

2024 AccelNet PEER2PEER Workshop

Learning Resilience – Lessons for Managing Transboundary Water Resource Vulnerabilities

Beckman Center of the National Academies of Sciences, Engineering, and Medicine

Irvine, California, United States of America | June 24–25, 2024

SUMMARY

Participants in AccelNet Peer2Peer's 2023 workshop in Samarkand exchanged views on how to build a comprehensive assessment framework for identifying, averting, and adapting to transboundary water system vulnerabilities in Central Asia and beyond. Ideas were generated on: 1) integrated approaches to water management that embrace hydrology, ecology, and institutions; 2) regional cooperation; 3) adapting to climate change; 4) acquiring/ using data for cross-disciplinary collaboration; and 5) building innovation capacity. As a next step, we propose to direct our energies on ways to transform these ideas into lessons that can be applied on local and transnational levels to achieve resilience in the face of climate change and other vulnerabilities. The workshop will aim to produce four major outcomes:

- **Expanding on ideas generated in Samarkand:** We will pay particular attention to whether there are clear paths forward regarding the implementation of ideas, and, if not, what more is needed.
- **Identifying new research needs:** We will identify additional issues that require further examination and refinement, using as a point of departure initial lessons generated in Samarkand.
- **Generating new educational and outreach strategies:** To ensure that these lessons are widely disseminated throughout Central Asia, the Middle East, and elsewhere, we will give thought to the best available tools.
- **Generate a journal article** synthesizing the topics and ideas generated during the 2023 and 2024 workshops.

STRUCTURE

The two-day workshop will have two components – a series of **plenary sessions** interspersed with smaller breakout groups. Plenaries facilitated by one or more participants will summarize initial ideas discussed in Samarkand and suggest ways to expand these initial ideas within a discussion panel format to make them more useful. **Breakout groups** will afford participants the opportunity to strategize and generate specific actions regarding implementation, research, and education/outreach.

Monday, June 24, 2024

MORNING SESSIONS

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| 8:00–9:00 | Breakfast, Check-in, & Badges |
| 9:00–9:30 | Welcome Remarks
Amir AghaKouchak , University of California, Irvine
Dalal Najib , National Academies of Sciences, Engineering, and Medicine |
| 9:30–9:45 | Summary of Samarkand Sessions 1 & 2
David Feldman , University of California, Irvine |
| 9:45–10:00 | Day 1 Keynote
<i>Moderator: Amir AghaKouchak, University of California, Irvine</i>
Peter Gleick , Pacific Institute |
| 10:00–10:15 | Coffee Break |
| 10:15–11:00 | Plenary I Panel: Strategies to Enhance Integrated Resource Management
How can integrated water management be achieved? This session will focus on structures needed for a comprehensive, integrated approach to water resources management that embraces hydrological, ecological, and institutional aspects.
<i>Moderator: Ali Mirchi, Oklahoma State University</i>
Mohamed Juana , National Water Resources Management Agency
Kristina Toderich , Mie University
Bridget Scanlon , University of Texas at Austin |
| 11:00–11:45 | Plenary I Breakout
<ol style="list-style-type: none">1. What frameworks, models, and approaches best encompass water vulnerabilities resulting from natural, physical, economic, institutional, and political factors? |

2. How do we incorporate under-represented groups in decision-making?
3. What additional decision-making efforts are needed to foster inclusiveness?
4. What additional research and educational/outreach strategies are needed?

Breakout Room Moderators:

Amir Aghakouchak, University of California, Irvine

David Feldman, University of California, Irvine

Charlotte Love, University of California, Irvine

Abu Mansaray, Oklahoma State University

11:45–12:15

Plenary I Report Back

David Feldman, University of California, Irvine

12:15–1:45

Lunch Break

AFTERNOON SESSIONS

13:45–14:30

Plenary II Panel: Strategies for Fostering Collaboration

How can regional cooperation, interdisciplinary collaboration, and transboundary water sharing be enhanced? (Sharing of both data and resources) This session will review lessons from existing transboundary agreements and expand on ways to make them more effective. Participants will consider additional pathways to strengthen collaboration and foster data acquisition, collection, and sharing.

Moderator: Dalal Najib, NASEM

Stephen Agong, East Central University

Sharon Megdal, University of Arizona Water Resources Research Center

Azeem Shah, International Water Management Institute

14:30–14:45

Coffee Break

14:45–15:30

Plenary II Breakout

1. What lessons can be learned from failed transboundary cases (e.g., the Aral Sea?)
2. What measures should be incorporated in agreements to ensure adverse environmental and social impacts are mitigated/averted?
3. Are calamities that have occurred in the past reversible?
4. What additional research and educational/outreach strategies are needed?
5. How should data needs be prioritized to meet societal needs?
6. What are effective ways to make data understandable and translatable to users?
7. How can we encourage interdisciplinary collaboration for improved modeling?
8. What additional research and educational/outreach strategies are needed?

Breakout Room Moderators:

Fazl Akhtar, University of Bonn

Temur Khujanazarov, Kyoto University

Ali Mirchi, Oklahoma State University

Samer Talози, Jordan University of Science and Technology

15:30–16:00	Plenary II Report Back Azeem Shah , International Water Management Institute
16:00–16:15	Fellowships & Collaboration Hub Charlotte Love , University of California, Irvine Ali Mirchi , Oklahoma State University
16:15–16:30	Day One Summary & Wrap-Up David Feldman , University of California, Irvine
17:00	Group Dinner at Il Fornaio

Tuesday, June 25, 2024

MORNING SESSIONS

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| 8:30–9:00 | Breakfast |
| 9:00–10:00 | Vulnerability Framework & Summary of Samarkand Sessions 3 & 4
Amir AghaKouchak , University of California, Irvine |
| 10:00–10:30 | Day 2 Keynote
<i>Moderator: David Feldman, University of California, Irvine</i>
Bridget Scanlon , University of Texas at Austin |
| 10:30–10:45 | Coffee Break |
| 10:45–11:30 | Plenary III Panel: Strategies for Achieving Resilience and Adaptation

How do we achieve climate-resilient and adaptive systems? This session will review major challenges posed by aridity and climate change and summarize current adaptation approaches. Ways to enhance and fortify these suggested approaches will also be offered.

<i>Moderator: David Feldman, University of California, Irvine</i>
Drew Gronewold , University of Michigan
Sagynbek Orunbaev , American University of Central Asia
Claudia Sadoff , CGIAR |
| 11:30–12:15 | Plenary III Breakout
<ol style="list-style-type: none">1. What would a robust, shareable baseline data system for water availability, quality, availability, and usage look like?2. Assuming natural storage alternatives and conservation are effective tools for adaptation, what improvements are needed?3. What additional alternatives should be included? (e.g., reuse, brackish water desalination, groundwater replenishment).4. What additional research and educational/outreach strategies are needed? |

Breakout Room Moderators:

Annika Hjelmstad, University of California, Irvine

Azeem Shah, International Water Management Institute

Kristina Toderich, Mie University

Debora Yumi de Oliveira, University of California, Irvine

12:15–13:30 Lunch Break

AFTERNOON SESSIONS

13:30–14:00 Plenary III Report Back
Dalal Najib, NASEM

14:00–14:45 Plenary IV Panel: Strategies for Capacity Building and Innovation

How can we build capacity for solving problems and adopting innovations? This session will expand on ways to ensure that societies can develop the scientific, technological, and institutional capacity for adopting innovative solutions for reducing vulnerabilities.

Moderator: Abu Mansaray, Oklahoma State University

Newsha Ajami, Lawrence Berkeley National Laboratory

John Entsminger, Southern Nevada Water Authority

Samer Talozi, Jordan University of Science and Technology

14:45–15:00 **Coffee Break**

15:00–15:45 Plenary IV Breakouts

1. How can decision-support tools and technologies like AI enhance water resource management at various regional scales?
2. How can we promote sharing of regional data and knowledge for effective water diplomacy and cooperation?
3. Who should make investments in capacity-building? Governments, NGOs, IGOs?
4. What additional research and educational/outreach strategies are needed?

Breakout Room Moderators:

Charlotte Love, University of California, Irvine

Dalal Najib, NASEM

Daniel Placht, NASEM

Azeem Shah, International Water Management Institute

15:45–16:15

Plenary IV Report Back

Abu Mansaray, Oklahoma State University

16:15–17:00

Timeline and the Way Forward, Meeting Summary, and Closing Remarks

David Feldman, University of California, Irvine