Bioresource of Central Asia and its utilization on ecological restoration of damaged desert ecosystems - <i>Prof. Zhang Yuanming, Director General of the Xinjiang Institute of Ecology &amp; Geography, CAS</i></li> <li>• Presentation 4: The main directions of research activities of the National Institute of Deserts, Flora and Fauna of Turkmenistan on the implementation of the UN convention - <i>Prof. Pirli Kepbanov, Director of the National Institute of Deserts, Flora and Fauna of Turkmenistan</i></li> </ul> <p style="text-align: center;"><b>Break (20 minutes)</b></p> <ul style="list-style-type: none"> <li>• Presentation 5: Aral Sea Disaster: Review of current status and future prospects - <i>Prof. Iskandar Abdullaev, Second Deputy Director of the CAREC Institute</i></li> <li>• Presentation 6: Integrated land use planning for water, food, energy security and ecosystem conservation - <i>Ms. Jia Xiaoxia, Program Officer (Science) &amp; CST Secretary, Science Technology and Implementation (STI), UNCCD</i></li> </ul> <p><b>Q &amp; A – Expert Discussions</b>  2 experts to give comments and suggestions (3 minutes each)  Expert 1: Prof. Philippe DE MAEYER, Ghent University  Expert 2: Prof. Liao Xiaohan, Deputy Director of the Institute of Geographic Sciences and Natural Resources Research, CAS</p>
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### Discussion on Green Aral Sea Megascience Initiative

18:20-19:00

**Format:** the session starts with 2 minutes opening remarks by moderator (highlighting the importance and significance of the Initiative) and follows by 15 minutes presentation. There will be 10 minutes time allocated for Q & A and expert discussions.

- Moderator: Prof. Yang Youlin, Xinjiang Institute of Ecology & Geography, CAS

#### **Introductory address by moderator (2 minutes)**

- **Presentation: Green Aral Sea Megascience Initiative** - *Prof. Zhang Yuanming, Xinjiang Institute of Ecology & Geography, CAS*

#### **Q & A - Expert Discussions (10 minutes)**

4 experts to give comments and suggestions (3 minutes each)

Expert 1: Prof. Komil Tojibaev, Director of the Institute of Botany, Academy of Sciences of the Republic of Uzbekistan

Expert 2: Prof. Martin Welp, Eberswalde University for Sustainable Development

Expert 3: Prof. Mr. Jeremy Bird, Consultant to Asian Development Bank

Expert 4: Ms. Jia XiaoXia, Science Technology and Implementation (STI), UNCCD

**25 November 2020 (Wednesday)**

### Subject I. Evolution of the Aral Sea, Climate Change and Human Activities

15:00-16:00

**Format:** the session starts with 2 minutes opening remarks by moderator (highlighting the importance and relevance of the session's themes and presentations as well as introducing the presenters) and follows by 10 minutes presentation (each) by five session presenters. There will be 10 minutes time allocated for Q & A and expert discussions.

- Moderator: Prof. Kristina Toderich, International Platform for Dry-land Research and Education, Tottori University

#### **Introductory address by moderator (2 minutes)**

#### **Presentations (10 minutes each)**

- Presentation 1: The Aral Sea Disaster: Climate change and water-land ecological problems in Uzbekistan – *Prof. Rashid Kulmatov, National University of Uzbekistan*

- Presentation 2: The Aral Sea region microbiome - an extreme anthropogenic example - *Prof. Gabriele Berg, Graz University of Technology*

<ul style="list-style-type: none"> <li>• Presentation 3: Agricultural development strategy in Central Asia under climate warming - <i>Prof. Yu Jingjie, Institute of Geographic Sciences and Natural Resources Research, CAS</i></li> <li>• Presentation 4: The current state of the soil cover of the Kazakhstan part Aral Sea dried bottom - <i>Prof. Konstantin Pachikin, Research Institute of Soil Science and Agrochemistry, Kazakhstan</i></li> <li>• Presentation 5: Restoration of the drained bottom of the Aral Sea by means of forest melioration - <i>Prof. Zinovy Novitsky, Research Institute of Forestry</i></li> </ul> <p><b>Q &amp; A – Expert Discussions (10 minutes)</b>  2 experts to give comments and suggestions (3 minutes each)  Expert 1: Dr. Iskandar Abdullaev, Deputy Director II of CAREC Institute  Expert 2: Prof. Salamat Alamanov, Geology Institute, National Academy of Science of Kyrgyzstan</p>
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**Subject II. Innovation Technologies and Green livelihood under SDGs**

16:00-17:00	<p><b>Format:</b> the session starts with 2 minutes opening remarks by moderator (highlighting the importance and relevance of the session’s themes and presentations) and follows by 10 minutes presentation (each) by six session presenters. There will be 10 minutes time allocated for Q &amp; A and expert discussions.</p> <ul style="list-style-type: none"> <li>• Moderator: Mr. Batyr Kurbanov, Chief Specialist, Secretariat of the Interstate Commission for Sustainable Development, IFAS</li> </ul>
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<p><b>Introductory address by moderator (2 minutes)</b></p> <p><b>Presentations (10 minutes each)</b></p> <ul style="list-style-type: none"> <li>• Presentation 1: UNDP’s approach in promoting innovation/green technology in the Aral Sea region - <i>Mr. Bakhadur Paluaniyazov, UNDP Uzbekistan</i></li> <li>• Presentation 2: Risk characteristics and governance demonstration of desertification in Central Asia - <i>Prof. Lei Jiaqiang, Xinjiang Institute of Ecology &amp; Geography, CAS</i></li> <li>• Presentation 3: Innovative climate resilient technologies and approaches for water use efficiency and circular halophytic mixed farming development in the Aral Sea Basin - <i>Prof. Kristina Toderich, Timur Khujanazarov and Muratbek Ganiev, International Platform for Dryland Research and Education, Tottori University, Kyoto University, International Innovation Center for Aral Sea Basin under the president of the Republic of Uzbekistan</i></li> <li>• Presentation 4: Opportunities for photovoltaics to promote the ecological restoration of the Aral Sea: technology, policy, potential evaluation - <i>Prof. He Jijiang, Director of the Energy Transition &amp; Social Development, Qinghua University, China</i></li> <li>• Presentation 5: Climate change mitigation: the role of clean energy technologies - <i>Mr. Khalil Raza, ECO Science Foundation, Pakistan</i></li> <li>• Presentation 6: Application of UAVs in ecological management of Aral Sea - <i>Prof. Liao Xiaohan, Institute of Geographic Sciences and Natural Resources Research, CAS</i></li> </ul> <p><b>Q &amp; A - Expert Discussions (10 minutes)</b>  2 experts to give comments and suggestions (3 minutes each)  Expert 1: Prof. Wang fei, Deputy Director of the Institute of Soil and Water Conservation, CAS and MWR  Expert2: Prof. Gabriele Berg, Graz University of Technology</p>
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17:00-17:20	<b>Break</b>
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**Subject III. Regional Cooperation for Sustainable Development**

17:20-18:20	<p><b>Format:</b> the session starts with 2 minutes opening remarks by moderator (highlighting the importance and relevance of the session’s themes and presentations) and follows by 10 minutes presentation (each) by five session presenters. There will be 10 minutes time allocated for Q &amp; A and expert discussions.</p> <ul style="list-style-type: none"> <li>• Moderator: Prof. Ms. Jia XiaoXia, Science Technology and Implementation (STI), UNCCD</li> </ul>
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### **Introductory address by moderator (2 minutes)**

#### **Presentations (10 minutes each)**

- Presentation 1: Cooperation in improving the living standard of the population and the environmental situation in the Aral Sea region – *Alim Asamatdinov, International Innovation Center for the Aral sea basin under President of Uzbekistan*
- Presentation 2: SIC ICSD and its regional programs. Regional Environmental Protection and Sustainable Development Program (REPOSUR) and the Aral Sea Basin Action Program (ASBP-4) - *Mr. Batyr Kurbanov, Interstate Commission on Sustainable Development of the IFAS*
- Presentation 3: Establishing a pillar of water cooperation under CAREC - *Mr. Jeremy Bird, Independent Water Resources Advisor, ADB*
- Presentation 4: Agroforestry for sustainable land use management in Central Asia: Opportunities and Challenges - *Prof. Dr. Martin Welp, Eberswalde University for Sustainable Development*
- Presentation 5: Current state and ways of solving environmental problems of the Aral Sea region in Kazakhstan – *Mr. Bolat Bekniyaz, Director of Executive Board of the International Fund for saving the Aral Sea of the Republic of Kazakhstan*

#### **Q & A - Expert Discussions (10minutes)**

2 experts to give comments and suggestions (3 minutes each)

Expert 1: Ms. Jamal Annagylyjova, External Relations, Policy and Advocacy Unit, UNCCD

Expert 2: Prof. He Jijiang, Energy Transition & Social Development, Qinghua University, China

### **Launch of “Joint Uzbek-China Key Lab of Ecobiomes in Arid Land”**

18:20-18:30

**Format:** [the session starts with 3 minutes opening remarks by moderator (highlight the background of the establishment of the Joint Lab, and the progress)]

- Three minutes video for the Joint Lab
- Moderator: Dr. Dilfuza Egamberdieva, Head of Joint Uzbek-China Key Lab of Ecobiomes of arid lands. National University of Uzbekistan

### **Closing Ceremony**

18:30-19:00

#### **Introductory address by moderator (2 minutes)**

- Moderator: Prof. Jilili Abuduwaili, Deputy Director of Xinjiang Institute of Ecology & Geography, CAS

#### **Wrap-up**

- Subject I - Prof. Kristina Toderich, International Platform for Dry-land Research and Education, Tottori University
- Subject II - Mr. Batyr Kurbanov, Secretariat of the Interstate Commission for Sustainable Development, IFAS
- Subject III - Ms. Jia XiaoXia, Science Technology and Implementation (STI), UNCCD

#### **Closing Remarks**

- Dr. Liang Ziqian, Deputy Director I, CAREC Institute
- Prof. Cao Jinghua, Executive Director, Secretariat of ANSO
- Prof. Chen Xi, Director, CAS Research Center for Ecology and Environment of Central Asia

## List of organizers

### **CAREC Institute**

Eisa Khan Ayoob Ayoobi, Chief of Capacity Building Division

Rovshan Mahmudov, Senior Capacity Building Specialist, Capacity Building Division

Rose Shuai Shao, Capacity Building Specialist, Capacity Building Division

Gary Huan, E-Learning Specialist, Capacity Building Division

### **Xinjiang Institute of Ecology & Geography, CAS**

Qiao Jianfang, Deputy Chief, Research Management and International Cooperation Department, XIEG

Wu Ke, Research Management and International Cooperation Department, XIEG