

Workshop report of

Asian Irrigation Governance and Management Network on “Resilient Community Irrigation Management in Context of Climate Change and multifunctional Rural-Urban Water Use competition in Asia”

Ostrom Center for Advanced Study in Natural Resources Governance (OCeAN)

Asian Institute of Technology (AIT)

July 12-15, 2024

Background

Throughout Asia, the degradation of natural resources is happening at an increasing rate and is a primary environmental concern. Recent tragedies associated with climate change have clear footprints on land degradation and water course changes. A significant proportion of water resources are consumed through irrigation activities, where water resource degradation and water pollution are often the result of overexploitation and contamination by industrial users who make resource-use decisions based on a complex matrix of options and potential outcomes.

Asia is among one of the most dynamic regions in the world. The fundamentality of political and socioeconomic settings has been altered following the financial and economic turmoil in the region. Economic growth, infrastructure development and industrialization are swelling impacts on water resources in the form of resource degradation and social conflict at many stances. The water resource bases are decreasing at the cost of producing economic output. In a way, a part of these challenges has been offset by enhancing natural resource use efficiency and technology extension. However, the net end results are prominent in terms of increasing resource depletion and social unrest. Furthermore, climate change impacts have demanded further the need for adaptation and mitigation measures to consequences of erratic precipitation and temperature fluctuations, increased irrigation needs and extreme events such as floods and droughts, which ultimately affects the livelihood of both rural and urban communities.

In addition, in the quest for delivering the SDGs, Governments, NGOs, and academics have been searching for appropriate policy recommendations that will mitigate the trend of water resource degradation while meeting the resource demand. By promoting effective policy and building the capacity of key stakeholders, it is envisioned that sustainable development can be promoted at both the top-down and bottom-up perspectives. Capacity building in the field of water resource management and poverty alleviation is hence an urgent need for suggesting policy alternatives.

The importance of informed policy guidance in the sustainable governance and management of water resources in general have been recognized due to conflicting and competing demand and uses of these resources in the changing economic context in Asia. This is because water resources are public in partnership with state and local community but the benefits are at the individual and private level in day-to-day basis. In the larger virtual environmental context, however, the benefits and costs have global

implications. There are several modes of governance and management arrangement of these resources in partnership of private-public range. Several issues related to governance and management need to be addressed that can directly feed in the ongoing policy efforts of decentralization and poverty reduction measures in Asia.

Through this research focus, the following issues are of interest to seek answers to:

- a. How can economic growth be prudent together with holding water resources intact?
- b. How has decentralization of water management rights affected the resource conditions?
- c. How can the sustainability of efforts to improve the productive capacity of small-scale irrigation systems be assessed in the context of the current debate on the effects of climate change and initiative and implementation of new programs?
- d. What are the effective polycentric policy approaches for governance and management of water resources that are environmentally sustainable, and gender-balanced?

In addition, the Nepal Irrigation Institutions and Systems (NIIS) database is a key repository of data for the study of Common-Pool Resources (CPR) and Social-Ecological Systems (SES) initiated by Elinor Ostrom and her colleagues from Nepal and Workshop in Political Theory and Policy Analysis at Indiana University. The database includes data on 233 separate irrigation systems in 29 of the 75 districts of Nepal. The number of cases, which ranges from irrigation systems shared by 25 households to 5,000 households, and the number of questions (509). The database is one of the largest databases on irrigation systems in Nepal that has ever been established and analyzed. Furthermore, the database includes systems in which rules were primarily made by farmers (farmer managed) to those in which the rules for using the canals were made, fully or partly, by government agencies. This is also one of the only databases in this field of study that includes longitudinal data collected repeatedly over the last three decades. In addition, the NIIS database is an adaptation of and utilizes the same variables adopting the CPR forms. The database has provided important empirical evidence for studies of water management in Nepal and the region (Lam, 1998; Ostrom and Shivakoti, 2002; Shivakoti, et al., 2005; Ostrom, et. al., 2011).

The Asian region biennial IASC meeting in 2019 concluded that NIIS database is an important source of information for the study of water management and, hence, should continue to be updated and maintained. With the changing social-ecological systems in Nepal and the emergence of new challenges and uncertainties in Asia, there is a need for developing an Asian Irrigation Institutions and Systems (AIIS) database, building upon the structure, design, and methods of NIIS. The AIIS database, which captures the eccentricity of irrigation systems across Asia, will enable researchers to conduct a comparative analysis of water institutions and management, with particular reference to how water systems can be robust and resilient to shocks and disturbances. Geographical diversity within Asia will be a distinctive feature of the database which will cover irrigation systems from India, Indonesia, Nepal, Pakistan, and Thailand.

The Event

Ostrom Center for Advanced Study in Natural Resources Governance (OCeAN) successfully organized a four-day writing meeting on issues related to the governance of irrigation systems in Asia to be participated by the Ostrom Center Associates from five Asian countries (Indonesia, Thailand, Nepal, India, and Pakistan). Based on the presentation, OCeAN intended to bring these issues forward for global audiences and policymakers in planning a special issue of the International Journal of the Commons, and Ostrom

Center's continuing publication of volume VI on natural resources governance and management issues in Asia by Elsevier.

This meeting was held for four days and divided into two main agendas. The first agenda was a Memorial Tribute for two Ostrom Center Founding Members, while the second agenda was spent on presenting research issues and finalizing the special issue of the International Journal of the Commons and Ostrom Center volume VI book on the conference theme. The research meeting was focused on issues related to the governance of irrigation systems in Asia to be participated by the Ostrom Center Associates from five Asian countries (Indonesia, Thailand, Nepal, India, and Pakistan). This meeting was intended to bring these issues forward for global audiences and policymakers in planning a special issue of the International Journal of the Commons, and Ostrom Center's continuing publication of volume VI on natural resources governance and management in different Asian countries.

Daily proceedings

Friday, 12th July 2024

Session 1: 09:00-12:00 (Coffee break@10:30-11)

1. Inauguration of Professor Helmi and Professor Ren Xio Dong Memorial Speeches

Professor Ganesh inaugurated the program and gave heartfelt memorial speeches for Professor Helmi and Professor Ren Xio Dong honoring their shared legacy and inspiring the audience with their wisdom and dedication.



Fig 1: Theme of the workshop



Fig 2: Professor Ganesh gives the welcome speech

2. Dean/SERD: Remarks from AIT and Presentation of Plaques to Prof Rini Bahar and Chen Haiyun in Memory of Late Prof Helmi and Late Prof Ren Xiao Dong

Dean of SERD, Professor Abdul Salam, gave remarks for this event regarding AIT's aims to benefit people by fostering innovation, promoting sustainable development, and enhancing education in technology and management. The Ostrom Center, part of AIT, upholds the principle of equality, ensuring that everyone is treated with fairness and respect. He also mentioned the tribute of Prof Helmi and Prof Ren Xiao Dong.



Fig 3: Professor Abdul Salam (Dean of SERD) welcomes everyone on the behalf of AIT

3. Prof Rajendra Shrestha: Vote of Thanks

Prof. Rajendra extended his gratitude for the event, which included an inspiring thank-you remark about taking responsibility for our natural resources, and thanked organizers who held a workshop on Resilient Community Irrigation.



Fig 4: Prof. Rajendra gives remarks and thanks.

4. Keynote Speech by Bryan Bruns: Groundwater governance and community irrigation management in the context of climate change and water competition: Six synergies as starting points to consider. (via Zoom)

Bryan gave a presentation about groundwater management and community irrigation. He divided his talk into several parts:

- Groundwater irrigation
- Challenges of groundwater governance
- Groundwater governance toolboxes
- Governing groundwater for nexus gains
- 6 Solutions to consider for groundwater governance improvement.

Focusing on the solutions, Bryan highlighted six points to consider the improvement:

1. Learning from local knowledge and hydrogeology
2. Engaging plural values
3. Participatory crafting

4. Recombining old and new institutions
5. Co-management by communities and government
6. Norms and rules



Fig 5: Bryan Bruns gives an online presentation about groundwater management and community irrigation via Zoom.

5. Dr. John Ambler, Ford Foundation, USA Tribute to Helmi and keynote speech (recited by Yonariza)

A memorial tribute was paid to Professor Helmi, highlighting his significant contributions to the field and his remarkable character. Dr. John Ambler recounted how he and Professor Helmi navigated challenging conditions together, ultimately making impactful advancements in the sector.

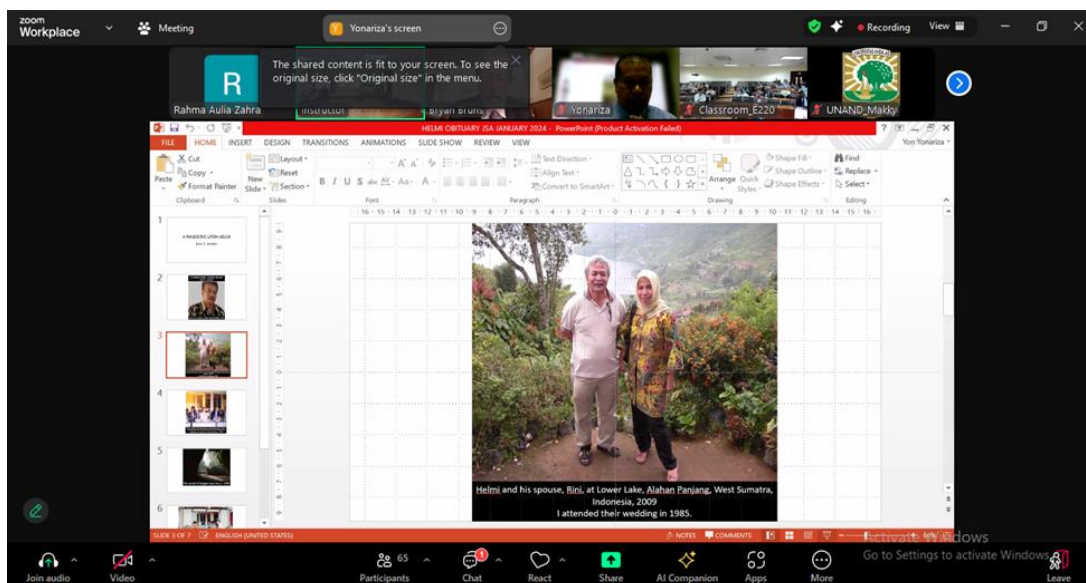


Fig 6: Dr. John Ambler gives a memorial tribute to Professor Helmi via Zoom

6. Personal reflections: Prof Rini Bahar

Prof Rini shared Andalas University views on its collaboration with AIT as a continuous progress, valuing their shared efforts in the past, present, and future. She expressed heartfelt gratitude on behalf of her late husband to AIT and the professors for their unwavering support. She also acknowledged the initiatives on resilient communities and highlighted Helmi's dedicated work in uplifting communities until his last moments. In her tribute to her husband, she conveyed her deep appreciation to all for their support in continuing his legacy of creating sustainable communities.



Fig 7, 8, 9: Prof. Ganesh, Prof Rajendra, and Prof. Salam provide a token of appreciation to Prof Reni (wife of prof Helmi) for Prof. Helmi's dedication to the OCeAN

7. Tribute to Prof. Ren



Fig 10: Prof. Salam provides a token of appreciation for Prof. Ren’s dedication, received by Dr. Chen Haiyun

8. Remark from the Rector of Andalas University. Dr. Efa Yonedi “Andalas-AIT Collaboration, Past, Present and Future” (via zoom)

Dr. Efa gave remarks, especially tribute to Prof. Helmi. He mentioned that Helmi was a former faculty member of Universitas Andalas and had worked extensively on disaster risk reduction projects. Professor Helmi also initiated the disaster management program at Universitas Andalas and was instrumental in building strong relationships within the community.

Dr. Efa also supports the continuing relationship between AIT and Andalas University.



Fig 11: Rector of Andalas University. Dr. Efa Yonedi gives reflections on Prof. Helmi and his agreement and support for continuing relationship between AIT and Andalas University.

9. Group Photo Session



Fig 12: Group photo of 1st day of the workshop.

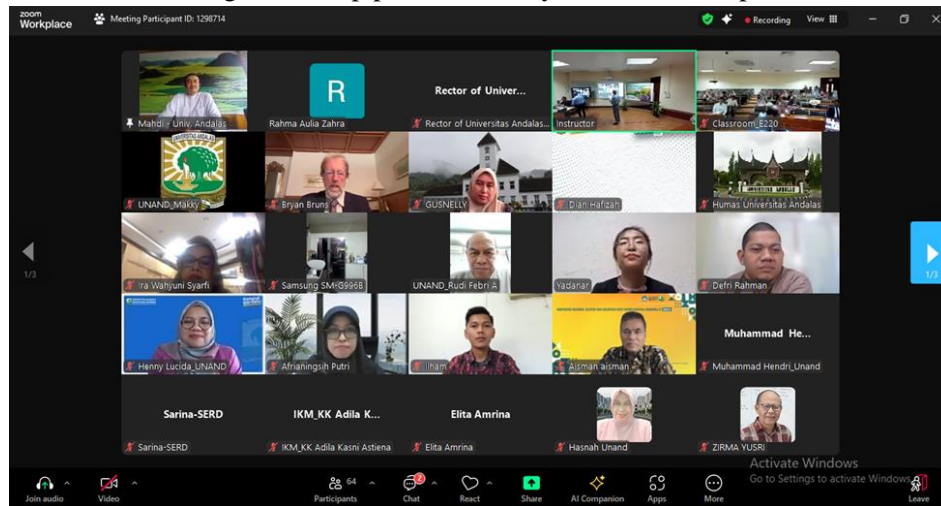


Fig 13: Online participants of the workshop

- Prof. Dr. Chen Haiyun, Tongji University, Tribute to Professor Ren and keynote speech
Prof. Chen gave remarks as a tribute to Prof. Ren and presented China's current collaborations with several global agendas from UN-Habitat. It included an urban sustainability index such as the Shanghai Adapted Index and the Shanghai manual for UN-Habitat 2030. Those assessments provided an understanding of evaluating impacts from UN habitat and local government to know significant differences between areas. Currently, it has 20 pilot cities. Dr. Chen also presented the Lighthouse International: Program of Global Sustainable Development.



Fig 14: Prof. Chen gives remarks as a tribute to Prof. Ren

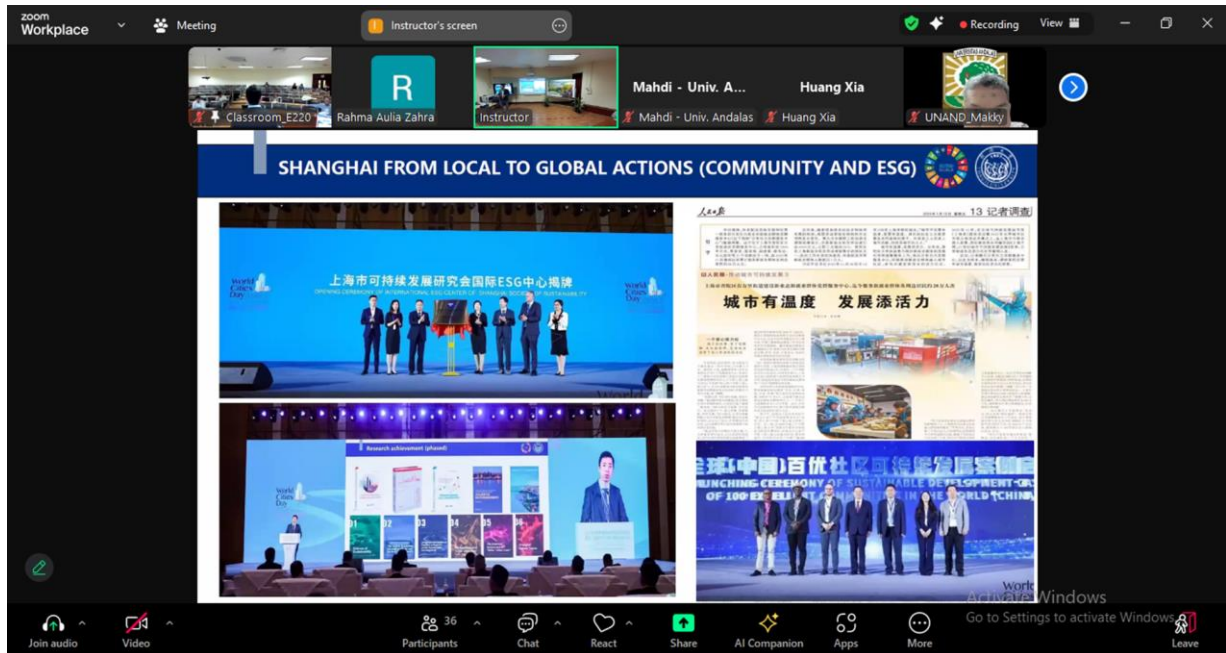


Fig 15: Current collaborations of China with several global agendas from UN Habitat, presented by Prof. Chen.

11. Personal reflections: Dr. Xia Huang (Guizhou University of Economics and Finance) via Zoom
Dr. Huang gave reflections on how she was attached to Prof. Ren and she hoped to continue his good work in the academic contributions.

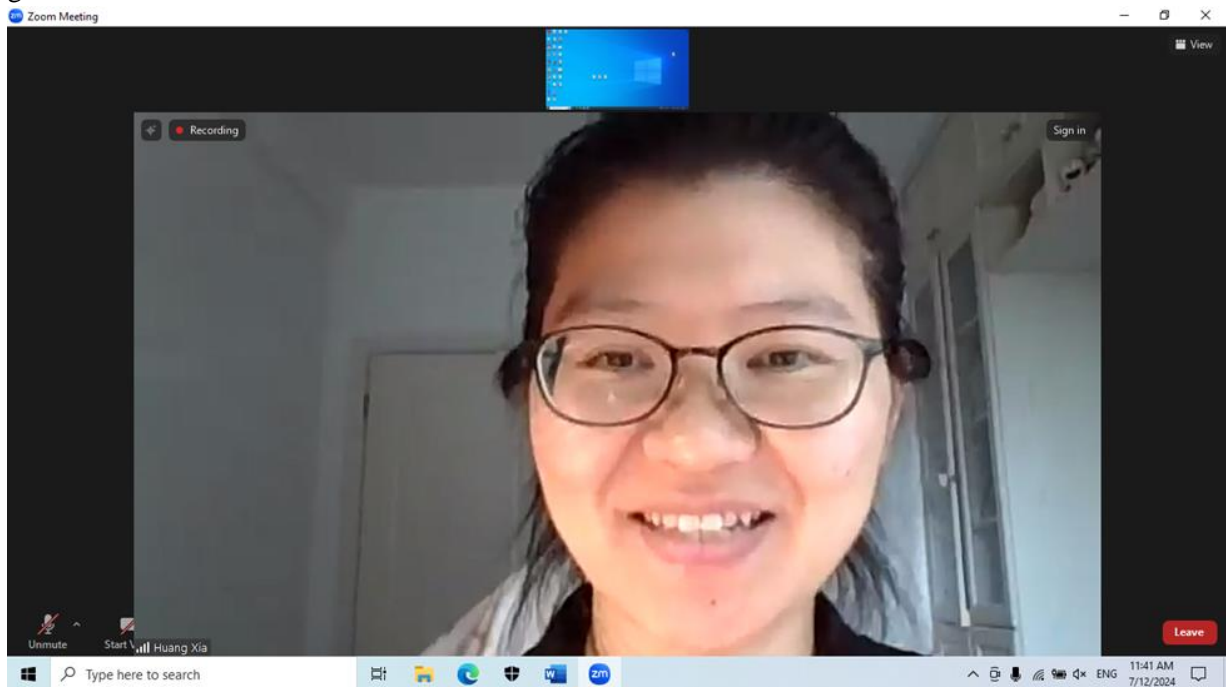


Fig 16: Dr. Huang gives reflections on Prof Ren in honoring and tributing him.

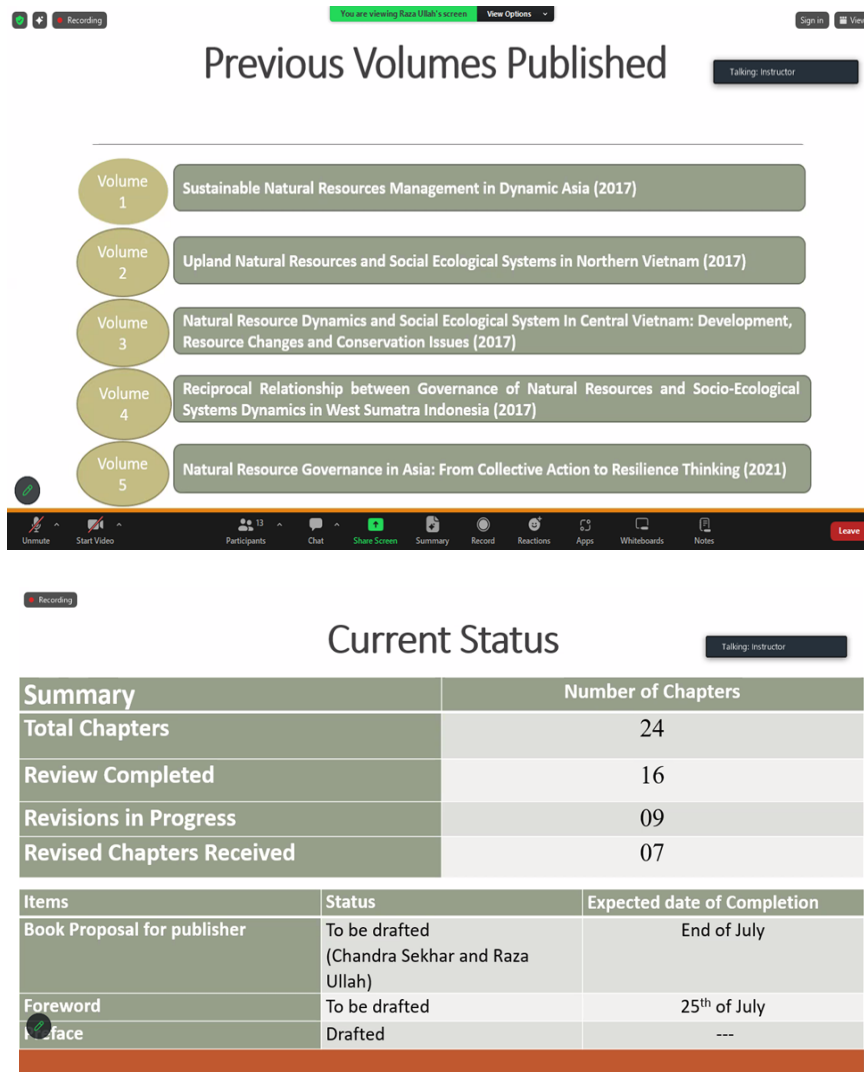
Session 2: 13.30-16.30

12. Reviewing progress in AIIS Research network and immediate plan.

Professor Raza presented on the current status of research works, especially for the book chapters. Prof Ganesh gave several feedback regarding the focus of the scope and context, consisting:

- water irrigation system in Asia
- lowland highland, fisheries, for water resources
- comparing chapters, from different regions

Prof. Ganesh also highlighted the need for gender balance issues.



The screenshot shows a Zoom meeting interface with two slides. The top slide, titled "Previous Volumes Published", lists five volumes with their titles. The bottom slide, titled "Current Status", contains two tables. The first table summarizes the number of chapters in various stages, and the second table provides a detailed status for specific items like the book proposal, foreword, and preface.

Volume	Title
Volume 1	Sustainable Natural Resources Management in Dynamic Asia (2017)
Volume 2	Upland Natural Resources and Social Ecological Systems in Northern Vietnam (2017)
Volume 3	Natural Resource Dynamics and Social Ecological System In Central Vietnam: Development, Resource Changes and Conservation Issues (2017)
Volume 4	Reciprocal Relationship between Governance of Natural Resources and Socio-Ecological Systems Dynamics in West Sumatra Indonesia (2017)
Volume 5	Natural Resource Governance in Asia: From Collective Action to Resilience Thinking (2021)

Summary		Number of Chapters
Total Chapters		24
Review Completed		16
Revisions in Progress		09
Revised Chapters Received		07

Items	Status	Expected date of Completion
Book Proposal for publisher	To be drafted (Chandra Sekhar and Raza Ullah)	End of July
Foreword	To be drafted	25 th of July
Preface	Drafted	---

Fig 17: Discussion on the previously published volume and the current progress on the recent volume.



Fig 18: Groups identification and division

13. Discussion

The workload was divided by assigning a team leader and distributing tasks among the team members. A discussion took place in the NRM Workshop room to plan the work for the upcoming days. The division and scope of work were outlined for journal editors, book editors, and those involved in USAID/RDMA Bangkok and SEI Bangkok proposal writing.



Fig 19: Discussion on group distribution and workload division.

Saturday, 13th July 2024

1. Presentation by Prof. P. K. Viswanathan, Department of Economics and Sustainability, Amrita University, Kochi, India.

Prof. Viswanathan presented the proposed theme: water governance and management system

Methods that will be used:

- The IAD framework to create a database around the 5 countries under the APR
- AIIS framework
- Considering the Nepal Irrigation Institutions and Systems (NIIS)
- can be useful to see Sustainable Resource Governance: TBL Impacts using the DPSIR framework

Prof. Viswanathan also proposed the usage of Problem Tree Analysis and PRA tools

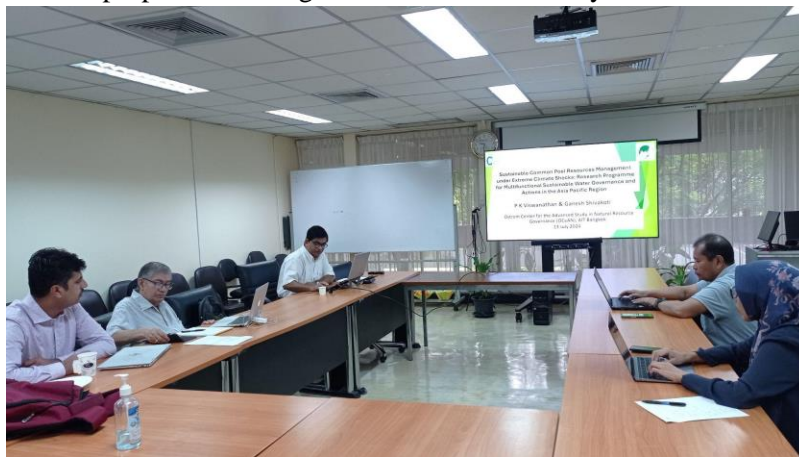


Fig 20: Discussion of the methodologies for the project.

2. Discussion with Dr.Yaseen from Agricultural Business and Management AIT Division of proposal work, consisted of two teams:

- USAID and SEA_Bangkok: Dr. Raza Ullah, Prof. Yonariza, Dr. Yuerlita
- RDMA: Prof. Viswanathan, Dr. Chandra, Prof. Asif Kamran, Yaseem

Dr. Raza presented the discussion about the proposal regarding multi -level research: field level, regional level, household level.

Prof Ganesh gave feedback on the potential journals and book chapters regarding the themes. Prof. Ganesh also highlighted the food security, health issues, and water resources. Focuses will be on the internal and external factors, and proposals can be submitted within 6 months.

Sunday, 14th July 2024

1. Discussions on Proposal Concept for Dr. Chen, Tongji University

Prof Ganesh discussed the potential fundings which were mentioned by Prof. Chen. The team tried to propose a research theme:

“Rural-urban interface in competition/compliments for managing natural resources and environment in the context of climate change and economic development: A Cross-country study for Policy and Action in the Asia Pacific Region.”

Scopes of the research will be based on 5 cities in 5 countries:

- Padang (Indonesia)
- Kochi (India)
- Faisalabad (Pakistan)
- Pokhara (Nepal)
- Chiang Mai (Thailand)

Prof. Viswanathan played an important role as the compiler of the inputs from the team members.

Output of this meeting was three documents consisting:

- Proposal - Concept note
- Proposal - Large version
- PowerPoint Presentation

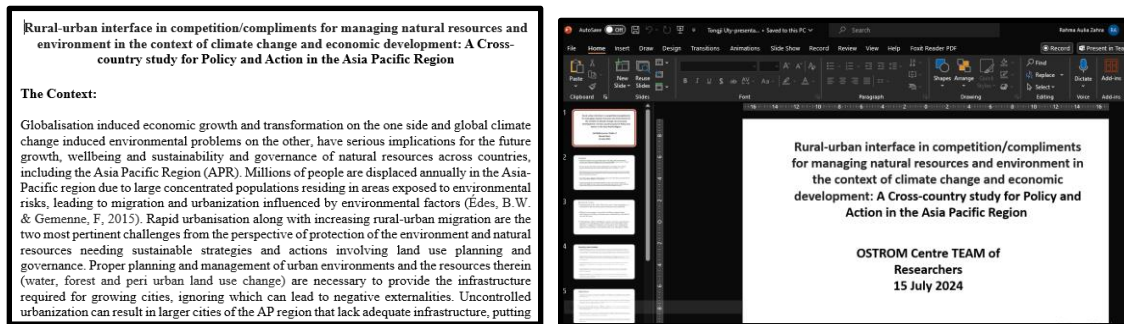


Fig 21: Showcasing the project and finalization.

Monday, 15th July 2024

09.00-11.30

Wrap-up Meetings

The meeting began with a wrap-up and a brief explanation of the three-day work by Prof. Ganesh, who specifically addressed Dr. Juthathip from Chiang Mai University. Following this, Prof. Asif Kamran presented the research conducted in Pakistan, and Dr. Raza Ullah shared insights on adapting NIIS Forms to AIIS Forms. The session concluded with Prof. Ganesh outlining future for network meetings and fundraising initiatives.



Fig 22: Wrap-up meeting discussing the progress of the workshop.



Fig 23: Group photo from the last day of the workshop

Way forward

Prof. P.K. Viswanathan together with other network colleagues leading a proposal writing on *Rural-urban interface in competition/compliments for managing natural resources and environment in the context of climate change and economic development: A Cross-country study for Policy and Action in the Asia Pacific Region* for seeking funding.

Annex 1: Participants' List
Workshop on
Resilient Community Irrigation Management in Context of Climate Change and Multi functional
Rural-Urban Water Use Competition in Asia

12-15 July 2024
Asian Institute of Technology, Thailand

No.	Name	Organization
1	Prof. Rini Bahar	Faculty, Universitas Andalas, Padang. Indonesia
2	Prof. Ganesh P. Shivakoti	Founding Director, Ostrom Center for the Advanced study in Natural Resources Governance (OCeAN), Asian Institute of Technology, Thailand and currently Visiting Professor, Arizona State University, USA
3	Dr Raza Ullah	Department of Agricultural and Natural Resources Economics, University of Faisalabad, Pakistan
4	Prof. P. K. Viswanathan	Department of Economics and Sustainability, Amrita University, Kochi, India
5	Dr Juthathip Chalermphol	Department of Agricultural Economy and Development, Faculty of Agriculture, Chiang Mai University
6	Dr Chen Haiyun	School of Economics and Management, Tongji University, Shanghai, China
7	Dr Zhu Ting	University of Shanghai, China (via Zoom)
8	Prof. Mohd. Asif Kamran	Faisalabad University of Agriculture, Pakistan
9	Prof. Rajendra Shrestha	Co-Director, Ostrom Center for the Advanced study in Natural Resources Governance (OCeAN), Asian Institute of Technology, Thailand
10	Dr Chandra Sekhar Bahinipati	Indian Institute of Technology, Tirupati, India
11	Prof Yonariza	Andalas University, Indonesia
12	Dr. Xia Huang	Guizhou University of Economics and Finance (via Zoom)
13	Dr. Sukit, K.	Chiang Mai University
14	Dr. Jitima	Chiang Mai University
15	Dr. Bryan Bruns	Independent Consultant (via Zoom)
16	Dr. John Ambler	Former Country Representative, Ford Foundation, Indonesia (via Zoom)
17	Dr. Azrifirwan	<u>Andalas University, Indonesia</u>
18	Dr. Hery Bachrizal Tanjung	<u>Andalas University</u>
19	Prof. DR. SYAHRIYAL SYARIF	<u>Andalas University</u>
20	DR. TRESDIARMA	<u>Andalas University</u>
21	DR. FERISYAL RAMLI	<u>Andalas University</u>

22	DR. AYUTRISNA	<u>Andalas University</u>
23	DR. EDISON ILYAS	<u>Andalas University</u>
24	Prof. Dr. Ratni Prima Lita	<u>Andalas University</u>
25	Prof. Dr. Novizar	<u>Andalas University</u>
26	Prof. Tuty Anggraini	<u>Andalas University</u>
27	Dr. dr Afriwardi, Sp.KO, MA	<u>Andalas University</u>
28	Prof Melinda Noer	<u>Andalas University</u>
29	Dr. Endrizal Ridwan	<u>Andalas University</u>
30	Dr. Mahdi	<u>Andalas University</u>
31	Dr. Yuerlita	<u>Andalas University</u>
32	Dr. Muhammad Makky	<u>Andalas University</u>

Annex 2: Schedule

11 July (Thursday) (Afternoon)		
15.00-21:00	Arrival and Registration of Participants	(AITCC Lobby)
Day 1: 12 July 2024 (Friday)		
Session 1: 09:00-12:00 (Coffee break@10:30- 11)	<p>Inauguration and Professor Helmi and Professor Ren Xio Dong Memorial Speeches</p> <p>Ganesh Shivakoti: Background and objectives</p> <p>Dean/SERD: Remarks from AIT and Presentation of Plaques to Prof Rini Bahar and Chen Haiyun in Memory of Late Prof Helmi and Late Prof Ren Xiao Dong.</p> <p>Prof Rajendra Shrestha: Vote of Thanks.</p> <p><u>Keynote speeches:</u></p> <p>Dr. John Ambler, Ford Foundation, USA Tribute to Helmi and key note speech (to be recited by Yonariza)</p> <p>Bryan Bruns: Groundwater governance and community irrigation management in the context of climate change and water competition: Six synergies as starting points to consider. (via Zoom)</p> <p>Personal reflections: Prof Rini Bahar</p> <p>Remark from the Rector of Andalas University. Dr. Efa Yonedi “Andalas-AIT Collaboration, Past, Present and Future” (via zoom)</p> <p>Dr. Chen Huyan, Tongji University, Tribute to Professor Ren and key note speech</p> <p>Personal reflections: Zhu Ting (University of Shanghai) and Xia Huang (Guizhou University of Economics and Finance) via Zoom</p>	(Room E-206 SERD Building)
12:30-13:30	Lunch Break (AITCC)	
Session 2: 13:30-17.00	<p><u>This session will be devoted to reviewing country progress in AIIS Research network and immediate future plan. Professor Asif and Dr. Raza Ullah will present their first round of data analysis results based on the Household and system level research tools developed during 2022 meeting in AIT and Chiang Mai. Ram C Bastakoti and Juthathip will present their earlier research findings from Nepal and Thailand using NIIS explore expansion possibility of AIIS dataset in their field research setting. Sukit and Jitima will present their recent research findings from Muang Fai in Chiang Mai valley using AIIS research tools.</u></p>	(E- 206 SERD Building)

17:00-17:30	Wrap-up for day and Group leader announcement for Journal editors, book editors, USAID/RDMA_Bangkok and SEI_Bangkok Proposal writing.	(E-206 SERD Building)
Day 2: 13 July 2024 (Saturday)		
Session 3: 09:00-10:30	<u>Panel Discussion on the Future Activities for the AIIS Governance and Management in Asia</u> (Moderator: Ganesh Shivakoti, OCeAN) Asif Kamran PK Viswanathan Yonariza Juthathip Chalermphol Ram C Bastakoti	(Small NRM meeting rooms)
10:30-10:45	Coffee Break	
Session 4: 11:00-12:30	Elsevier volume VI Book progress: Raza Ullah Theme and plan for volume VII: R. Shrestha, Yonariza and Juthathip IJC theme and paper submission: Viswanathan, Yuerlita and Raza Ullah	(Small NRM meeting room)
12:30-13:30	Lunch Break (AITCC)	
Session 5: 13:30-17:00 (coffee break@15.00)	Group Break up for Proposal writing: PK Viswanathan will present preliminary draft of the proposal (modified version of earlier Philomathia proposal) to fit in the USAID requirements based on his earlier experience with the USAID RDMA project funded to AIT. Visu will be joined by Rajendra, Chandra Sekhar, Asif and Yonariza. Raza Ullah and Yuerlita will present SEA_Bangkok proposal draft (Yuerlita has grant from SEA_Bangkok and she has experience) based on the Philomathia Foundation proposal. Raza and Yuerlita will be joined by Visu, Ganesh and Jutha.	(Small meeting room TBA)
7.00 pm	Dinner	
Day 3: 14 July 2024 (Sunday)		
8.30-3.30	Both Team for USAID_RDMA_Bangkok and SEA_Bangkok will divide responsibilities and finalize first draft among the team members.	Small NRM meeting rooms
Day4: 15 July 2022 (Monday)		
9:00–12:00	PK Viswanathan and Raza Ullah Groups present the power point and distribute word file of the proposal to the participants followed by discussions on Asian Irrigation Institutions and Systems on Future Activities of AIIS with respect to: <ul style="list-style-type: none"> Adaptation experience of NIIS Forms to AIIS Forms: Raza Ullah 	Small NRM meeting training room

	<ul style="list-style-type: none">• Country collaboration and Data storage and retrieval: Ram Bastakoti• Future Network Meetings and Fund raising: Ganesh Shivakoti <p><u>Afternoon: Rajendra and Ganesh will make an effort to fix meetings with proposal submission contact person at USAID Bangkok and SEA Bangkok office.</u></p> <p><u>Evening and next day Departures</u></p>	
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