

Report for Contract number C 004256: ACIAR Contribution to Salinity Symposium 2024

Prepared by Associate Professor Jason Condon, Charles Sturt University, 2 April 2024

Summary:

The International ACIAR Salinity Futures Symposium was held March 3-7 2024 at Can Tho University, Vietnam and attended by 95 attendees (additional attendees from Vietnam that attended individual sessions were not counted). ACIAR was represented by staff of the Vietnam Country Office (Huong Nguyen) and RPMs for Climate Change (Veronica Doerr) and Water (Neil Lazarow).

The symposium brought together teams from three ACIAR projects:

SLaM2018/144 Farmer options for crops under saline conditions in the Mekong River Delta, Vietnam

LWR/2017/027 Adapting to Salinity in the Southern Indus Basin

LWR/2014/073 Cropping system intensification in the salt-affected coastal zones of Bangladesh and West Bengal, India

Presentations were provided in themes relating to changes in the landscape due to climate change, crop options for farmers adapting to salinity, gender dimensions of impact, building knowledge and creating impact for communities, and building socioeconomic benefits through markets. A field day allowed the 95 attendees to visit field sites of the FOCUS project in Soc Trang Province on the 5th March.

An post-event evaluation provided evidence of high satisfaction of attendees with the symposium. Attendees valued the opportunity to create new networks and great value was seen in the symposium bringing together researchers working on a common problem but from many disciplines.

ACIAR should look to hold similar symposiums but extend the duration to allow structured time for collaborative discussions around topics covered during each day. The sharing of interdisciplinary knowledge and response to challenges was a key takeaway for many attendees. Future symposiums should foster exposure to opportunities of interdisciplinary partnerships and network development.



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Program for International ACIAR Salinity Futures Symposium

Day 1 – Sun 3 March 2023 – Welcome and Reception Dinner

5:30 onwards: Welcome followed by Reception Dinner

5:30-5:35	Introduction & housekeeping	Local host
5:35-5:45	Welcome to Vietnam	ACIAR Vietnam Country Manager (Nguyen An)
5:45-6:00	Welcome by other ACIAR reps (RPMs for Water and Climate Change)	
6:00 onwards	Reception dinner	

Day 2 – Mon 4 March 2023 – Keynotes, Project Introductions, Theme 1 & 2 Presentations

8:00 – 9:45 Keynote Presentations – Chair: Chau Minh Khoi

Time	What	Who	Page
8:00-8:05	Symposium Opening Address	CTU Rector	
8:05-8:40	Keynote 1: How ACIAR is responding to challenges from climate change (15 mins each + 5 mins Q&A)	ACIAR RPMs for Climate Change (Veronica Doerr) and for Water (Neil Lazarow)	
8:40-9:05	Keynote 2: Potential for collaborations with CGIAR Initiative on Asian Mega-Deltas (AMD) (20 mins + 5 mins Q&A)	AMD Lead: Bjoern Ole Sander	12
9:05-9:45	Keynote 3: Perspectives from a Salinity Futures Expert (30 mins + 10 mins Q&A)	Katarzyna (Kate) Negacz	16

9:45 – 10:30 Morning tea with poster pitches (*Themes 1 and 5*)

Poster	Title	Who	Page
1.1	Challenges of groundwater management in coastal Sindh under climate change	Shahryar Jamali	48
1.2	Impact of escalating groundwater pumping in the southern Bari Doab	Abdul Raheem	52
1.3	Temporal salinity mapping in Sindh using Normalized Difference Salinity Index (NDSI)	Arjumand Zaidi	56
1.4	Assessing the water quality in the Malwah region of Sindh: A comprehensive evaluation of physicochemical and microbial indices	Syeda Sara Hassan	60
5.1	Upland crop profitability and farming contract attribute preferences for marketing in the Vietnamese Mekong Delta	Tran Thi Thu Duyen	160
5.2	Constraints and opportunities for improved smallholder engagement in value chains for novel upland crops in the Vietnamese Mekong Delta	Le Thanh Sang	164
5.3	Rural youth employment prospects in agriculture: a survey of university students in the Mekong Delta, Vietnam	Mao Huynh Nhu	168

10:30 – 12:15 Project overview and introductions – Chair: Jason Condon

Time	What	Who	Page
10:30-11:00	Overview of Mekong Delta Situation & Project Overview (20-25 min + Q&A)	Chau Minh Khoi	20
11:00-11:30	Overview of Ganges Coastal Zone Situation & Project Overview (20-25 min + Q&A)	Mohammed Mainuddin	24
11:30-12:00	Overview of Southern Indus Basin Situation & Project Overview (20-25 min + Q&A)	Kamran Ansari (5 mins context), Bakhshal Lashari (10-15 mins) & Michael Mitchell (5 mins)	28
12:00-12:15	Links across projects: Comparing and contrasting	Ed Barrett-Lennard	32

12:15 – 1:30 Lunch**1:30 – 2:45 Theme 1: Changes in the Landscape and Water Dynamics – Chair: Michael Mitchell**

Time	What	Who	Page
1:30-1:50	Monitoring land use change in response to temporal salinity in the Mekong (15 mins + 5 Q&A)	Mekong – Vo Quoc Tuan	36
1:50-2:10	Using remote sensing maps and groundwater modelling to understand salinity trends and explore future scenarios in South Punjab (15 mins + 5 Q&A)	Indus – Mobin Ahmad (5 mins), Abdul Raheem (5 mins) and Irfan Baig (5 mins)	40
2:10-2:30	Influence of water resources availability on dry season crop cultivation in the Ganges Delta (15 mins + 5 Q&A)	Ganges – Priya Lal (8 min) and K K Mahanta (7 min)	44
2:30-2:45	Rapporteur (5 mins +10 discussion)	Richard Bell	

2:45 – 3:30 Afternoon tea with poster pitches (Theme 2)

Poster	Title	Who	Page
2.1	Impact of mulching on the productivity of vegetables cultivated in saline soil at Malwah distributary, Sindh, Pakistan	Abdul Latif Qureshi	64
2.2	Opportunity for alternative crops to offset rice crop failure in the dry season due to drought and saline intrusion	Nguyen Thi Kim Phuong	68
2.3	Soil moisture sensor Chameleons as a tool to promote water savings for cropping under drought and fresh water scarcity conditions	Cao Dinh An Giang	100
2.4	Benefits of rice straw mulching on soil and crops in a rice-based cropping system affected by saline intrusion	Tran Duy Khan	72
2.5	Selection of suitable Quinoa and Cowpea varieties for the Mekong Delta	Nguyen Binh Duy	76
2.6	Determinants of adaptation strategies to saline intrusion among upland-crop farmers	Huynh Viet Khai	80

3:30 – 5:00 Theme 2: Options for Adapting to Salinity – Chair: Mainuddin

Time	What	Who	Page
3:30-3:55	Role of APSIM at the field or plot scale (10 mins)	Ganges – Taslima Zahan	84
	Changing crop selection, on-farm management and cropping calendar (10 mins)	Ganges – S. K. Sarangi	88
	5 Q&A on both presentations		
3:55-4:20	Trialling varieties and changing practices: Farmers owning their salinity adaptations (10 mins)	Indus – Abdul Latif Qureshi (7 mins) and Babar Zaman (3 mins)	92
	Enhancing community resilience through aquaculture in salinity affected coastal areas of Pakistan (10 mins)	Indus – Ifrah Malik (5 mins) and Aslam Jarwar (5 mins)	96
	5 Q&A on both presentations		
4:20-4:40	Optimising water use with chameleons (15 mins + 5 Q&A)	Mekong – Cao Dinh An Giang	100
4:40-5:00	Rapporteur (5 mins +10 discussion)	Dang Duy Minh	

5:00-5:15 Introduction by Mekong team to Field Day Activities: Dr Dang Duy Minh**6:30 onwards: Symposium Dinner 2**

Day 3 – Tue 5 March 2023 – Field Site Visit

8am	Pick up from hotel	Travel to Soc Trang
10:00-3:30	Field site visits (including lunch break)	Long Phu and Lieu Tu: Upland crop trials, irrigation management timing of sowing, GHG measurement, biochar
5:30	Arrive Can Tho	

6:30 onwards: Symposium Dinner 3

Day 4 – Wed 6 March 2023 – Theme 3 – 5 Presentations and Closing Discussion on Shared Learnings and Ways Forward

8:30 – 9:45 Theme 3: Gender Dimensions of Impact – Chair: Sandra Heaney-Mustafa

Time	What	Who	Page
8:30-8:50	Women's leadership role in adapting to salinity on farm through kitchen gardening co-inquiry investigations	Indus – Iqra Mohiuddin (10 mins) and Nazar Fareed (5 mins)	104
8:50-9:10	Female farmer perspectives of climate change in the Mekong Delta	Mekong – Nguyen Anh Minh	108
9:10-9:30	Impact of cropping intensification on women farmers	Ganges – Sanchayeeta Misra	112
9:30-9:45	Rapporteur (5 mins +10 discussion)	Jen Bond	

9:45 – 10:30 Morning tea with poster pitches (Theme 4)

Poster	Title	Who	Page
4.1	Stakeholder Engagement for Research and Learning (SERL)	Benazir Kumbhar	142
4.2	Evaluating ASSIB: Stories of change	Catherine Allan	116
4.3	Creating sustainable livelihood opportunities through shrimp aquaculture in coastal Pakistan	Aslam Jarwar	120
4.4	Geospatial applications to improve information on local land and water capability for farmers living in salinity affected areas	Mobushir Khan	124
4.5	Adapting to Salinity for improving livelihood: An Institutional Analysis Framework Approach	Nasir Nadeem	126
4.6	Creating a larger FOCUS	Susan Orgill	130

10:30 – 12:15 Theme 4: Building Knowledge and Creating Impact for Affected Communities – Chair: Dr Vo Quoc Tuan

Time	What	Who	Page
10:30-10:50	Economic and community impacts of cropping intensification in the coastal zones of the Ganges Delta	Ganges – Mahanam Das	134
10:50-11:10	Role of training/extension to understand soil constraints for crop selection	Mekong – Dr Dang Duy Minh	138
11:10-11:30	Stakeholder Engagement for Research and Learning (SERL): An approach that works when learning with farmers	Indus – Sandra Heaney-Mustafa (10 mins) and Benazir Kumbhar (5 mins)	142
11:30-11:45	Rapporteur (5 mins +10 discussion)	Koushik Brahmachari	

12:15 – 1:15 Lunch**1:15 – 2:30 Theme 5: Building Successful Socio-economic Impacts – e.g. through Markets – Chair: Susan Orgill**

Time	What	Who	Page
1:15-1:35	Value adding/chain strategies for produce grown in saline affected areas	Indus – Bilal Ahsan (10 mins) and Faisal Riaz (5 mins)	146
1:35-1:55	Creating opportunities for farmers through linkages	Ganges – Mazharul Anwar/Dr Shahidul Islam and Dr Dhiman Burman	150
		Dhiman Burman & Sonali Mallick	154
1:55-2:15	Market security via successful private sector links in the Mekong	Mekong – Dr Ngo Thi Thanh Truc and Le Thanh Sang	158
2:15-2:30	Rapporteur (5 mins +10 discussion)	Irfan Baig	

2:30 – 3:00 Afternoon tea**3:00 – 5:00 Closing Discussion on Shared Learnings and Ways Forward – Chair: Chau Minh Khoi**

Time	What	Who	Page
3:00-3:10	Summary: Contribution of land and water capability framework and salinity handbook	Ed Barrett-Lennard	174
3:10-3:40	Summary thoughts as inputs to moderated discussion (2-3 minutes per speaker)	Mekong – ACIAR Vietnam Country Manager, Prof Bo & Chau Minh Khoi Ganges – ACIAR South Asia Manager, Nazmun Karim & Akkas Ali Indus – ACIAR Pakistan Manager, Bakhshal Lashari & Asad Qureshi	
3:40-4:45	Moderated open discussion – gaps, challenges, lessons, synergies: research creating impact under a changing climate	Moderator: Richard Bell	
4:45-4:50	The way forward for salinity research under a changing climate (5 mins)	ACIAR RPM Climate Change: Veronica Doerr	
4:50-5:00	ACIAR vote of thanks Vietnam host vote of thanks	ACIAR RPM Water: Neil Lazarow Chau Minh Khoi	

6:30 onwards: Symposium Dinner 4

Day 5 – Thu 7 March 2023: Agro-ecological Tour of The Mekong

7:00am pick up from Hotel - please checkout before departure time

Travel to Tram Chim National Park

Includes presentation by IUCN's Country Representative for Pakistan, Mr. Mahmood Akhter Cheema, during our lunch break.

Expected time of arrival in Ho Chi Minh City at 5 pm -

Destination:

- Airport

Victory Hotel in Ho Chi Minh City.

Attendees

Member of all 3 ACIAR salinity-related projects



Dr Edward Barrett-Lennard
Professorial Fellow, Murdoch University
Senior Principal Soil Scientist, Western Australia Department of Primary Industries and Regional Development (DPIRD)

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Dr Ed Barrett-Lennard is a Professorial Fellow at Murdoch University and a Senior Principal Soil Scientist at the Department of Primary Industries and Regional Development in Western Australia. He works in ACIAR projects in Pakistan, Bangladesh, India, and Vietnam. Ed works in the disciplines of agronomy, soil science and plant physiology. For 40 years, his research has focused on the growth of crops and pastures in saline and waterlogged environments, and on the adoption of saline agricultural principles by farmers and extension workers. He is an author of 80 scientific papers and 6 books.

Member of ACIAR's Mekong and Indus salinity-related projects



Dr Jen Bond
Senior Lecturer in Human Geography
School of Agricultural, Environmental and Veterinary Sciences Charles Sturt University

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Jen Bond is a Senior Lecturer in Human Geography at Charles Sturt University, Australia. Jen's research follows two main streams: 1) human-wildlife conflict and 2) agricultural development in Southeast Asia. Jen's work doesn't focus specifically on salinity but looks broadly at rural transformation in various agricultural contexts. This includes farmers' adaptation to climate change, adoption of different farming systems and techniques, gender, migration, community-based natural resource management and decision-making. Jen has undertaken research in Vietnam, Kenya, India, Cambodia, Laos, Indonesia, and Malaysia.

Members of ACIAR's Mekong project



Dr Jason Condon

Associate Professor in Soil Science

Charles Sturt University

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Jason is an applied soil chemist specialising in soil fertility for crop and pastures. His research portfolio includes projects dealing with acid soil management, fertiliser efficiencies, carbon sequestration, nitrogen cycling, and salinity management. Jason has collaborated with colleagues at Can Tho University in Vietnam since 2006 and currently leads the ACIAR funded FOCUS project in the Mekong Delta.



Dr. Chau Minh Khoi

Associate Professor of Soil Fertility and Soil Chemistry

College of Agriculture

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Dr Chau Minh Khoi is an ACIAR John Dillon Fellow and Vice Dean of the College of Agriculture at Can Tho University (CTU). He has been involved in ACIAR-funded projects since 2011 and is a country coordinator for the ACIAR FOCUS project. He leads a range of projects focusing on soil management practices for sustaining agricultural production. His areas of interest are soil organic matter sequestration, availability of soil nitrogen and phosphorus nutrients under cropping diversification and optimal management strategies for acid sulphate soil and saline-affected soils in the Mekong Delta, Vietnam.

Dr Ben Stewart-Koster

Senior Research Fellow

Australian Rivers Institute, Griffith University

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Ben is a quantitative ecologist with expertise in statistical modelling for ecological and agricultural applications. He works on basic and applied research in aquatic systems collaborating with researchers, managers and farmers. With a broad focus on relationships between river flows and aquatic systems, he applies innovative statistical approaches to identify important relationships and guide the management of rivers and agroecosystems. Ben also conducts training workshops in quantitative methods for ecological and agricultural scientists in Australia and Asia. These include tailored workshops on Bayesian statistical methods and Bayesian networks, regression and generalised linear models. His full profile is on the link below.

<https://experts.griffith.edu.au/7711-ben-stewartkoster>

Dr Susan Orgill

Soil Carbon Program Manager and Senior Scientific Adviser

Select Carbon, Canberra, Australia

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Dr Susan Orgill leads the Soil Carbon Program at Select Carbon, part of Shell's nature-based solutions business. Susan is an applied soil scientist with a background in soil extension, and 20 years' experience in soil health and soil carbon sequestration research and development with NSW Government and the private sector. She is data-driven and passionate about working with farmers to identify solutions that increase productivity, soil carbon and farming system resilience.





Dr Nguyen Van Sinh
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Dr. Sinh is a lecturer at the Faculty of Soil Science, College of Agriculture, Can Tho University, Vietnam. His research expertise is in the areas of soil ecology, soil management, and sustainable agriculture, especially with a focus on the diagnostic and applications of soil nematodes and nematodes associated with plants. Please see his profile at the link below.

<https://www.researchgate.net/profile/Nguyen-Sinh>

<https://scholar.google.com/citations?user=UUsiS3AAAAAJ&hl=vi>



Campbell Watt

Charles Sturt University

Bachelor of Agriculture Science (Honours)

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I am a rural country boy, who grew up on a sheep farm and asked a few too many questions which landed me at university. I enjoy the comradery of sports and the freshness of the outdoors. I like to spend my days walking without intention admiring the beauty that surrounds us all. Passion is what drives hope for me and it has been great to surround myself with passionate people who share the desire to move the world forward. A quote that resonates with me is 'the core of one's spirit comes from new experiences.



Sarah Fraser

Charles Sturt University

Bachelor of Agricultural Science

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I am a Honours student at Charles Sturt University in Wagga Wagga. My Honours project is looking into the influence of biochar application rate on nitrogen fixation of cowpea. I have worked in the broadacre cropping industry of Australia for four years part-time while studying my undergraduate degree but I am excited to take on this opportunity in the research section of the agriculture industry.



Title: Dr. DANG DUY-MINH

Institution: College of Agriculture, Can Tho University

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Dang Duy Minh is a lecturer in the Soil Science Department, College of Agriculture in Can Tho University. Minh is an ACIAR-John Allwright Fellow and has finished his PhD program in the Australian National University in 2017. He has also graduated the Master program in University of Bonn, Germany – titled “Agricultural Sciences and Resource Management in the Tropics and Subtropics (ARTS)”. Currently, his research areas are soil chemistry, cropping systems and greenhouse gas emissions from agricultural systems. He has experiences for more than 15 years in field trials relevant to soil chemistry, soil physical researches in the Vietnamese Mekong Delta.



Dr. Paul Kristiansen
A/Prof Rural Development & Food Systems
School of Environmental and Rural Science
University of New England, Australia
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Dr Paul Kristiansen is an Associate Professor in Food Systems & Rural Development, University of New England. He has over 20 years' experience in rural development in South and South-East Asia, participating in numerous projects related to farming systems, land use and livelihood impacts, natural resource management, marketing and value chains, and policy analysis. He has research and teaching expertise in horticultural science and bio-statistics, and has presented training on research methods and project management across South-East Asia. Paul has a strong interest in livelihood transformations and adaptive capacity in the context of changes in climate, society, technology and agribusiness.

<https://www.une.edu.au/staff-profiles/ers/pkristi2>



Mr. Michael Coleman
Research Project Manager
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Mr Michael Coleman is a Research Project Manager in the School of Environmental and Rural Science, University of New England. His research background includes social research regarding transformation in agricultural systems in developing country contexts and evaluating weed management practices. Michael has extensive experience in quantitative and qualitative data collection and publishing information to improve rural livelihoods (e.g. integrated weed management in vegetable production, grazing pastures, perennial essential oil crops) including academic and extension outputs. He has also participated in numerous capacity building activities for rural R&D in South-East Asia.

<https://www.une.edu.au/staff-profiles/ers/mcolema8>



Ms. Mao Huynh Nhu
Rural Development Consultant
University of New England, Australia

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Ms Mao Huynh Nhu is a rural development consultant, University of New England. Her research background is in agricultural economics, with a focus on sustainable agricultural production and empowerment of women in farming communities. Nhu has also participated in research projects addressing adaptation to, and mitigation of, the impacts of climate change in developing countries, with a focus on the Vietnamese Mekong Delta (VMD). More recently, she has been involved in qualitative assessment of upland crop value chains and quantitative research on profitability, adaptive capacity of upland crop farmers in the VMD.



Mr. Le Thanh Sang
Researcher at Soil Science Department, College of Agriculture,
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Mr Le Thanh Sang is a researcher at the Soil Science Department, College of Agriculture, Can Tho University. His research background is in agricultural and natural resource economics, focusing on rural development, smallholder farmer value chain research, and the impacts of climate change in the Vietnamese Mekong Delta (VMD). Sang has been involved in socio-economic research in the FOCUS project, with the goal of understanding economic efficiency, as well as constraints and opportunities of farmer upland crop adoption. He also was the project leader on the ACIAR-funded project, which explored the operation of upland crop value chains in the VMD.



**Dr Nguyen Anh Minh,
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Dr Nguyen Anh Minh is a social scientist in the Department of Sociology, School of Social Sciences and Humanities at Can Tho University. She has experience collaborating on internationally projects. Her research focusses on gender equality, equity and empowerment, sustainable development in the agriculture, migration under impacts changes, human rights (i.e., women, disability people, and children), and rural development. She has conducted international research projects in different fields in the Vietnamese Mekong Delta including gender and migration.



Dr Huynh Viet Khai

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Dr. Huynh Viet Khai holds a Ph.D. earned in 2011 and completed a two-year postdoctoral fellowship at Kyushu University, Japan. Currently, he serves as an Associate Professor and Dean of Faculty of Environmental and Resource Economics, School of Economics, Can Tho University, Vietnam. Dr. Khai's research delves into the efficiency of agricultural production, water pollution's impact, and the demand for agricultural insurance. He investigates solutions for poverty reduction and explores strategies for promoting organic production and biodiversity conservation. His interests extend to valuing non-market goods, including agricultural and forestry externalities, waste management, and environmental policy. He employs advanced methods like contingent valuation (CV) and choice modeling (CM) for his research.

<https://scholar.google.com/citations?user=zph5DLEAAAAJ&hl=en&oi=ao>



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Dr. Tran Thi Thu Duyen is a lecturer of College of Economics, Can Tho University. She is a Doctor in Agricultural and Resource Economics. She studied Master and Ph.D courses in Kyushu University (Japan). She has been involved in some research projects in the fields of Agricultural Economics, Aquacultural Economics, and Environmental Economics since 2010. She has experiences in all aspects of doing research such as developing proposals, conducting surveys, analyzing data, writing reports and publishing academic papers.



Dr Nguyen Thi Kim Phuong
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Dr Nguyen Thi Kim Phuong is working at Soil Science Department, College of Agriculture, Can Tho University, Vietnam as a lecturer and researcher. Her research has focused on greenhouse gas emissions, soil degradation, problem soil reclamation, soil organic amendments, crop rotation and soil fertility.



MS's Student (ongoing) Cao Dinh An Giang
Soil Science Department, College of Agriculture
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Giang is a researcher at the Soil Science Department, College of Agriculture, Can Tho University, Vietnam. His research expertise is in the areas of soil nutrition, soil chemistry, waterlogged/ saline soils. Please see his full profile in the link below.

<https://docs.google.com/document/d/1qjgZaiKDnC0Wjgqu9pyaNsDVIYig1Q0CGyxlSrGht2mk/edit?usp=sharing>



Dr. Tran Ba Linh

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Dr. Tran Ba Linh is a lecturer and researcher of College of Agriculture, Can Tho University, Vietnam. His research expertise is in the areas of soil physics, soil water, soil degradation and conservation. During the working period at Can Tho University, he participates in many local and abroad projects.



Dr Duy Binh Nguyen

Research Fellow of Soil Science

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Dr Duy Nguyen is a research fellow at the Industrial Crops Department, Institute of Agricultural Science for Southern Vietnam. His research expertise is in the upland soil management, sustainable agricultural management, crop nutrition and soil constraints in the central highland region.



Dr. Duong Van Hay

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Dr. Duong Van Hay is a researcher at the Agronomy Department, Institute of Agricultural Sciences for Vietnam, located in Ho Chi Minh City. His research expertise spans various areas including agri-biotechnology, soil science, conservation agriculture, organic agriculture, and agronomy.



Dr Ngo Thi Thanh Truc
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Dr Ngo Thi Thanh Truc is a senior lecturer at the Faculty of Environmental and Resource Economics, School of Economics, Can Tho University, Vietnam. Her research expertise is in the areas socio-economics, environmental economics, economics of climate change, supply and value chain, gender research focus on environmental friendly technologies. Please see her full profile in the link below.

<https://scholar.google.com/citations?user=mj6x3kEAAAAJ&hl=en&oi=ao>

Ms Chung Thi Ngoc Hue

Researcher

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Ms. Chung Thi Ngoc Hue is a young researcher in agricultural economics at School of Economics, Can Tho University, Vietnam. Her research expertise is in the area of agricultural economics, market and value chain analysis.



Members of ACIAR's Ganges project (CSI4CZ)

Cropping system intensification in the salt-affected coastal zone of the Ganges delta



Dr Mohammed Mainuddin
Principal Research Scientist and Team Leader
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Mohammed Mainuddin is a Principal Research Scientist and Leader of the 'Water and Society Team' with the Water Security Program of CSIRO Environment in Canberra, Australia. Prior to that he worked with International Water Management Institute (IWMI), Sri Lanka and Asian Institute of Technology (AIT), Thailand. He has over 32 years of research experience in integrated water resources management and modelling for river basins, coastal water and salinity management, irrigation systems performance analysis, agricultural productivity and food security analysis, socio-economic and livelihood issues related to water use, and impact of climate change on water availability, agricultural productivity, and food security.



Dr Richard Bell
Professor of Sustainable Land Management
Murdoch University, Perth, Australia

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Dr Richard Bell is a Professor at the Centre for Sustainable Farming Systems, Food Futures Institute, Murdoch University, Perth Australia. His research expertise is in the areas of crop nutrition, sandy soils, soil management, conservation agriculture, grain biofortification, acidity tolerance, waterlogged/ saline soils, subsoil constraints. Please see his full profile in the link below.

https://researchportal.murdoch.edu.au/esploro/profile/richard_bell/overview



Dr. Nazmun Nahar Karim
Member Director
Bangladesh Agricultural Research Council (BARC), Dhaka

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Dr. Nazmun Nahar Karim is working as Member Director at Bangladesh Agricultural Research Council and has over 30 years' experience in crop-soil-water management for cropping system intensification. Dr. Karim's main research interests include irrigation water management of field crops in drought and saline-prone ecosystems of Bangladesh. Her work contributes significantly to the development of resilient irrigation systems, adaptive water management strategies, and evidence-based policies that promote socio-economic well-being of people

living in coastal and drought affected areas, including through the ACIAR project “Mitigating risk and scaling-out profitable cropping system intensification practices in the salt-affected coastal zones of the Ganges Delta”.



Dr. Md. Mazharul Anwar
Chief Scientific Officer and Head, On-Farm Research Division
Bangladesh Agricultural Research Institute (BARI), Gazipur

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Dr. Md. Mazharul Anwar is a Chief Scientific Officer and Head of On-Farm Research Division of Bangladesh Agricultural Research Institute. He is an agricultural economist, leading research programs exploring issues and problems together with extension agents, donor agencies, NGOs, farming communities, and local government authorities. For the ACIAR CSI4CZ project, he is providing significant support to enhance knowledge and crop productivity of farmers in the saline belt of Bangladesh through saline tolerant technology dissemination, training, organising farmers into clubs and groups, developing linkages that can give farmers opportunities to grow a marketable surplus for improved livelihoods.



Dr. Md. Faruque Hossain
Principal Scientific Officer, On-Farm Research Division
Bangladesh Agricultural Research Institute (BARI), Gazipur

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Dr. Md. Faruque Hossain is a Principal Scientific Officer of Bangladesh Agricultural Research Institute’s On-Farm Research Division and Deputy Program Director of its Program on Agriculture and Rural Transformation for Nutrition, Entrepreneurship and Resilience (PARTNER). He is an agronomist specializing in plant physiology and farming systems who researches farming systems socioeconomics, cropping and agro-forestry improvement, on-farm soil fertility management, home gardening and family nutrition, on-farm trials of advance lines, and technology transfer throughout Bangladesh. He focuses on extension agents, donor agencies, NGOs, farming communities, and local government authorities to develop linkages and give opportunities for farmers to create marketable surpluses.



Dr. Md. Shahidul Islam Khan
Chief Scientific Officer, On-Farm Research Division
Bangladesh Agricultural Research Institute (BARI), Patuakhali

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Dr. Md. Shahidul Islam Khan is a distinguished agricultural scientist with over 25 years’ experience. Currently serving as Chief Scientific Officer at the Bangladesh Agricultural Research Institute, Dr. Khan has dedicated his career to studying changing coastal farming

systems and their relationship with climate change in Bangladesh. He has made significant contributions to the advancement of agricultural practices, resulting in the publication of 22 scientific articles domestically and internationally. Under his leadership, mechanized maize, mung-bean, and sunflower production have been expanded as coastal resilient technologies in Bangladesh's coastal areas, improving agricultural productivity and enhancing farming community resilience to climate change.



Dr Taslima Zahan
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Dr Taslima Zahan has been working for Bangladesh Agricultural Research Institute's On-farm Research Division as a Scientific Officer since 2011. She is a cropping system agronomist with over 13 years' experience in crop-soil management, weed management, and impact analysis of climate variables on cropping systems. Dr. Zahan's work with the ACIAR funded project on cropping intensification in Bangladesh's coastal saline regions includes identifying and upscaling suitable crops, varieties, or cropping patterns and their management, and promoting salinity-resilient technologies to improve crop productivity. She is also using present and future scenarios to figure out climatic risks for agriculture in those areas.



Dr. Mohammad Khalequzzaman
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Dr. Mohammad Khalequzzaman is currently Director (Research) in Bangladesh Rice Research Institute. He has over 30 years' experience developing modern rice varieties and germplasm conservation. He has a PhD from University of Southampton, UK. Since 1994, he actively engaged with rice research especially its breeding, germplasm management, molecular biology and seed technology. He is part of the "Rice Seed Network" with over a thousand other GOs, NGOs and private seed entrepreneurs, liaising with global donors and SAARC countries for germplasm exchange. Dr Khalequzzaman has directed many national and international projects, supervised many postgraduate students, and has over 100 publications.



A.B.M. Mostafizur
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A.B.M. Mostafizur is a Senior Scientific Officer of Bangladesh Rice Research Institute. He has completed his BSc.Ag (hons) in Agriculture and MS in Horticulture from Bangladesh Agricultural University in the year 2011 and 2013, respectively. His major research area is Rice Farming

System and he has been working in this discipline since 2015. He has actively participated in program planning, execution and report writing of cropping system research under favorable and unfavorable ecosystems, specifically for the improvement of cropping systems in the salt-affected coastal regions of Bangladesh. A.B.M. Mostafizur also gathers knowledge on integrated system productivity.



Dr Priya Lal Chandra Paul
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Dr Priya Lal Chandra Paul is a Senior Agricultural Engineer of the Department of Irrigation and Water Management at Bangladesh Rice Research Institute. He has over 15 years' experience in crop-soil-water management for rice-based cropping system intensification. His research interests include soil salinity mitigation techniques, conjunctive use of fresh and saline water, drainage effectiveness for crop establishment in saline-wet soil, mulch application for reducing salinity, heavy texture soil tillage techniques, crop response to soil solute potential, and development of water saving techniques. His current research with ACIAR is delivering solutions to overcome crop establishment constraints in Bangladesh's coastal saline area.



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Mst. Shetara Yesmin works as a Senior Scientist in the Irrigation and Water Management division of Bangladesh Rice Research Institute. She has an Agricultural Engineering BSc and Farm Power and Machinery MSc from Bangladesh Agricultural University, and completed a post-graduate course in RS and GIS from Indian Institute of Remote Sensing. She has experience in rice-based cropping system intensification through crop-soil-water management in coastal saline areas. Her research interests include GIS, RS and Modelling for water resources and crop production assessment, and she is an expert user of QGIS, SNAP, ENVI Classic, GEE, Cropwat, DSSAT, Python and R Statistical software.



Dr Koushik Brahmachari
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Dr. Koushik Brahmachari serves as a Professor in the Department of Agronomy, Bidhan Chandra Krishi (Agriculture) Viswavidyalaya (BCKV), West Bengal, India. With a prolific academic background, Dr. Brahmachari has contributed significantly to the field, boasting a publication record of over 120 scientific articles in esteemed national and international journals, and involvement in sixteen national and international research projects. These initiatives span development, testing and widespread implementation of novel agricultural technologies and practices, including those to improve agriculture in saline coastal environments. Dr. Brahmachari has played a pivotal role in advancing agricultural sustainability in the Sundarbans region of West Bengal, India.



Dr. Dhiman Burman
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Dr. D. Burman is the Head and Principal Scientist (Soil Science) at ICAR-Central Soil Salinity Research Institute, Regional Research Station, West Bengal, India. He received his Ph.D. in Agricultural Physics from ICAR-Indian Agricultural Research Institute. Since 1995 he has been

engaged in research at ICAR on sustainable management of problem soils in semiarid and coastal regions, resulting in 21 years' research experience on soil and water management for agricultural development in coastal salt-affected regions. He has developed many agricultural technologies especially for small and marginal farmers of the salt-affected coastal region.



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Dr. Kshirendra Kumar Mahanta presently working as Principal Scientist (Land & Water Management Engineering) at ICAR-Central Soil Salinity Research Institute, RRS, Canning Town, West Bengal. He graduated from College of Agricultural Engineering & Technology, OUAT, Bhubaneswar and did his master in the same institute in the discipline of Soil and Water Conservation Engineering. He did Ph.D. from Department of Water Resources Development & Management, IIT, Roorkee. Since 2001, He is working as Scientist at ICAR-CSSRI, RRS, Canning Town conducting research in coastal salinity. His research areas are groundwater monitoring, water harvesting, efficient use of water through advanced irrigation techniques.



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Dr. S.K. Sarangi worked as Principal Scientist (2014-2023) at ICAR-Central Soil Salinity Research Institute (CSSRI), Regional Research Station (RRS), West Bengal, India. Currently he heads the Division of Agricultural Technologies for Women at ICAR-Central Institute for Women in Agriculture, Odisha, India. His contributions to salinity research include improved package of practices for nursery raising, integrated nutrient management, crop establishment for rice cultivation in coastal saline soils, modified system of rice intensification (SRI) for dry season rice in coastal salt-affected soils, and identifying salt tolerant rice germplasm like IC-594013 (Kumrogoor), IC-596840 (Kalonuria), IC-594020 (Talmugur) and IC-594027 (Nonabokra).



Dr. M. Akkas Ali
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Dr. Akkas Ali is a farming systems agronomist and participatory researcher, and was raised in a farming family of Bangladesh. He began his career as a Scientific Officer in Bangladesh Agricultural Research Institute (BARI), did his PhD at the University of the Philippines Los Baños, worked as research scholar at IRRI HQ, Philippines from 2002 to 2005 and a Senior Associate Scientist at IRRI Bangladesh in 2010-2015. Thereafter, he returned to work at BARI as Chief Scientific Officer and Head of the On-Farm Research Division. Presently, he is working as Director (Crops & Natural Resources) at Krishi Gobeshona Foundation, Dhaka.



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Dr. Nathu Ram Sarker has an M.Sc. in Animal Science from Bangladesh Agricultural University and a Ph.D. from Haryana Agricultural University, India. Dr. Sarker started his career as a Scientific Officer and retired as Director General from Bangladesh Livestock Research Institute in 2021. While Director General, he liaised with national & international organizations especially BARC, KGF, FAO, World Bank, ADB, DANIDA, CDC, OXFARM and supervised 10 Ph.D., 9 M.S. and 3 post-doctoral students. Dr Sarker has over 200 national and international publications to his credit. He currently works as Executive Director of the Krishi Gobeshona Foundation, BARC, Farmgate, Dhaka.



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Sanchayeeta Misra, Assistant Professor at Ramakrishna Mission Vivekananda Educational and Research Institute, India, specializes in agriculture and rural development, with a Ph.D. and M.Sc. in Agricultural Extension. Her expertise includes Social Network Analysis, Digitalization of Agriculture, Sustainable Rural Livelihoods, Gender Analysis, and Climate Change Adaptation. Engaged in five research projects funded by ICSSR, IRRI, CSIRO, and ICAR, she leads two. Her research focuses on women farmers' empowerment in climate-stressed systems, particularly in the Indian Sundarbans, using the Women Empowerment in Agriculture index. She aims to understand the impact of cropping intensification on women farmers, contributing insights to sustainable agricultural practices.



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Mahanambrota Das is an experienced professional in research and development, holding a Master of Science in Geography & Environment and PhD from the University of Dhaka. His focus lies on sustainability of polders in the South-west Ganges Tidal Floodplain Area of Bangladesh. M. Das boasts a diverse skill set, ranging from environmental and social impact assessment to community livelihood development and ethical engagement. His expertise extends to analysing adaptive agricultural and water-based solutions for climate change resilience, particularly addressing salinity impacts in the coastal ecosystem of Bangladesh, where he actively involves vulnerable farming communities. For more information, please visit <https://www.researchgate.net/profile/Mahanambrota-Das/research>.

Members of ACIAR's Indus project (ASSIB)

Adapting to Salinity in the Southern Indus Basin



Dr Michael Mitchell
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Dr Michael Mitchell is a Research Fellow with Charles Sturt University's Gulbali Institute and project leader for the Adapting to Salinity in Southern Indus Basin (ASSIB) project. His research expertise relates to social dimensions of natural resource management. He has designed and delivered research to support engagement of people managing and living in salinity affected areas through co-inquiry, social learning and transdisciplinarity, and the application of systems thinking to enhance their adaptive capacity, resilience, and sustainability. This means changing behaviours of resource managers not just users, and the governance arrangements that determine the behaviours of both.



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Dr Catherine Allan is Professor of Environmental Sociology at Charles Sturt University, Australia. Catherine has a strong connection with rural landscapes, and sees people as part of, not separate from, those landscapes. Her research interests include regional scale adaptive management, and the related topics of participatory inquiry and social learning. Catherine's expertise in qualitative research approaches, including collaborative research which empowers communities, has contributed to multi and transdisciplinary projects and programs. For example, Catherine has been involved with groundwater and salinity projects in Pakistan and Italy, and is Leader of the social/economic Program of Australia's Cooperative Research Centre for High Performance Soils.



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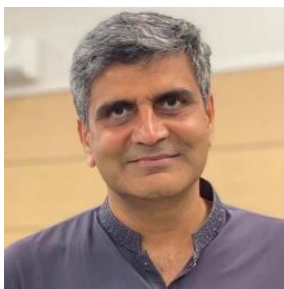
Mobushir Riaz Khan holds a doctorate in Spatial Sciences for Natural Resources from Twente University, Netherlands and has extensive experience as a geospatial expert implementing projects and services across Australia, China, Netherlands, Pakistan and Spain. Currently, he is engaged with Charles Sturt University's School of Agriculture, Environment and Veterinary Sciences and Gulbali Institute. Dr. Khan's work focuses on provision of models, tools and techniques to policy makers and researchers assess food security, monitor crop production systems, and manage water resources using remote sensing, GIS, and mobile development. He has published more than 35 peer-reviewed research papers and book chapters.



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Dr Jehangir F Punthakey is a groundwater specialist with Ecoséal Developments Pty Ltd and an Adjunct Professor at Charles Sturt University. He has provided research/consulting services to ACIAR, ADB, ICBA and World Bank for water resource management projects in Australia, Middle East, South Asia, and Southeast Asia. His research interests span modelling seawater intrusion in coastal aquifers, surface and groundwater management, and water security. His work has led to a patent on a novel Groundwater Management System for managing stressed aquifers. His work in Pakistan aims to improve management of Pakistan's vital groundwater resources for improved food security and livelihoods.



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Dr. Mobin-ud-Din Ahmad is an accomplished Water Resources Specialist and Principal Research Scientist at Australia's National Science Agency CSIRO, based in Canberra. He leads CSIRO's Water and Irrigation Systems Team, which delivers innovative, appropriate, and relevant scientific solutions to support policy and address complex water management issues in Australia and international river basins. With over 28 years of experience in research and management, Dr. Ahmad has worked in major food-producing river basins across the world. He has published close to 200 scientific papers, showcasing his expertise in agro-hydrological models, remote sensing, water balance analysis, and irrigation performance and productivity analysis.



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Sandra has a background in primary health care in developing countries as a nurse-midwife, health educator, and community engagement. She has spent 15 years working on ACIAR projects in Pakistan, initially on the ASLP2 project, then Developing approaches to enhance farmer water management skills in Balochistan, Punjab, and Sindh in Pakistan, and currently, Adapting to Salinity in the Indus Basin (ASSIB) project. These projects engaged whole farming communities and other stakeholders in co-inquiry processes to increase livelihoods, enhance production and adapt to living in saline affected environments, and better manage water and irrigation practices on small and medium sized holdings.



Dr Asad Qureshi
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Dr Asad Qureshi is a Senior Water Scientist at the International Center for Biosaline Agriculture (ICBA) in Dubai. He has long been associated with action research to improve water management for increased crop production. His work involves evaluating agronomic and engineering solutions to water management and mitigating incipient waterlogging and salinity problems. He has been involved in capacity building and training activities of national partners, and has managed multi-donor-funded projects in the Middle East, South Asia, and Central Asia for over 30 years, focusing on irrigation strategies for water-short areas, salinity, groundwater, and wastewater management. He has 90 scientific publications.



Dr Bakhshal Khan Lashari
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Dr Bakhshal Lashari is an expert in the field of irrigation management, water policy, networking and capacity of communities for sustainable livelihoods, with a strong emphasis on practical applications of water-related research, where he actively contributes to national and international forums, academic institutes, research organizations, and policy centers dedicated to the water sector.

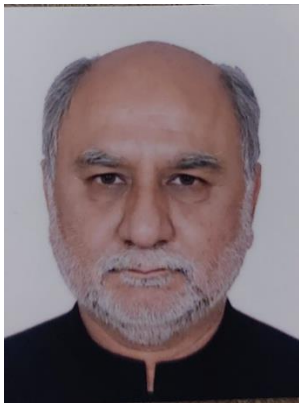
Currently, he is the Emeritus Professor at the US-Pak Center for Advanced Studies in Water), Mehran University of Engineering & Technology Jamshoro. He has more than 40 years of experience as an educationist and researcher, with a proven track record in policy influence and extensive practical knowledge.



Nadia Jabeen
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Nadia Jabeen is a distinguished professional with over a decade of experience in research project management and event coordination for both national and international entities. Holding advanced degrees in Socio-Cultural Anthropology and Sociology, she has demonstrated proficiency in workshop organization, research, and presentation across various domains. Nadia is also recognized for her contributions to training programs on diverse subjects including Data Analysis and Child Rights. Her expertise in social sciences, combined with her commitment to community service, underscores her exceptional ability to lead, communicate, and work independently, making her a valuable asset in any professional setting.



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Dr. Kamran Ansari is presently the Director of MUET's US-Pakistan Center for Advanced Studies in Water. With more than 30 years' professional experience, he possesses commendable academic and professional distinctions; and administrative and managerial skills. He is a well-qualified water resources engineer, and his professional purview encompasses a broad spectrum of specialized fields, including hydrological assessment and design, water resources management, hydraulic modeling, and irrigation engineering. He has authored many research reports and has over 50 publications in well-reputed national and international peer reviewed journals. He has also made valuable contributions as a member of numerous water resources technical committees.



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Dr Abdul Latif Qureshi is Professor of Hydraulics, Irrigation and Drainage Engineering at USPCAS-W, Mehran University of Engineering & Technology Jamshoro, Sindh, Pakistan. He has more than 35 years' experience of teaching and research having more than 90 research papers. He has recently worked on groundwater monitoring, modelling, and management in various projects in Sindh and Balochistan. He has worked with FAO, ICARDA, and the World Bank. He has a strong emphasis on practical applications of water-related research working with farmers' communities contributing to enhance the capacity building and livelihood of farmers' families especially under USAID, ICARDA and ACIAR projects.



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Dr Arjumand Zaidi is a geospatial expert who specializes in geospatial modeling, vulnerability assessment, and resource mapping. She is a Senior Research Fellow at USPCAS-W, where she shares her vast knowledge in environmental monitoring, flood modeling, and climate change using advanced geospatial techniques. With over 25 years of experience, Dr. Zaidi has a strong background in both research and project management. She focuses on addressing important issues related to environmental changes and their impacts on land and water while promoting sustainable livelihoods.



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Dr Syeda Sara Hassan is a water quality expert in the field of environmental engineering, analytical chemistry, and nanotechnology. She is currently working as Assistant Professor at USPCASW, MUET Jamshoro, and shares her expertise in various research domains including the fabrication of nanomaterials, catalysis, sensor development, and the assessment of physical, chemical and

biological parameters for water quality testing and treatment. As a laboratory In-charge at USPCASW, Dr. Hassan has undergone extensive training at the University of Utah, USA in laboratory management, equipment handling, and characterization techniques thus enhancing her skills and knowledge in the field.



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Dr Asmat Ullah is a faculty member at the US-Pakistan Center for Advanced Studies in Water, Mehran University of Engineering and Technology in Jamshoro, Pakistan. He is an environmental and resources economist with a PhD in Natural Resources Management from the Asian Institute of Technology, Thailand. He also worked as postdoctoral researcher at the King Mongkut's University of Technology, Thonburi, Bangkok, Thailand for two years. He has more than 12 years' research experience and participated in several research-for-development projects. His research expertise includes water governance, circular economy, life-cycle assessment, water-energy-nexus, and climate smart agriculture.



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Shahryar Jamali, a proficient Research Assistant at ASSIB project, has a Master's degree in Integrated Water Resources Management and a Bachelor degree in Environmental Engineering. He specializes in groundwater and flood modelling, and uses remote sensing techniques for more effective water management. His master's research delved into inland water monitoring using remote sensing. With a year of hands-on experience in groundwater modelling in the Indus Delta, Shahryar is currently involved in developing strategies to address salinity challenges. His expertise centers on formulating effective strategies to address water-related challenges and advance sustainable development worldwide.



Dr Fateh Muhammad Marri
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Prof Dr Fateh Muhammad Marri is Vice Chancellor of Sindh Agriculture University, and a renowned expert in agriculture, economics, and education. He was previously Acting Executive Director of Pakistan's Higher Education Commission, Sindh Government's Chief Economist, and led the successful Sindh Water Sector Improvement Project. With over 25 years' experience, Dr. Marri has played a crucial role in rejuvenating agricultural and irrigation initiatives. For salinity-related research, Dr Marri gives priority to site-specific screening and re-vegetation of barren, degraded, and salt-affected lands in Sindh, emphasizing use of native tree species and cereal crops to turn these lands into profitable use.



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Dr Irfan Ahmad Baig is professor of Agricultural Economics at MNS University of Agriculture, Multan. He is currently serving as Dean, Faculty of Social Sciences and Director, Center for Agricultural Sustainability in South Punjab (CAS-SP). He is also UNESCO Co-Chair on Low Carbon and Sustainable Agriculture in Biosphere Reserves. Dr. Baig has a diversified experience of 25 years of working with multiple international projects and programs in the areas of irrigation management, climate change adaptation, institutional analysis, community development and policy analysis. He co-authored multiple background analysis papers used to formulate Punjab Agriculture Policy 2018.



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Dr Tanveer Ul Haq is a saline agriculture expert at MNS University of Agriculture, Multan. He received his PhD from the University of Agriculture, Faisalabad and Centre for Arid Zone Studies, Bangor University, Wales, UK, with a focus on plant stress physiology and molecular biology of rice under salt stress. He did extensive work on soil mulching and planting geometry to promote crop production on salinity-affected marginal lands. He received an Endeavour Research Fellowship Award in 2016, when he was a postdoc at the Universities of Western Australia and Murdoch in Perth, Australia. He has authored over 50 journal articles.



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Dr Nasir Nadeem is Professor and Chairman of the Department of Agricultural and Resource Economics at Muhammad Nawaz Shareef University of Agriculture Multan, Pakistan. His research expertise relates to agriculture productivity and agriculture policy analysis. He is engaged in the ACIAR project “Adapting to Salinity in Southern Indus Basin” (ASSIB) focusing on critical institutional analysis and development (CIAD) research. He has more than 20 years’ experience relating to agriculture productivity analysis and policy issues.



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Dr Nighat is an Assistant Professor at Muhammad Nawaz Shareef University of Agriculture Multan. Her research focuses on post-harvest food processing and value addition, employing minimal processing techniques like thermal drying. She strives to bridge agricultural production and

consumer consumption through sustainable methods, minimizing waste and maximizing nutrition. With over 10 research articles in esteemed journals, her contributions are recognized. Currently, she contributes to the ACIAR-funded "Adapting to Salinity in South Indus Basin" project as a Food Value Addition expert, addressing salinity challenges in food production. She inspires future food scientists with her emphasis on innovation, sustainability, and quality.



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Dr Nazar Faried, an assistant professor at MNS University of Agriculture in Multan, Pakistan, has been serving in the Horticulture Department since 2016. His research interests primarily revolve around innovative agricultural practices aimed at enhancing productivity and resilience in challenging environments. These interests include soilless greenhouse farming to enable year-round production of high-value vegetables, abiotic stress tolerance induction through grafting, and on-farm interventions such as raised bed cultivation and mulching to promote drainage and soil aeration, conserve moisture, suppress weeds, and moderate soil temperature, thereby enhancing resource efficiency and sustaining productivity. He has contributed to academia through 25 scientific publications.



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Muhammad Bilal Ahsan is an agribusiness lecturer at MNS University of Agriculture, Multan. His research background in agri-marketing and sustainable value chain has prompted his active involvement in many impactful projects, including the "Adapting to Salinity in the Southern Indus Basin" project. Previously, he was a research associate in the LUMS "Development of Cold Chain Infrastructure in Pakistan" project, and during his MS degree, he worked on a project to optimise mango value chains funded by the International Centre for Development and Decent Work, Germany. He recently attended a course at the University of Queensland as an Australia Awards scholar.



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Abdul Raheem is a young researcher in water resources engineering and management. He has advanced skills in groundwater modelling, monitoring and spatiotemporal analysis of different water resources related features. He has been associated with the “Adapting to Salinity in the Southern Indus Basin (ASSIB)” project as a groundwater modeller for the past two years taking a lead role in developing groundwater models for southern Punjab and the coastal belt of Sindh. He is also very good in groundwater monitoring data analysis.



Chaudahry Mahmood Akhtar (Cheema)
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Mahmood Akhtar Cheema has degrees in Agricultural Engineering and Agriculture Extension and 34 years’ programme development and management experience related to natural resource management, conservation, climate change, forestry, biodiversity, sustainable agriculture, and water. He has been associated with IUCN Pakistan for over 26 years, serving as Country Representative since 2012. He serves the government sector and international organizations by fostering partnerships among government, NGOs, IUCN member organizations and the private sector. He supports nature conservation in Pakistan through his numerous professional affiliations, including as a member of directors’ board, councils, and steering committees.



Naveed Ali Soomro
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Naveed Ali Soomro, a seasoned natural resource management professional with 18 years' expertise, manages the Sindh Programme at IUCN Pakistan. Specializing in planning, policy development,

governance, and sustainable management of natural resources, he excels in Nature-based Solutions, integrated coastal resource management, ecosystem restoration, and community-based conservation. His work extends beyond the coastal expanse of Indus Delta to the formidable terrains of remote Thar desert, overseeing diverse projects in southern Pakistan. He demonstrates exceptional skills in community engagement, coordination, and stakeholder collaboration. His extensive work has produced numerous publications on ecology and environmental education for diverse audiences.



Danish Rashdi
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Mr Rashdi currently heads IUCN's Karachi Programme Office, overseeing programmes and projects in partnerships with government and donors in Sindh and Balochistan provinces. He has over 20 years' conservation and development sector experience in programme development, coordination, project management, research and strategy. Mr Radish also heads IUCN's Private Sector Engagement Programme, and has initiated and implemented projects with different industries focusing on ecosystem restoration and community livelihoods. He provides technical advice to government and industries on projects and programmes, and has demonstrated capability to create partnerships with government, donors, and project stakeholders on multiple initiatives.



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Dr Aslam Jarwar is an aquaculture expert with two decades of experience covering program development, project management, extension, hatchery management, digital data collection analysis and reporting, and policy and regulatory matters. He has worked in both the government and non-government sectors and with national and international organizations, including WWF and FAO. His interest in aquaculture on saline groundwater took him to Auburn University USA where he explored the ideas to make it a reality in Pakistan. Currently, he is working as a consultant with IUCN and the World Bank on aquaculture projects with a main focus on saline aquaculture.



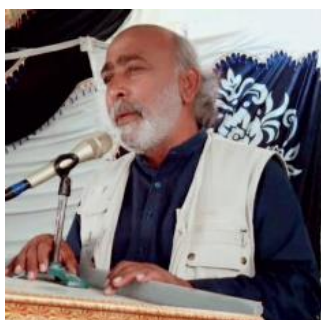
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As a young professional, Ifrah Naseem Malik has spent the past year as a Field Coordinator/Community Mobilizer with IUCN Pakistan on the ACIAR-funded project, "Adapting to Salinity in Southern Indus Basin." Her primary focus has been active engagement with Indus Delta coastal communities. Using participatory research, her work centres on interventions in coastal aquaculture and agriculture, equipping her with a nuanced understanding of the complexities inherent in coastal regions and the opportunity to effectively address challenges related to salinity. As a graduate in marine science, she is committed to implementing sustainable practices and driving positive change in the coastal region.



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Yousif Channa is an agricultural professional with a Master(hons) degree. He has more than 29 years' experience in agricultural extension as a Farmer Field School specialist through various roles leading up to his current position of Principal at Sindh Department of Agriculture Extension's Agriculture Training Institute, Sakrand. He also previously worked with the Pakistan Agriculture Research Council as IPM Deputy Provincial Coordinator for Sindh. His work relies on a participatory education approach for capacity building of professionals, farmers, and NGO staff. He has helped coordinate food security and natural resource management research projects for ACIAR, FAO and the Pakistan Government.



Muhsin Ali Channa
Community Engagement Officer
Society of Facilitators and Trainers (SOFT)

Email: mohsinchanna110@yahoo.com

Mr. Muhsin Ali Channa has a Masters in Entomology from Sindh Agriculture University. He has 13 years' experience with different organizations including FAO, CABI and SOFT Pakistan, specialising in integrated pest management, farmer field schools, farmer marketing

collectivities and integration of agriculture with conservation. He also has 3 years' experience working with pesticide and seed companies. For the last 2 years has been working with the ASSIB salinity project gaining experience in the capacity building of farming families for sustainable, profitable and environmentally sound production for livelihood improvement.



Babar Zaman
Community Engagement Officer
Society of Facilitators and Trainers (SOFT)

Email: zamanbabar27@gmail.com

Babar Zaman received a Master's degree in Agricultural Entomology from Sindh Agriculture University in 2011, and has over 12 years' experience in national and international NGOs, specializing in linking fields of agriculture and society, as well as in integrated pest management, and in designing and conducting training programs and workshops with farmers to enhance their agricultural knowledge and skills. He has also analyzed data for research published in national and international journals. He is currently working as a community engagement officer with the Society of Facilitators and Trainers (SOFT) collaborating with four communities and many researchers across the ASSIB project.



Benazir Kumbhar
Community Engagement Officer (Sindh)
Society of Facilitators and Trainers (SOFT)

Email: benazirkumbhar@yahoo.com

Ms Benazir Kumbhar is a PhD scholar in the Department of Agronomy at Sindh Agriculture University in Tandojam. She has 12 years' experience working as an agriculture officer for national and international organisations on several projects concerned with agriculture, nutrition, research, and education. In addition to technical agriculture, Ms Kumbhar has experience in community mobilisation, coordination and communication, data management, capacity building, training, conducting community and line department meetings, using the newest technological equipment, collaborating with other organisations, and writing reports. For the past 2 years she has been working with the ASSIB salinity project as a community engagement officer.



Tahira Baloch
Community Engagement Officer (Sindh)
Society of Facilitators and Trainers (SOFT)

Email: balochtahira88@gmail.com

Ms Tahira Baloch has a strong background in the development sector, with a focus on community mobilization, and experience across various projects, including education, advocacy, climate change, child protection, and salinity. With a master's degree in sociology, Ms Baloch understands social structures and dynamics, and how they intersect with issues such as education, climate change, and child protection. This knowledge has proved valuable in her community mobilization work, allowing her to analyze and address root causes of social issues and engage with communities effectively. She has a wealth of practical knowledge from her 12 years' experience working with different organizations.



Iqra Mohiuddin
Community Engagement Officer (Punjab)
Society of Facilitators and Trainers (SOFT)

Email: iqramohiuddinch@gmail.com

Iqra Mohiuddin has a foundation in social sciences with a postgraduate degree in agricultural economics. She has actively contributed for over five years to national and international organizations in diverse professional capacities. Her roles have encompassed conducting farmers/facilitators training, undertaking gender-based research, and facilitating gender involvement in various project activities. She has expertise in collaborative problem solving, sustainable agriculture land management, value chain management, food security, natural disaster management, primary data collection, entry and analysis, report writing, and team leadership. Currently, she serves as a community engagement officer in the ACIAR-funded "Adapting to Salinity in the Southern Indus Basin" project.



Muhammad Faisal Riaz
Community Engagement Officer (Punjab)
Society of Facilitators and Trainers (SOFT)

Email: faisalriaz026@gmail.com

Muhammad Faisal Riaz, working as Community Engagement Officer at SOFT in Multan, Pakistan, has leveraged his entomology background to contribute to the ACIAR-funded Project "Adapting to Salinity in the Southern Indus Basin" since March 2021. Formerly a Program Officer and District Master Facilitator, Faisal excels in farmer facilitation and resource management. His skills span data collection & analysis, and comprehensive reporting. Proficient in social work and facilitation, he actively engages with diverse stakeholders, showcasing multicultural teamwork and effective communication. Faisal is dedicated to training and capacity building, evident in his contributions to "bright spot" farming communities, ultimately enhancing their well-being.

Evaluation

A post event evaluation was conducted by slido by 50 of the attendees. All attendees completing the evaluation approved the use of feedback for reporting purposes.

End of Symposium Evaluation (1/19)

050

This evaluation is anonymous & voluntary. We will use the information for reporting & may use this information for future publications. In no way will your individual responses be identified. If you don't want to participate, simply exit this page.

Agree

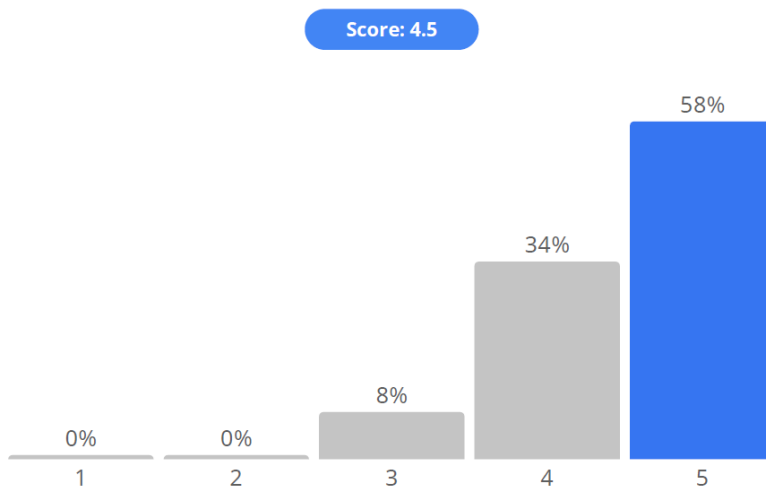


The following are the results of the post event survey.

End of Symposium Evaluation (2/19)

050

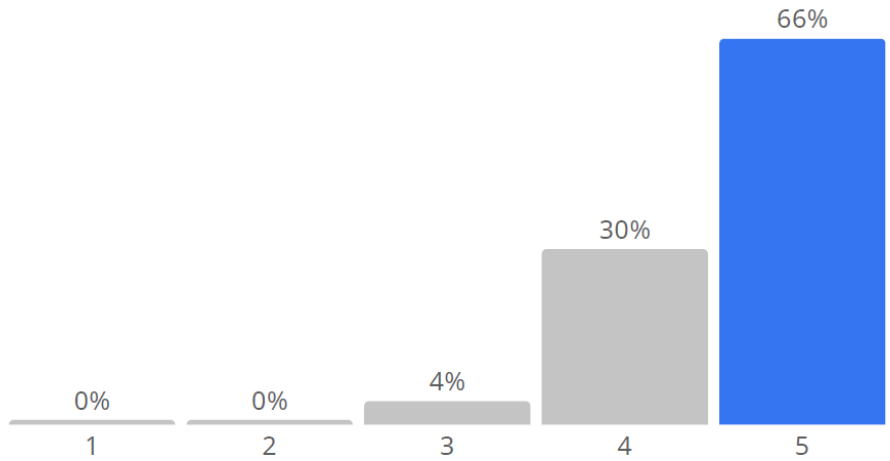
How satisfied were you with the Symposium overall?



slido

Overall, how well-organized was the event?

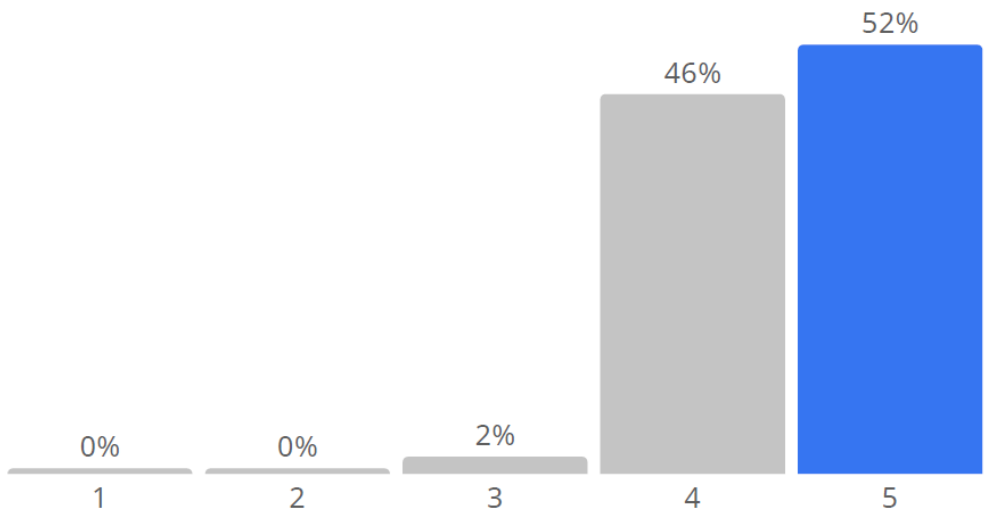
Score: 4.6



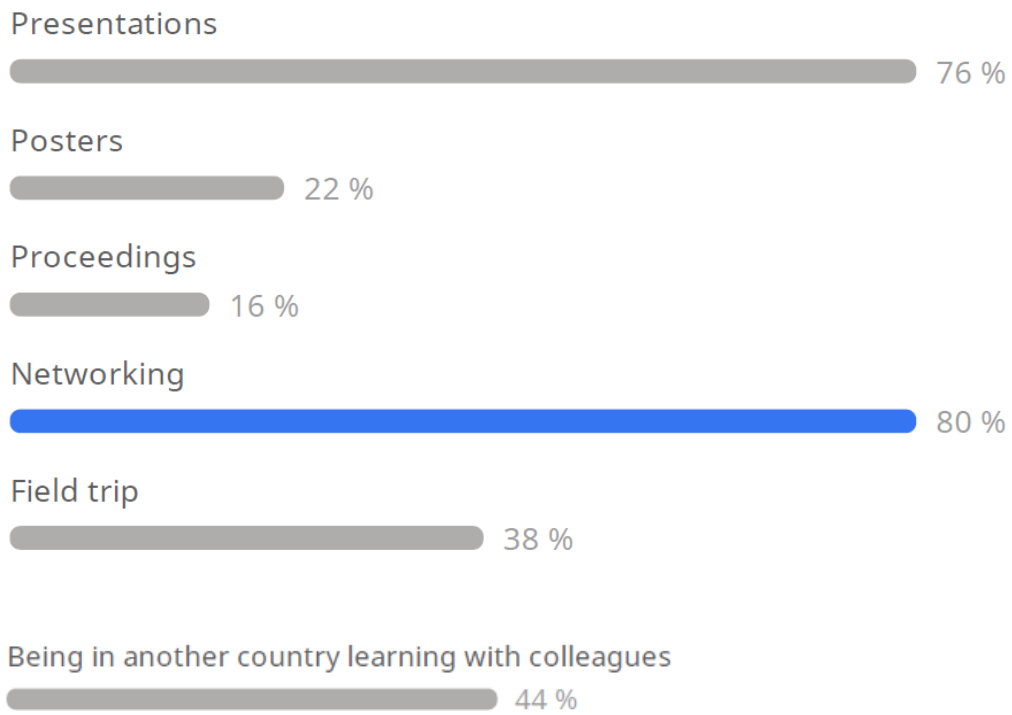
End of Symposium Evaluation (4/19)

The Symposium goal was to bring together 3 ACIAR projects to share information on management & considerations to better cope with salinity impact on agriculture, profitability & rural livelihoods. How well do you think the Symposium achieved its goal?

Score: 4.5

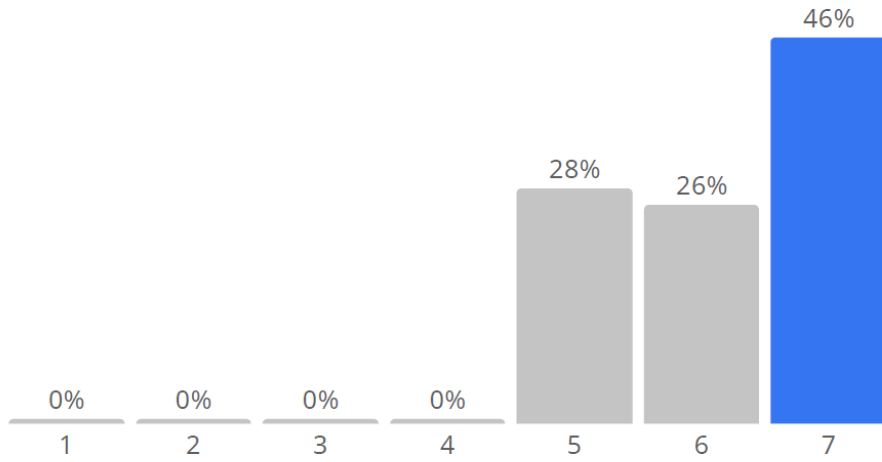


What was the most valuable aspects of the Symposium for you? (Select top 3)
(1/2)



How well did the conference topics align with your professional interests?

Score: 6.2



**Which session(s) did you find most informative?
(Select top 3)**

(1/2)

Keynote presentations



Project Overviews



Theme 1: Changes in the Landscape and Water Dynamics



Theme 2: Options for Adapting to Salinity



Theme 3: Gender Dimensions of Impact



Theme 4: Building Knowledge and Creating Impact for Affected Communities



Theme 5: Building Successful Socio-Economic Impacts

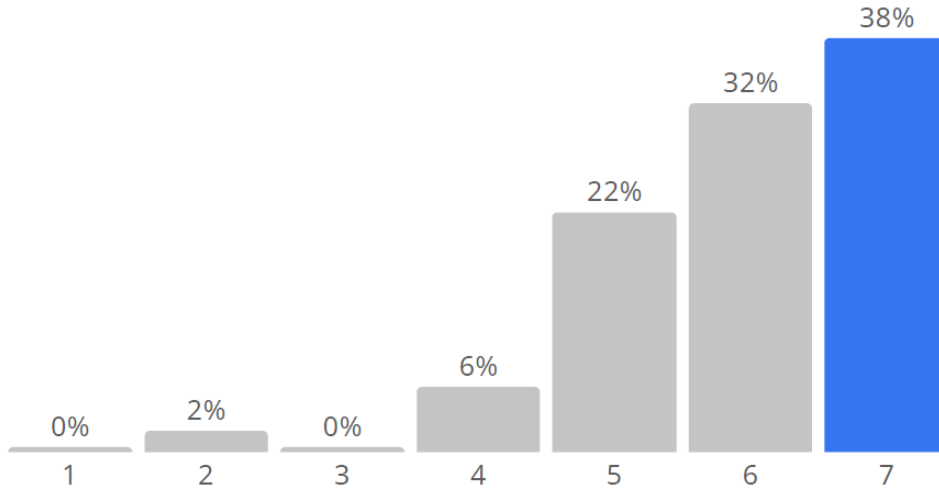


Closing Discussion on Shared Learnings and Ways Forward



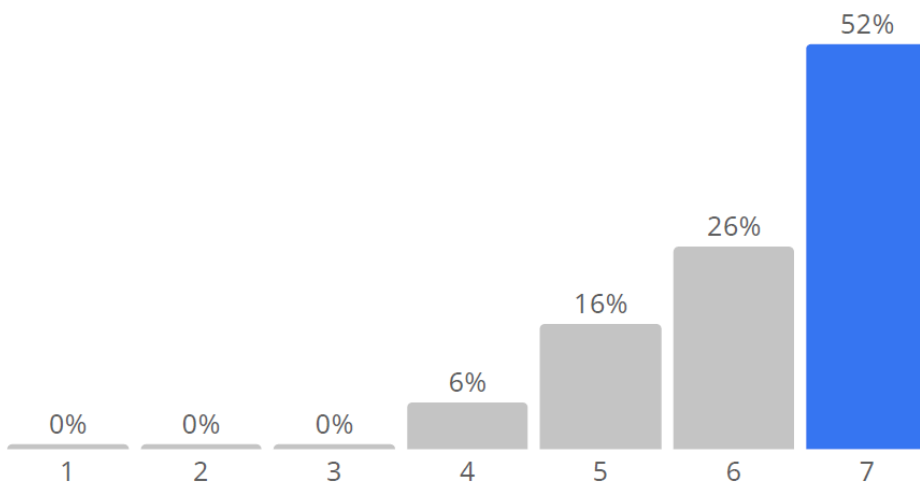
Did you expand your network by participating in the Symposium?

Score: 6.0



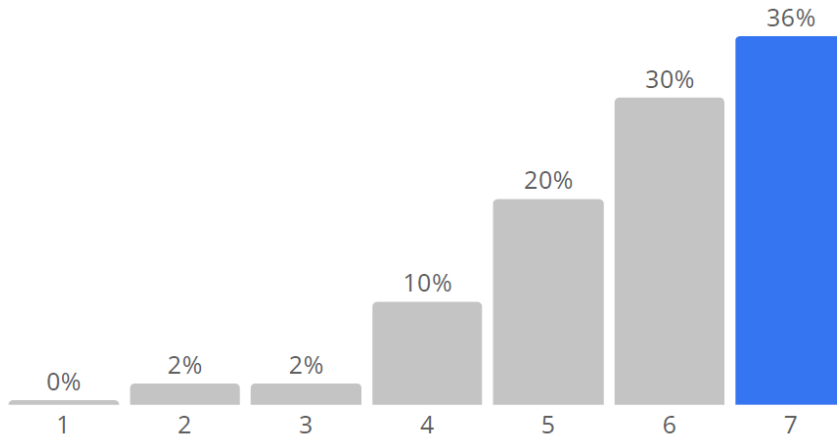
How likely are you to be in contact with someone you met through the Symposium?

Score: 6.2



How well did the Symposium challenge or broaden your understanding of issues facing farmers in saline environments?

Score: 5.8



How will you share your learnings from the Symposium? (Select all that apply)

(1/2)

Write a summary



Create a presentation



Share insights with colleagues



I will not share anything



Share on social media



Share the Symposium Book with colleagues



Other



End of Symposium Evaluation (17/19)

050

What one word would you use to describe ACIAR?



End of Symposium Evaluation (18/19)

050

What one word would you use to describe the highlight of this Symposium?



What one word would you use to describe the biggest challenge we need to overcome in our research to create a better future?

To think about down to up approach for participatory approach



What were the key takeaway messages for you from the Symposium?

(Individual responses separated by a line gap)

- Salinity is a challenging issues for the Deltas.
- Some alternatives may work in this delta, but do not work in the others.
- It takes time to bring the tested adaptive options in to the policy makers.

Success is possible by developing a holistic approach from seed to harvest and harvest to market as well as value chain improvement and value addition approaches

Climate and salinity adaptation

How effectively can work with the community, Learning by doing, Learning through sharing and discussing

The symposium underscored the significance of constructivism in addressing challenges in saline environments. It emphasized the need for interdisciplinary collaboration, innovative solutions such as salt-tolerant crop varieties and precision agriculture technologies, sustainable soil management practices, including Sustainable Intensification, and the integration of climate-smart agriculture principles. Moreover, the symposium highlighted the pivotal role of constructivist approaches in engaging stakeholders to ensure the relevance and effectiveness of research outcomes.

Symposium provide networking opportunities for researchers, professionals, and participant to collaborate.

Hiw to solve the climate change issues, Networking, Gender role, Experiential learning, Brain storming I have learned a lot during the whole visit. The key takeaway for me was the motivation from the success stories of all the projects

Adaptation with Salinity

The key takeaway messages from the Symposium were the importance of collaboration, innovation, and sustainability in addressing salinity challenges facing by the farmers in different Delta system.

Integrated approach should be taken in salinity stress condition to improve cropping systems.

We need to think like a constructivist.

Living with the salinity is unavoidable so better acclimate with the prevailing situation and find solutions which can help farmers get production from otherwise non- or low-productive landswith and waters

1. How crop and soil management practices increase productivity in the Mekong Delta
2. The options of salinity management in the globe
3. Better understanding of salinity mapping through GIS and modeling
4. Adaption strategies for upland crops in the saline environment
5. Stakeholder engagement for sustainable solution

Once again enormously impressed by the SERL process discussed by Dr Sandra and members of the ASSIB team

All is not lost. If we start working together, we can save the environment and live with the salinity being developed in our landscapes.

Cultures share commonalities, and by learning from one another, we can bolster our ability to address shared challenges.

People in the different systems (both ecological and political) are the most critical component. The role other projects are playing as regards salinity and how we could replicate the same, to whatever extent possible, in our country/region.

As our institute is in coastal area and Scientists are multidisciplinary, we can contribute if made partners in projects like climate change, gender issues , land & water management in salt affected areas.

Overall organization of the symposium was exceptional. The three deltas current situation made us aware of the challenges and opportunities. The partnership particularly working with consortium can help achieve the objectives in the long term.

very informative knowledgeable

Cross learning and understanding with different socioeconomic dynamics across the three mighty deltaic regions. experiential discussions on research learnings on options for adapting to salinity.

Salinity is affecting farmers

- Learning from others particularly subject experts
- Understanding the 3 great rivers deltas
- Networking
- Think globally about a local issue through connecting it with relatives countries

multi-approach for salinity issue

Together we Succeed

Collaboration and sharing to deal with salinity in the future.

There are considerable similarities re salinity challenges faced by different delta systems in environmental terms, but the community, social and economic challenges vary a lot, as do the crops and agricultural systems in question.

There are opportunities for collaboration among the projects and we can learn from each other which will have lot of benefits for the local community.

We need to work and adapt with salinity. And we have to find the best solution for this issue
Agricultural management needs significant scientific interventions to cope with climate change, need resilience and transformative approaches.

The need to establish a network. But how to make it happen? The vital importance to work with some communities to build adaptive capacity that can prepare them for potential transformative change.

Networking, Learning, Communication, Confidence

Be curious

Adaptation options are likely to have an impact over a short period before a tipping point is reached

I'll put all my time and efforts that I wasted earlier

The need for a holistic forward looking plan for transformation

actually we built the linkages with all the partners .

Deltas are different

Salinity issues vary across borders, and even though we all face climate change, sea level rise is hitting each delta at different rate. What's interesting is how locals respond differently to similar interventions. Through the symposium, we got to know interventions spark interest beyond targeted areas, prompting neighboring farmers to seek involvement in the project trials. They get the training but say to ACIAR farmers, "We need the technology and capital too." Most interventions show promise, but there's room for improvement.

To work with more focus and with more suitable long term sustainable agriculture

Understanding the farmers challenges in three deltas

Engagement of farmers in co enquiry research

Cross project learning take away

Mega deltas are each unique and diverse but opportunities exist for improving livelihood and resilience in all

Networking is important, Time management is important, Summarise things efficiently,

Great learning especially futures in terms salinity

Think globally, Act Locally

We are similar

How can research adapt to address the evolving needs and challenges of agriculture in saline environments?

The findings from the research need to be tested, adopted and scaled up.

The technologies for saline environments can be adapted by building the trust of the farmers through engagement, demonstration, and innovative extension strategies. The social media, and print media have a very powerful impact in current times

Co-inquiry

Working with the community and exchange of knowledge can help to address the evolving needs and challenges of agriculture in saline environments.

"To adapt research for agriculture in saline environments:

1. Encourage interdisciplinary collaboration.
2. Create salt-tolerant crop varieties.
3. Employ precision agriculture technologies.
4. Investigate sustainable soil management techniques.
5. Integrate climate-smart agriculture strategies.
6. Engage stakeholders for relevance and implementation."

Research can develop salt-tolerant crops, optimize irrigation, improve soil management, explore biological solutions, and integrate remote sensing and precision agriculture to address saline agriculture challenges.

Brain storming of formers

Research should be done with farmers with their complete participation and involvement. it is very important to involve the farming communities to be involved in the research programs. They know better than anybody else about their soil.

Know about alternative crops utilized in saline environment

Research can adapt to address the evolving needs and challenges of agriculture in saline environments by focusing on developing salt-tolerant crops, optimizing irrigation practices, and implementing sustainable soil management techniques through bridging the knowledge of the farmers community and researchers.

Integrated approach should be taken in salinity stress condition to improve cropping systems.

Research can be adopted to address the evolving needs and challenges of agriculture in saline environments through adoption of salinity-resilient technologies.

With the small experiments successes probably we need to expand demonstration to somewhat larger scale for appealing more and more farmers, and involving broader stakeholders with key stakeholders more role in furthering the message

Problem based more field trials can address the challenges of agriculture in saline environment

Increasingly we need to encourage information exchange between saline environments so that we can learn from each other. Dr Kate Nagacz raised the opportunity of our teams becoming better networked internationally.

There is need to invest in the research on introducing new varieties of species which are salt tolerant.

Adopting a mindset of 'Thriving or Living Well with Salinity' is essential for adapting our research strategies.

The key takeaway for me has been the importance of collaborative relationships in each system. As saline environments change, maintaining the research networks will be critical to developing new knowledge.

cater to coastal communities needs combining with traditional wisdom and learning.

Agriculture should be climate resilient in the coastal saline environment.

Replication and upscaling of pilot initiatives is of paramount importance. Academic institutions can play important role in furthering the research on salinity. Research and development need to be considered together to make adjustments to influence policy.

already research done through this ASSIB salinity project in Sindh using gypsum application, Multi vegetables cultivation through mulching, cultivated salt resistant varieties, Soil sampling for the confirmation of how much salts accumulated in soil and which type of soil.

Co-research led by the farmer can lead us to sustainable options for adapting to salinity

Multidisciplinary needed

Research method particularly adopted in this project through co-inquiry and co-designing engaged the local farming community in decision making. Hence, this strategy, definitely, help managing the salinity challenge

evaluate the out come of the done researches over time in order to support follow-up researches

Many ways, especially by working with farmers and down top approach is best

Understanding the real difficulties of farmers and bringing solutions as close to reality as possible.

Previous answer suggests that some research can be conducted across multiple deltas for mutual benefit, though some will be necessarily delta (or even smaller scale) specific. Regular sharing of ideas such as this symposium would help.

Working with with farmers and the community in the field and listening to their concerns.

Need policy and enhance capabilities

Collaboration at local, national and international scale.

Research needs to be done with farmers, led by them, on their properties and involving ag service providers and extension. It needs to be locale specific, and involve learning by doing to constantly changing circumstances.

"Application of mulching in saline environment

Hydrological Modelling.

In collaboration with stakeholders

"Need a combination of solutions including green barriers and investment in infrastructure to cope with sea level rise in the mega deltas

It helped a lot in understanding the things happening in a more broader way

Embed the social components from the planning stage of projects

when this project will continue to adopt and seeking the new agriculture practices in saline soil

Encourage multi and trans disciplinary research teams to support systemic inquiry from each other but share enough to enable a community of practice

"A. Youth being more susceptible to technology needs to have their capacity developed early on in regards to the latest instruments the science has to offer.

B. The project needs to be adapted to longer period of research to understand on ground changes in real time, plus it will assist in uplifting the farming communities lets say 5 years so through trial and learning with failures and successes will assist farmer to A- Co learn and B - Establish themselves and run themselves

This will also allow them to become independent rather than just working, packing up and going or looking for other similar interesting donors so that greater impact can be achieved. "

By the co inquiry process

Continuous interaction with community

Satisfactory

Stay engaged, recognise it's a long term commitment, network constructivist colleagues in projects

"Through need based research,

Go beyond local studies to regional levels so that policy makers can be benefited "

Add into knowledge

Can not comment

Communicate across projects and have more conversations

What else needs to be done to prepare agricultural communities in saline environments for changing climate?

"- Sharing information and experiences.

- Increasing dialogue and communication to bring the research outcomes in align with policy.

- Demonstration of the successful adaptive models."

Land care associations of the farmers can be established. Farmer trainers can be produced for scaling up the successful production techniques in saline environments

Livelihood transformation

"Building knowledge and awareness

Improved innovative methods

Policy support"

1. Develop salt-tolerant crop varieties and ensure equal access to these resources for both genders.
2. Improve water management infrastructure, considering the specific needs and constraints faced by female farmers.
3. Provide education on sustainable practices tailored to address the needs of women, and support women's networks for knowledge-sharing.
4. Implement supportive policies that recognize and involve women in decision-making processes at all levels of adaptation efforts.
5. Engage local communities, including women, in adaptation efforts and address gender-specific vulnerabilities to ensure equitable outcomes."

Promote resilient crops, sustainable water management, soil conservation, community education, and policy support to enhance adaptive capacity and resilience in saline agriculture.

Better environment

"To better prepare agricultural communities in saline environments for a changing climate, it's essential to employ a multifaceted approach that integrates various techniques beyond mulching, salt-tolerant plants and trees, and sowing on beds. While these methods are indeed valuable, additional strategies can further enhance resilience:

Soil Management Practices: Implementing soil amendments such as gypsum or organic matter can help improve soil structure and reduce the impacts of salinity. Techniques like soil leaching can also be employed to flush excess salts from the root zone.

Water Management: Adopting efficient irrigation systems such as drip irrigation or utilizing rainwater harvesting techniques can help minimize water usage and reduce the accumulation of salts in the soil.

Crop Diversification: Introducing a diverse range of crops, including salt-tolerant varieties, can mitigate risks associated with salinity. Rotating crops and intercropping can also help optimize land use and minimize soil degradation.

Selective Breeding and Genetic Engineering: Investing in research and development to breed or engineer crops with enhanced salt tolerance can significantly improve crop yields in saline environments.

Community Education and Capacity Building: Providing training and extension services to farmers on sustainable agricultural practices, salt management techniques, and climate-resilient farming methods can empower communities to adapt effectively to changing environmental conditions.

Ecosystem Restoration: Rehabilitating degraded ecosystems, such as wetlands and mangroves, can help buffer agricultural lands from saltwater intrusion and provide natural habitat for beneficial species.

Integrated Pest Management: Implementing holistic pest control strategies that reduce reliance on chemical pesticides can help maintain ecosystem balance and promote long-term agricultural sustainability."

Community engagement and strong monitoring Network

In addition to developing resilient crop varieties, agricultural communities in saline environments need to invest in water-efficient technologies, improve soil health through conservation practices, and enhance adaptive capacity through knowledge sharing and capacity-building initiatives.

Should be united, well aware about the changing climates and options they have.

Mass awareness on using salinity-resilient technologies should be developed among the farmers.

(1) Success stories and lessons learned presentations on relevant forums, (2) Effective use of social media and radio, (3) Sharing of the knowledge gained with policy makers, (4) Influencing for similar work by government institutions and other organisations,

More focus on the adoption and disseminate/upscaling of available technologies for salinity management

Many communities drive forward with their eyes on the rear view mirror. There is a hope that the present changes we are seeing in climate will revert to what they have been in the past. This is delusional. Communities need to move forward expecting more adverse conditions, an escalating deterioration. If we plan for this and build for this, we may prosper.

They need to be guided on the risks they face in the coming years so that they are well prepared in advance.

To further prepare agricultural communities in saline environments for the changing climate, we must focus on building trust, fostering teamwork, providing training, and eliminating communication gaps between the researchers and the communities.

We need to recognise the impact of upstream changes on downstream users, as river regulation continues to exacerbate the impacts of salinity downstream.

Create incentives for them to participate in ongoing research so that they inculcate new learnings and act

Information about the new technologies should be given to farmers. Trainings should be arranged regularly for soil, water & crop management for their skill development.

Capacity of the local communities need to be enhanced. Sustainable Development Fund at delta level to be established for effective implementation of the key initiatives. Early warning system needs to be developed.

Through capacity building of all the stakeholders regarding impact of climate change on agriculture sector which adaptation occurs at saline soil.

We need to let the communities behave a researchers, our role has to be facilitator. Effective communication and farmers' exposure to case studies need to be expanded

Climate prediction

I suggest to continue this project for at least three year to overall help farmers adopt and live with salinity by refining the activities at farm level followed by dissemination of the technologies to the near about communities

Providing new salt-resistant varieties and plants.

Water saving, managing the harsh cold and hit temperatures, proactive approaches to climate related threats

Provide timely policies and support.

Identify and support development of alternative forms of income generation (on-farm or off-farm)

We need to provide latest information to the farmers.

Training

Policy level changes.

As above build adaptive capacity that can build community resilience as well as potentially for transformation. This is best done working with farmers as a genuine co-inquiry

Hydrological modelling must be implemented in proper way through by using better ground data.

Be attainable

We need to be honest that their time on the land may be limited by externalities which are beyond our control

One word "train" and keep a touch with them

Raising awareness of potential scenarios to support their planning for change

now communities fully aware about the salinity changing agriculture practices

Build adaptive capacity of agencies who support farmers

I think based on the talks and our personal experience access to market should be significantly improved for people and specially role of middle man needs to be critically looked at.

To make marginalized group discussions to build more ideas for scarce resources

Develop liaison with stakeholders

Prepare communities by enhancing their adaptive capacity

Help them build trust in new options and listen to their needs

"More evidence based research

Use appropriate models at appropriate scales

Disseminate out outputs efficiently "

Youth and policy

Working with them more closely

School programs

How will you translate the knowledge gained from this conference into tangible improvements or initiatives within your work or field?

An adaptive practice needs the involvement of different stakeholders.

I will translate knowledge gained from the salinity symposium by planning my postgraduate students' research on farmer's field for salinity management

I will try to understand the nexus between climate change, salinity and livelihood.

"Engaging students for further research

Working on research paper/article "

I will apply the knowledge gained from the conference to drive concrete improvements and initiatives in my work or field, leveraging innovative ideas and collaborations to address existing challenges effectively.

Conferences provide valuable networking opportunities for forming partnerships and collaborations with other organizations, researchers, and practitioners. Following up on these connections can lead to joint projects, shared resources, and collective action on common goals identified at the conference.

I am from water quality and there is big role of water quality on soil salinity, i learned so many things about salinity which effect the water quality and their role on climate

I am working with farming communities as a community engagement worker. I will share my gained knowledge with my farming communities. I will work on Agriculture i.e Salt tolerant varieties, Sowing on beds, Mulching, Plantation of trees, and rotation of crops, Environmental Conservation, Community Development, Research and Development, Education, and Capacity Building with my farming communities and other stakeholders.

Implementation

Writing and publishing article on social media and national media

This symposium broadened my thinking on overall agricultural practices and exposed different new agricultural technologies of different countries.

The research on groundwater table mapping for the saline region is important to plan for crop selection. Community engagement with proper market linkage system development is crucial for saline agriculture system.

I am planning to give presentation to relevant local audience (and this is also wished by some of them). Though I do not have a big success story, but I understand sharing lesson learning is important for others to make a get tthrough

The knowledge gained from the conference will be shared among colleague and will apply to design field trial in the salt-affected Ganges delta

I will increasingly think of there being a broader constituency in my field. I will think more internationally and less locally about issues of salinity and climate change

We will plan similar activities which have been carried out in other deltas to see their local impact.

We plan to enhance our research by leveraging the transdisciplinary aspects covered in the event, providing us with a more comprehensive understanding of the problem and its potential solutions.

Connecting with new colleagues to try and transfer knowledge across the deltas

Can use the learnings in new project proposals and existing projects

Salinity management should be location specific as there is too much spatial & temporal variabilities. There is need of collaborative research in each field to achieve the project goals.

Many ways gained knowledge will be disseminated to relevant colleagues and institutions.

knowledge share with farmers regarding field experiences and research trials successful and failures how to improve the research trial through this knowledge.

The knowledge gained will support me to better design our initiatives/ projects at IUCN especially for Indus Delta.

Step by step

I will use this knowledge and networking in developing new projects to int funding agencies for resolving the local issues of climate change through co-learning.

will do follow-up research for this issue

Yes by applying holistically

Added to the current research I am doing and will do in the near future. Particularly, my future PhD studies.

New contacts with colleagues in other projects.

Try to implement some of the initiatives of the Indus and Mekong and evaluate their effectiveness.

Teaching and researching

Incorporate in the implementation of research projects.

I don't know yet. This is the big unfinished business of the symposium that we need to deal with

Applying better innovative ideas in Field

Share with others

Apply it to possible adaptation scenarios

I'll improve my understanding related to my area of experties

Hopefully develop ways of engaging all stakeholders in the transformation

verbally sharing my knowledge to others

Mostly via papers that were cited during presentations

"Additionally, I'll explore ways to address the technology and capital gaps identified during the conference within our specific context.

Exploring cross-border collaborations for more effective initiatives so to build on this research with integrating Natural Resource effective management "

With more participation of multiple stakeholders

Sharing information with the communities and researchers at different forums

Through Research and outreach initiatives at different levels

Synthesis paper from our learning in the Ganges delta

I will need to write a summary and then will think a strategy

Share

Impressive Administration

Focus on connections and relationship builds

How could the Symposium be improved?

Everything was perfect, however, it would have been good if a final recommendations documentation had been developed and shared

By involving more social science aspects into it.

It was a very intensive program. Extending the time can provide opportunities for all of the participants to share their useful information.

To enhance the symposium, organizers could consider diversifying the range of speakers to include a broader spectrum of perspectives. Incorporating interactive workshops or breakout sessions would encourage deeper engagement and knowledge sharing among participants. Additionally, utilizing technology for virtual attendance options could increase accessibility for those unable to attend in person. "

Integrate arts and cultural elements into the symposium program to enrich the experience and foster creativity, innovation, and cross-cultural understanding among participants.

Just short visit the field trips and more networking with international forum

The symposium was well-designed and perfectly arranged. However, it was a bit busy and the schedule was too tight. If there were a day off or wave off of the last session on one or two days, it could solve this problem.

Participation of everyone

It may improve by conducting more interactive sessions.

Schedule should be relaxed in some extent.

The time length of the symposium is too short. The duration should be extended.

"Ah oh very tight schedules!!! 😊

Probably stretching to one or two more days could help provide relaxing environment to participants and perhaps more helpful for learning and networking"

Allocate some free time for the participant to think and group discussion for a specific theme.

Difficult to answer. It was very good. Perhaps a shorter field trip on the way back to Ho Chi Minh City.

It was very well organized.

Time management needs to be improved.

More time networking and less time in plenary for presentations

while there is always room for improvement, at this point, didnt see any major issue that required correction or needing improvement.

Adding diversity to participants of different locations/nations and more field visits.

The number of sessions can be reduced and more time need to be allocated for discussions and group work.

it was a nice plate farm to sharing our presentations and poster no any other idea in my mind for improvement.

The symposium need not to be rushed with so many things/ presentations. Approach to encompassing everything in just 2 days need to be revisited. Sufficient time allocation for each presentation following by the Q&A session for better learning is highly suggested. Most of the presentations, due to the clock rushing, gone less digested

Feedback from participants

Keeping in view the overall data base and outcomes of the projects, a time should be given to the scientists for elaborative presentations in detail by expanding the symposium atleast one day.

should control time better

More interactive sessions than presentations

Extend time and expand diverse content to gain more knowledge.

Symposium itself was fine, though the poster sessions did not really work as it was difficult to hear the presenters. Possibly reduce the number of formal after-hours commitments (e.g. dinner every night) to allow participants time to relax and/or take in the experiences of Can Tho a little more. Maybe one site visit rather than two? (though can see the benefits of visiting salinity impacted and not impacted sites to see the difference).

There are opportunities to improvise the topics of presentation covering all aspects of the project.

The logictis

Interaction with faculties of Can Tho University.

Time prevented us from having enough opportunities for coordinated discussion combined with down time for reflection

"It was improved. Try to activate every participant in Symposium"

Increase the duration

Need a half day to put together diverse skills and teams together to map out possible roadmaps for different issues

Invite the farmers as well

"One or two more days to allow for some free time.

Encourage the younger team members to take a more leading role"

it was a nice symposium for us

Slido was a bit of a fizzer so if used again maybe try to integrate it more? At least acknowledge and address the questions raised within it a few times a day, share poll results with the whole group, have a prize for participation, that sort of thing

It was good

There should be thematic side meetings to discuss how joint working relationships be developed and what are the interesting areas of research collaboration.

Providing some time to study the cultural differences and common values

More details ahead of time about field trips

Peer reviewed presentations

Way forward

"1-More time for interaction among different nationals

2-More time to absorb so much information "

More time between sessions

Symposium proceedings

A copy of the symposium proceedings is available in dpf format. Staff from the three ACIAR projects agreed that the proceedings were not to be publicly available as to do so may compromise journal publication of the content.