

# Workshop on Central Asia

*“An exploration of climate science in Central Asia — moving towards frontiers of knowledge and action”*

October 4-6, 2021

– Summary and Key messages –

# INTRODUCTION

## Peter van Oevelen

**The Global Energy and Water EXchanges (GEWEX) project** is a core project of the World Climate Research Programme (WCRP) that facilitates, enables, coordinates international climate and related research activities with an emphasis but not exclusively on land – atmosphere processes and interactions.

## Zheenbek Kulenbekov

### The Water Resources Situation in Central Asia, (AUCA)

- The development of river systems, water reservoirs, ecosystems and risks as well as the impact of climate change on water resources in Central Asian countries and Afghanistan.
- Information on the genesis of river basins, physical and chemical properties of water in rivers, and the hydrological regimes of the rivers of Central Asia and Afghanistan.

## Jon Padgham

**System for Analysis, Research and Training (START)** promotes science capacity development that advances knowledge and action on critical sustainability challenges.

START's work targets early- and mid-career researchers and professionals who work at the interface of science and action in Africa and Asia.

# KEY MESSAGES

## Tomas Saks

### State of Cryosphere in Central Asia – (Uni. of Fribourg)

- Glacier observation data should be freely accessible and provided, via the corresponding data centres according to international standards and strategies.
- High-quality cryosphere data is an indispensable prerequisite to any sound water and hazard related studies in high mountains.
- Regional cooperation on WRM and DRM and awareness has to be increased based on the national Efforts.
- Education and capacity building by introducing up to date student courses on BSc and MSc level, by summer schools and by specialized field training

## Kakhramon Djumobaev

### Application of the water-energy-food (WEF) nexus concept to transboundary rivers of Central Asia

- Current government policies on energy subsidy in the lift irrigated areas do not support water and energy savings.
- In addition, basin wide water productivity will be improved, return flow and CO2 emissions will be reduced and hence, the environment is protected.
- There is a need to introduce platforms to discuss the WEF nexus related issues.

# KEY MESSAGES

## Natalia Chemayeva

### WATER POLICY IN CENTRAL ASIA AND CLIMATE CHANGE

- The inability to bridge the policy and science is always an issue.
- Developing Adaptive Water Governance mechanisms in situ, also contributing to the global knowledge gap.
- Adapting Resilience Assessment Framework for agricultural systems will help face upcoming risks.
- Proper transboundary planning with Transboundary Climate and Water Strategy and adoption of WEF E nexus approach at the regional level.
- Development of Disaster Risk Reduction (DRR) systems and merging them with Climate Adaptation strategies.

## Kanat Sultanaliev

### Climate Change and Agriculture in Central Asia – (AUCA)

- Glacier observation data should be freely accessible and provided.
- Support the introduction of new varieties of crops, new breeds of livestock and new agronomic techniques to increase resistance to environmental problems.
- Decrease water loss and increase the capacity of the irrigation system.
- Provide training for farmers to overcome the volatility of weather conditions and to improve the sustainability of pasture grazing modality.
- Develop and introduce insurance schemes for the crops and livestock of smallholders and family farms.

# BREAKOUT ROOMS DISCUSSIONS



- 1. What do you view as the top 2-3 priorities for research to address critical knowledge gaps, and why?*
- 2. What are key opportunities and impediments for carrying out that research?*
- 3. Given current and emerging knowledge, what adaptation responses are the most pressing?*

## Room 1

- Start a conversation about Water-related data gaps. Water is a critical issue. The talk about insufficient amount of information and resources at the moment to produce precipitation projection.
- #1 is permafrost – starting building knowledge and data about permafrost. #2 is good projection for the future, #3 is introducing new technologies in snow monitoring.
- Connects Carbon, energy and water. Adds a point about the energy and carbon sector. The relationship of these sectors with water needs to be studied more.
- We need to use the data in practice, and make it all useful. The need for completed climate measurements, high quality, photographs and data. Establish collaboration with people involved in modeling in the fields.
- Agrees that collaboration is a good point, we need to consider the whole picture and data.
- Employees of governmental organizations often have low salaries, they are trying to get some profit from the sale of data, but this is most likely a problem of the state.
- Funding is needed to monitoring climate data and infrastructure. It will matter globally.

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## **Room 2**

- Remote sensing training is critically important for CA.
- Science and Policy discrepancy —> Policy Change.
- It is important to have a verified flow formation model for the flow formation zone in CA.
- Land-Atmosphere processes data and local capacity are limited.
- It is important to have a model that provides management analysis (management support) of water resources.
- Basic problem found in Central Asia is that young talented people usually do not select science for their career.
- It is not confident that mountain community will manage their problems.
- Policy-makers tend to work towards immediate needs, not thinking ahead (especially if it is 20-50 years in advance).
- GHP & RHP should go together because CA is part of Global activities and great opportunity to integrate community in project and link the pieces together and evolve to a project and put it in action.



# BREAKOUT ROOMS DISCUSSIONS



## Room 2 (continue)

- Arid areas need more attention and be balanced in studies with high mountains. Remote sensing training is critically important for Central Asia.
- Scientific knowledge and policy makers in CA is adaptable (Adaptive Pathways of Deltares) - bring data together – there is none now but in future it can happen to bring scientists in policy makers/changes.
- Capacity of decision makers is important – they usually don't think of long term but find solution for immediate occurrences such as flood.
- For CA important to keep in mind in changes that happened since soviet. They need to have different approaches other than soviet scientists mindset because there have been a great shift since then.
- Mountain area is very difficult as the available information due to very limited. It's very difficult to A basic information such as evaluation of the catchment average precipitation is very difficult. Even in Japan, mountain area's precipitation is still a big challenge.
- The problem of interplay with policy is lasting long since CA states exist. It has been raised in each donor-funded project, but it is still a big question.
- Transparency of decision-making is always an issue.
- Soviet has a good base for scientist and good studies.

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## **Room 3**

- Key topic in agriculture is glacier decreasing but because it is hard to get the data, he would address the problem the adaptation measures.
- Scientific community and governmental organizations need to work hand to hand.
- How do we observe the changes and analyze data availability?
- Young scientists, new equipment with new techniques, and government secrecy and policy on water distribution.
- It is not easy to talk to Kyrgyz policy makers because you don't know Russian or Kyrgyz so they don't have access to policy makers to understand their opinion. It is an obstacle.
- Limited economic resources – how to maintain them. Decreasing the demands, ecosystem services as trying to address climate change problems.
- Balancing requirements and changing current agricultural traditions to use more advanced equipment instead of old ones.
- Develop a long-term investment strategy. Get information to develop investment in adaptation strategy that can be implemented.