

The Crawford Fund Annual Conference 2023

Scholar Reflections



Crawford
Fund FOR A FOOD
SECURE WORLD

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Our 2023 ACT scholars (left to right) Sibjan Chaulagain, Rachel Nye, Rose Zhang and Pravin Khambalkar pictured with ACT Crawford Fund Committee Coordinator Dave Shearer and Committee Chair Dr Wendy Craik.

Sibjan Chaulagain, Australian National University

Mentor: Dr Julianne Biddle

After working in the digital Agtech sector, providing critical crop weather and market advisories to farmers in Nepal for almost six years, I came to the Australian National University to study MSc Agriculture Innovation through the Australia Awards Scholarship. Since then, the Crawford Conference has been the most valuable event I have had in Australia, mainly because of the relevance to the topic of my interest, the one-on-one mentor experience, scholar events, networking opportunities, and quality of speakers and sessions.

The conference's theme, 'Global food security in a riskier world' was particularly interesting to me. With my experience working back in Nepal; my research developing digital agriculture solutions for farmers in Papua New Guinea under ANU Professor Dr. Steven Crimp; and a course 'Partnership for Agriculture Research and Development' taught by ANU Professor Dr. Peter Kanowski; I have developed my passion and interest for agriculture development in low-middle income countries. Some events cannot translate topic objectives, but this event was different. I was fascinated to see hundreds of experts participating in the conference who cared about the importance and need of international agriculture research for development to ensure food security in riskier developing countries.

As a scholar, I had the privilege to access personal mentorship from Dr. Julianne Biddle from ACIAR, which I consider another valuable experience. Clarifying the event objectives, carefully listening to my research and work to-date as well as future plans, and connecting me to the right experts was all handled so beautifully by my mentor. Being with her at almost all the conference events boosted my confidence and engagement in dialogues. She organised a meeting for me with Dr. Elliane Ubalijoro to explore future opportunities in Nepal and abroad with CIFOR/ICRAF for food security. With another introduction to Dr. James Quilty, I explored the possibilities of digital agriculture's role in ACIAR's portfolio. And, with the US Envoy for Global Food Security Dr Cary Fowler and his team member Joseph, we explored opportunities for USAID investment in Nepal.

The quality of sessions and speakers was another attraction of this conference, where I learned about challenges and opportunities in food security in the developing world. The special envoy of US Global Food Security, Dr Cary Fowler, pointed out a scary figure of climate change, that global temperature has been constantly increasing for the last 533 months. To adapt to climate change, he urged us to explore underutilised crops as they are resilient and can perform better. Kym Anderson pointed out market, technology, and policy uncertainty as risks to food security, where he cited the need for investment in research and fostering public-private partnerships. I got to understand the importance of trees, forests, and landscapes in ensuring food and nutrition security from Dr Ubalijoro. I was so touched when she said any effort we make today to ensure food security will impact our coming generations. Numerous other expert speakers presented their insights on challenges and solutions to ensure food security in developing countries.

The scholar event designed and facilitated by the RAID Network for helped us to create synergy in understanding and effort for international agriculture research for development. As most of the scholars are connected on LinkedIn, I look forward to learning from all and creating partnership opportunities.

Finally, I would like to thank my mentor, the Crawford ACT committee, RAID Network, ACIAR, and DFAT for creating a good experience and network. I am more committed to global food security and international agriculture research for development.

Pravin Khambalkar, Australian National University

Mentor: Tony Fischer

First of all, I would like to begin by saying that I really enjoyed attending the 2023 Crawford Fund Conference as a Conference Scholar. I felt very fortunate to attend event along with many passionate researchers looking to improving agriculture.

The scholars' days event organised before the conference, during the conference and after the conference were great and very well organised. The people invited to speak during scholars' days were excellent in their respective fields and had great stories/experiences to share.

During the conference the speakers were great starting from the Senator the Hon Penny Wong, (Minister for Foreign Affairs). It was amazing to see her presence in the conference. It was visionary to Dr Cary Fowler during his talk and got the update about global food security. The talk from Roya Khalil was great to hear about the biofertilisers and enhanced fertilisers. The talk by Dr Warren T K Lee on Climate Solutions for Healthy Diets, Nutrition and Health was excellent.

I would like to thank my mentor Tony Fischer as he was great to talk to before the conference and during the conference. He introduced me to many people, and it was great to have mentor with such huge experience in the research. He showed a genuine interest in my research, and I really appreciated his advice on my career aspirations. I also enjoyed hearing about his interesting career.

Overall, it was an amazing experience and I would like to thank the Crawford Fund Scholar Program for giving us such a great opportunity. Finally, I'd like to thank the speakers, event organisers, and mentors for giving their time to such a great conference. Thank you.

Rachel Nye, AusVet

Mentor: Jenny Hanks

Attending the Crawford Fund conference gave me valuable insights into fields of agriculture outside my own. My experience was enhanced by being a part of the Crawford Fund Scholar Program, allowing me to network with amazing people with interesting and unique perspectives in international agriculture.

I am grateful to have had such a wonderful mentor in Jenny Hanks. She was more than willing to share her experiences in international research and development and provide guidance and advice in these areas. I was introduced to so many of her amazing colleagues and am excited to hear about her future projects in Indonesia.

The theme of the Crawford Fund Conference this year was "Global food security in a riskier world". The conference covered various aspects of agricultural research, from current challenges to global food security, to new technologies and methods being implemented to secure the future of global food security.

For me, the key message of the conference was 'Challenges and Opportunities'. Now, more than ever, the world is facing a variety of challenges that are affecting global food security, namely 'Covid, Conflict and Climate Change'. There are many examples of the impacts these challenges are currently causing today. For example, the rising sea levels are rapidly changing the salinity in soils in the Mekong region and the war in Ukraine is affecting global grain supply chains. However, with these challenges we must look for the opportunities to change, enhance and develop international agriculture to ensure the future of global food security. This may be through developing more salt tolerant varieties of plants or developing crops to improve nutrition. In addition to the key message above, there were many other noteworthy takeaways. Firstly, looking for innovation and ways to improve current technologies. With the constantly evolving and rapidly improving technologies available, these could be harnessed to create novel tools and techniques to revolutionise the field. Another concern during the conference day was the need to ensure adequate and sustainable food supply to our rapidly growing global population. Addressing this challenge is a complex task that requires innovative thinking, responsible resource management and a concerted effort from all stakeholders in the agriculture sector.

The highlights of the conference and scholar days included the opportunity to network with peers and experts in a wide range of fields, the sessions specifically organised for scholars by the Crawford Fund and RAID network and gaining insights from individuals' firsthand accounts of their careers and experiences in international agriculture was inspiring. I would like to take this opportunity to thank the ACT Crawford Fund Committee for the opportunity to attend the Crawford Fund Conference and scholar days.

Rose Zhang, Australian National University

Mentor: TJ Higgins

The 2023 Crawford Fund Conference, centred around the pertinent topic of 'Global Food Security in a Riskier World', was an incredible opportunity to network with global agricultural experts and deepen my knowledge of international agricultural development.

The Conference showcased a diverse array of domestic and international speakers who engaged with global food security through a multitude of different perspectives. As a molecular plant science working in the agricultural space, it was valuable to broaden my knowledge about social and economic factors that influence and drive agricultural development.

Professor Wendy Umberger and Professor Kym Anderson's addresses about on-farm and off-farm risks to global food security were especially valuable, as they broadened my understanding of how farmer and consumer decisions drive agricultural demands and priorities. Given this year's focus on food security, it was great to hear from speakers whose work spanned from 'farm-to-fork'. From exciting on-farm interventions to optimise farm irrigation, to increasing nutritional literacy in vulnerable communities, the Conference provided comprehensive insight into the state of affairs across the entire food value chain. As the new CEO of ACIAR, it was especially enlightening and inspiring to hear from Professor Wendy Umberger as she highlighted her goals and directions for Australia's premiere agricultural research agency.

The two scholar days, arranged on either side of the Conference, were wonderful opportunities to learn about the ins and outs of international agricultural development while forming close networks with fellow scholars from both Australia and the Asia-Pacific region.

I learned about the practicalities of commencing international agricultural development project, from how to search for opportunities to useful skills and training from those in the know. It was also incredibly inspiring to hear first-hand from members of RAID about the rewarding experiences, difficult challenges, and exciting outcomes of their international agricultural development journeys.

The mentoring offered through the Crawford Scholars program was no doubt a highlight of my conference experience, and I'd like to give a special thanks to my mentor Dr. TJ Higgins for his encouragement, advice and support throughout the conference and beyond. TJ's wealth of experience in harnessing biotechnological approaches to achieve tangible agricultural benefits perfectly embodies the goals of international agricultural development, and it was a privilege to learn from him! As a new PhD student, it can be daunting to approach and network with others during conferences, and I was immensely grateful for TJ's enthusiasm in introducing me to colleagues in my fields of interest.

Numerous international speakers and attendees of this year's Conference marvelled at how lucky we are in Australia to have ACIAR and the Crawford Fund, and after attending three fantastic days through the Crawford Scholars program, I certainly feel the same. The opportunities I've learnt about and networks I've built through this experience are microcosms of the invaluable opportunities and engaging networks that ACIAR and the Crawford Fund provide to international agricultural development. This experience will certainly be a highlight of my PhD!

NEW SOUTH WALES NSW Crawford Fund Committee Supported Scholars



New South Wales scholars (left to right) Jorge Ramos, Sang Le, Viet Duong, Marieke Hoelscher, Kayla Lochner, Matthew Roscher, Claudio Cortellazzi and Sally Poole pictured with NSW Crawford Fund Committee Coordinator Dr Helen Scott Orr, Committee Member Dr Peter Wynn and Committee Chair Dr Richard Sheldrake.

Claudio Cortellazzi, Western Sydney University

Mentor: Deirdre Lemerle

I was fortunate enough to be accepted to attend the 2023 Crawford fund conference in Canberra. As a first year PHD student with my topic of research being sustainable agriculture and the Crawford Fund being my very first conference, I did not know what to expect but I was very excited to attend and be able to network with likeminded people with the same goal to combat future global issues.

The conference exceeded my expectations, and it has broadened my way of thinking as there was such a diverse panel of speakers from different disciplines that I would not normally consider.

As my research is very focused in one area, I was very grateful to be able to listen to the speakers talk about their current and past projects and the importance of their discipline, as often it is easy to get tunnel vision and get lost within the bigger picture. The Crawford Fund has helped broaden my way of thinking and has guided me to wanting to be a better researcher. I have started thinking about how I can do my bit with my PHD to make an impact for the future.

Marieke Hoelscher, Charles Sturt University

Mentor: Mikayla Hyland-Woods

The theme of the 2023 Crawford Fund Conference was "Global food security in a riskier world". I am extremely honoured to have been chosen as a scholarship recipient to attend the conference after returning from a two-week study tour in Timor-Leste during my last session of my undergraduate agriculture degree at Charles Sturt University exploring livestock, cropping, forestry, and fisheries. The conference was a great opportunity to hear about the main challenges but also opportunities for international agricultural research for development.

The scholar program was great fun but also invigorating. I thoroughly enjoyed the structured nature of the speed networking session and trivia night as well as having the scholar program split over two days! I had a lot in common with my mentor, a current graduate at ACIAR and learnt a lot from her about career and postgraduate study opportunities as well as introductions to other valuable people to chat to during the conference.

I now know it is important to take risks and search for volunteering positions and reach out to networks to harness connections.

The presentations during the conference were very relevant to me especially Deidre's on how to break into international ag research and the session on how to approach media and journalists. I will also be joining the RAID Network to stay in touch and in the loop for further opportunities.

From the conference the main lessons were:

- There is no such thing as food security without healthy soils and adaptive crops.
- We can't solve world order problems from a single discipline – we need to create multidisciplinary teams to collaborate on big issues.
- Climate is disrupting food systems – we need to actively reorder them.
- Seed banks will play a vital role in protecting nations and helping rebuild after conflict/climate disasters.

The highlights from the presentations for me go to the keynote speakers: Dr Cary Fowler, Professor Wendy Umberger, Emeritus Professor Kym Anderson and Dr Eliane Ubalijoro, all delivering extremely inspirational speeches. My favourite presentation was by Dr Khamis on black soldier fly production systems and the value to developing countries and smallholder farmers. I have done placement with a BSF production facility in Melbourne so found it fascinating to hear about the application to developing countries.

Australian farming systems have a lot to learn from overseas and vice versa. Shifting to multi-trophic diverse food systems like those of smallholder farmers will improve environmental sustainability and resilience. However, western countries such as Australia must be careful to not come in and dictate to these developing countries about what they need without first doing social research and surveys in the community.

Thank you again to the Crawford Fund especially the NSW Committee for supporting me to attend this conference, it was highly beneficial! I will be encouraging my peers in undergraduate degrees to apply for this scholarship next year.

Kayla Lochner, University of New South Wales

Mentor: Cathy O'Mullan

The 2023 Crawford Fund Conference theme focussed on examining global food security in a riskier world was a kind reminder to me of why I am passionate about agricultural research, and of the challenge we are all faced with: to create equitable, resilient and secure food systems for all.

When I think of agricultural research, I think deeply about how people are the centre of our food systems. With this in mind, I spent a lot of the conference reflecting on how much of the work produced in scientific agricultural research requires an integrated approach with those who are experienced in working in communities, work deeply examining human experience, and especially with those that utilise systems-based and social justice approaches to securing a food secure world. Crossing disciplinary boundaries and experimenting between qualitative and quantitative methodologies is only the start of such system-based transformations, and certainly discussed in between many of the conference sessions as a critical way forward.

I am very grateful to my mentor, Dr Cathy O'Mullan from Central Queensland University, who has supported me to be confident in advocating for the utility and effectiveness of deeply qualitative research in a sector that is driven by science and innovation. She, and the conference, reminded me of why justice-based approaches are required to imagine a future food system that is diversified and equitable for those who work the hardest, but are so often disproportionately left behind, to produce our food.

But perhaps more importantly, the 2023 Conference highlighted how progressive, new thinking is emerging in Australian agricultural studies. In networking with other Conference scholars, the diversity of research and an interest in working together between disciplines, sharing knowledge and experiences, and supporting each other is beginning to emerge in a new cohort of young researchers. This is the start of what I hope will see greater diversity in the future of Australian agricultural research. Many of the conference scholars were also keenly interested in examining Australia's role and responsibility in the geopolitics of food production, especially with our Pacific neighbours. Understanding how our capacity in innovation and research can be used to support a strong regional interest will hopefully contribute to a more balanced politics of food.

I really appreciated the networking opportunities – with other conference scholars and with other attendees – and the genuinely warm investment many of those I met had in learning about my professional development research ambitions. With many thanks to:

- The Crawford Fund NSW Committee for sponsoring me to attend this year,
- Dr Cathy O'Mullan for her generous mentorship,
- The RAID Network for being great ag-vocates and friends,
- Cathy, Larissa and Sue for their continued expertise and support of young agriculture researchers, and
- My many new Aggie friends – I look forward to continued coffees and collaborations!

Sally Poole, University of Sydney / Digital Ag Technologies Australia (Data Ag)

Mentor: Tim Reeves

The Crawford Fund conference scholars' program is one of the most uniquely energising and connective programs I have ever participated in. As soon as we entered the room, on the first day of the scholars' program, the excitement and passion for international agricultural research was electrifying. The scholars and mentors spent that first day connecting with each other and listening to a few industry leaders about some of their career paths and key learnings that they have gained working in international agricultural development and food security.

This collective and energising passion for food security continued throughout the Crawford Fund Conference events as researchers, industry leaders, and scholars connected with one another and shared ideas. During the conference we learnt about the role that international agricultural research has in contributing to a more food secure world from a wide range of perspectives.

Climate change, covid and increasing conflicts globally, were all highlighted as key challenges to global food security. However, these challenges were also highlighted as coming with new or different opportunities for improving the sustainability and diversity of our food systems. Some of the key highlights from the conference were:

- Dr Cary Fowler, U.S. Special Envoy for Global Food Security, talked about healthy productive soils as being the basis of food security. Also, that we need to look more at indigenous and traditional crops and consider those 'moon shot' ideas as ways of improving the resilience of our food systems.
- Dr Éliane Ubalijoro, the CEO of CIFOR-ICRAF, highlighted the important roles of forestry and agroforestry has on mitigating climate change and protecting and contributing to our food systems.
- Emeritus Professor Kym Anderson discussed the role of markets and governments on influencing the accessibility to food around the world. I particularly found interesting, his discussion on how government economic interventions can have a massive impact on local and global food security.

The importance of interdisciplinary collaboration in agricultural research and innovation was continually raised by all the speakers as being crucial for project success and adoption of new ag technologies or innovative practices. The importance of ownership by local stakeholders was reiterated as being critical to the success and longevity of projects.

One of my personal key highlights from the conference was connecting with my conference mentor Professor Tim Reeves. Tim was incredibly generous with sharing his knowledge and wisdom about agricultural research and development. He provided so much insight and encouragement relating to my goals and aspirations and was pivotal in ensuring I had the opportunities to connect with so many different people during the conference. This allowed me to connect with many people I would have never otherwise approached at the conference and afterwards. I am forever grateful to Tim for sharing his passion, knowledge, and connections with me.

Another major highlight of the conference was getting to know all the other conference scholars. It was fantastic getting to know about the work they are currently involved in and their aspirations for the future. We all come from such a diverse range of backgrounds and areas of expertise but were all united by our passion for a sustainable global food secure future. This made for many thought provoking and fun moments throughout the conference and scholars' days and no doubt many long term connections and friendships. Thank you to the Crawford Fund for providing me with such an impactful, connective, and informative opportunity.

Jorge Ramos, Charles Sturt University

Mentor: Mellissa Wood

The first thing that I want to mention is how smooth the 2023 conference was run: from the expertise of the speakers and diversity of topics covered, to more mundane, but equally important elements like catering, transport and the like, every aspect was of high quality. This impeccable execution stands as testament to the skills, experience and attention to detail of the organising team.

I am grateful for the opportunity to have attended the 2023 conference. The conference was a great opportunity to reinforce ideas and create new intellectual pathways. It was a forum where seasoned experts presented fresh perspectives alongside young scholars offering innovative insights. This blending of thoughts was one of the most rewarding aspects of the conference for me. The opportunity to engage with these diverse perspectives allowed me to "recalibrate" some of my ideas, particularly in the context of my work in developing countries.

It is easy to lose sight of the practical application of research when you're purely focused on academic pursuits. At times this has been the case during my current research; when trying to understand microclimatic aspects of coffee agroforestry, while still trying to keep a good perspective of the nexus between social elements and biophysical dimensions. The conference brought a good perspective of these practicalities and the many challenges facing global food security.

Notably, many presentations highlighted the issue of food security in light of the escalating climate crisis. Dr. Éliane Ubalijoro's (CIFOR/ICRAF) presentation resonated deeply with me, not only for her personal experiences during the Rwandan genocide in the 90s, but also for her compelling argument regarding the increasing relevance of trees in agriculture. While agroforestry has long been recognised as pivotal to the livelihoods of many small landholders in developing countries, it is only in recent years that its significance in climate change adaptation and food security has gained prominence. Dr. Ubalijoro's insights, along with those of other speakers, underscored this shift in perspective. The emphasis on scaling up "trees for food security" instils confidence in me that the work we are undertaking in Timor-Leste in the field of agroforestry in the context of climate mitigation and adaptation with local farmers, is on the right path.

I also had the opportunity to have interesting conversations and share ideas with many of the participants; but specially with Mellissa Wood; my mentor, and Dr Helen Scott-Orr, the Coordinator of Crawford Fund NSW. Both generously introduced me to other scholars and experts. Thank you both and thank you to the Crawford Fund! The opportunity to establish new connections is invaluable, and the conference provided an ideal environment for fostering these connections.

Matthew Roscher, Australian National Centre for Ocean Resources and Security (ANCORS), University of Wollongong

Mentor: Helen Scott-Orr

Many people highlighted the uniqueness of the Crawford Fund annual conference throughout the three days of events. After attending the 2023 conference, titled "Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems," I can now understand why. The conference enables early career researchers to integrate with established experts from a broad range of disciplines in a way that I had not previously experienced in a conference setting.

Being one of these early career researchers as a third year PhD student, I found the conference valuable to gain exposure to disciplines further afield of my studies and to broaden my understanding of both the challenges and opportunities ahead.

The speakers throughout the events provided diverse perspectives of the on-farm and off-farm risks that rural people face in different social and ecological contexts. While much of the lectures and discussions focused on terrestrial environments and I come from a small-scale fisheries school of thought, there were many transferable lessons to draw from.

This is partially due to the understanding that people typically engage in dynamic and intersectoral economic activities. Strengthening global food security in a riskier world therefore requires policies and investments that can account for the complex ways in which people build their lives in order to mitigate and adapt to these risks. Informing such policies and investments requires a diversity of perspectives to be included. I came away from the conference with a renewed conviction regarding the importance of multi-disciplinary research to generate these insights.

The conference highlighted numerous technological innovations from the past decade that can help contribute to resilient food systems around the globe. These exciting innovations provide an opportunity to increase production, market efficiency, gender equity, and sustainable resource management, among other benefits. However, technological advances also pose a challenge to increasing existing inequalities if they do not reach the most vulnerable people.

Previous research has highlighted a growing digital divide occurring around the globe, where those who do not have access to technology are becoming further marginalised in an increasingly digital world. There is also much research on the concept of poverty traps in which the poorest are unable to mobilise their limited assets to pursue emerging opportunities.

As I reflect on the discussions around these advances, a key message that I took away is the importance of insuring inclusive and equitable access to these opportunities. This message can perhaps be best summarised through Dr. Éliane Ubalijoro's remark that the opposite of poverty is opportunity.

To sustainably feed 8 billion people, we must do more with less. The conference strengthened my confidence that we are headed in the right direction, but it also made me more aware of the enormous amount of work ahead. Thank you to the NSW Crawford Fund Committee for the opportunity to attend the conference and hear about some of the great work currently underway.

I am eager to contribute to this work through the research I will conduct as part of my student award, with the vision of creating a more food secure world for the next generation.

EXTERNALLY SUPPORTED SCHOLARS

- The University of New England

Viet Duong

Mentor: Prof. Lindsay Falvey

I had an incredible experience at the Crawford Fund Conference 2023 as a Crawford Fund scholar. The conference was an enlightening experience that brought together professionals from diverse agricultural backgrounds at various stages in their careers. As a PhD student, interacting with these seasoned professionals provided a panoramic view of the myriad opportunities within the agricultural industry. Moreover, the conference deepened my understanding of international agricultural development and illuminated potential career trajectories.

The discussions at the conference shed light on the intricate challenges faced by the agricultural sector, particularly in enhancing food security. The breadth of the speakers offered a holistic perspective on addressing the multifaceted challenges that plague global food security. This includes factors such as climate change, geopolitical issues, and the practicalities of grassroots agricultural practices. It became evident that the path to solutions demands an amalgamation of technological advancements, well-informed policies, rigorous research, and cohesive global collaboration.

Dr. Cary Fowler's emphasis on the adaptability of crops and soil in changing conditions, combined with the pivotal role of trade in global food security, was particularly enlightening. This sentiment was further reinforced by Prof. Kym Anderson's call for improved markets, heightened investment in agricultural research, and pivotal policy reforms. Additionally, Prof. Wendy Umberger's insights into on-farm risks and their overarching impact on global food security were both inspiring and thought-provoking. She poignantly illustrated the vulnerabilities of smallholder farmers and how climate change magnifies these risks. Yet, she also offered hope by suggesting that with the right tools and strategies, these risks can be mitigated, building resilience in the process.

One of my most profound takeaways from the conference was the undeniable power of collaboration. Recognising the value of interdisciplinary synergy, I am now more than ever eager to engage with scientists and researchers from various fields in my own research.

A standout aspect of the conference was the mentorship program. Being paired with a mentor was not only educational but also deeply personal. This provided the opportunity to develop a professional relationship enhanced knowledge transfer and networking opportunities. My mentor, Prof. Lindsay Falvey, expressed genuine interest in my research, offering invaluable guidance regarding my career aspirations. Hearing about his enriching experiences, especially his work in diverse cultural environments like Thailand, was truly inspiring. This mentorship, combined with the conference's insights, has shaped my perspective, making me more equipped and motivated for the journey ahead.

Overall, the conference was a great experience, and I would like to thank the Crawford Fund and the great people at RAID and the University of New England for providing me the opportunity to participate in this year's conference.

Sang Le

Mentor: Lindsay Falvey

Two years ago, I attended the Crawford Fund conference for the first time, albeit virtually due to Covid travel restrictions. This year, I had the privilege of representing myself in person and actively participating in all the conference activities as a conference scholar over three days. This conference stands out as one of the highlights of my year. It's not just because of the high-quality speakers and the valuable information they shared but also the network I've built during and after the conference.

The conference shed light on several compelling topics, but one that deeply resonated with me was the fact that, as of 2019, nine per cent of the global population still experienced hunger, and this number continues to rise daily. Having grown up in small villages in the North of Vietnam, I understand the feeling of going to bed on an empty stomach, especially during the winter.

How can we ensure global food security, preventing no one from going to bed hungry, especially in times of Covid, climate change, and conflicts, all converging at once?

While these challenges are daunting, they also present opportunities for us to enhance and safeguard global food security. To achieve this, we need a comprehensive approach, from understanding the situation, and the need in each region and what could we prioritise first (Dr. Wendy Umberger), to altering policies to addressing constraints, and building resilience within our food systems (Dr. Cary Fowler). Additionally, the conference emphasised the crucial roles of forestry and agroforestry in mitigating climate change and contributing to our food systems (Dr Eliane Ubalijoro), as well as the significant impacts of markets on local and international food security (Dr Kym Anderson).

Another highlight was the significance of networking, mentoring, and volunteering. I'm grateful to my conference mentor, Lindsay Falvey, for the wisdom and connections he helped me establish during and beyond the conference. Engaging in Scholar Day activities also provided me with opportunities to connect not only with professionals in my field but also with industry experts, decision-makers, and academics. I see more opportunities ahead with RAID and Australian volunteer programs, offering avenues to work, learn, and exchange knowledge in developing countries.

A valuable lesson I've learned is that in addition to improving my knowledge in my field, of animal science, I also need to develop soft skills such as social interaction and public speaking. These soft skills don't just enhance my ability to communicate and collaborate effectively within the field but also open doors to broader opportunities for engagement and impact.

Last but not least, I would like to express my gratitude to the University of New England and the Crawford Fund committee for their support in granting me the opportunity to be a conference scholar. I believe that by working together, we can ensure that no one goes to bed with an empty stomach.

NORTHERN TERRITORY NT Crawford Fund Committee Supported Scholars



Our 2023 NT scholars (left to right) Leif Emberg and Patrick (Binyin) Di pictured with Tania Paul Crawford Fund NT Coordinator, Helen Garnett NT Chair and Crawford Fund Board member, and our two scholars attending from Papua New Guinea Margaret Gene and Anna Yamanea.

Patrick (Binyin) Di, Northern Territory Farmers Association

Mentor: Megan Williams

I was deeply honoured to be part of the 2023 Crawford Fund Annual Conference and NextGen Scholar Programme in September. In many parts of the world, September means a time to harvest. From the Northern Territory's perspective, mature mangoes are soon ready to be served on plates. It is also a time to reflect on global food security, since alarmingly, around 9.2 percent of the world population, ranging between 691 and 783 million, faced hunger in 2022, according to The State of Food Security and Nutrition in the World 2023.

The current crisis in global food security has been exacerbated by the rising prices of food, agricultural inputs, and energy. Furthermore, the ongoing war in Ukraine has amplified these challenges. The recovery of jobs and incomes amongst the most vulnerable people has been hindered, impeding progress towards reducing hunger. Living in a first-world country like Australia, we so easily take our food for granted.

We so easily forget the huge effort to produce our food to be displayed on shelves. As this conference entitled Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems, a good understanding of both on- and off-farm risk mitigation strategies plays a significant role for researchers, policymakers and industry stakeholders in the realms of agricultural research for international development.

This conference once again emphasised that it is essential to invest more in agricultural research and development in developing countries in light of the current global challenges posed by the 3Cs: the COVID-19 pandemic, Climate Change, and Conflicts.

Throughout the conference, the speakers discussed both on-farm and off-farm solutions aimed at addressing the impediments and uncertainties around global food security. The conference revealed numerous examples and concepts to solve this complex issue from various angles: from sustainable intensification by adopting technologies in Africa attributed by Prof Jamie Pittock to the success of the circular economy in insect farming – Black Soldier Flies (BSL), mentioned by Dr Fathiya Mbarak Khamis.

Moreover, the importance of Climate Smart Agriculture (CSA) was highlighted by Dr Roya Khalil's research in biofertilisers and enhanced efficiency fertilisers, Dr Warren T K Lee's immense knowledge of on-farm agri-food system transformation and Professor Kadambot Siddique's future smart crop proposal by promoting neglected and underutilised crops. Other focuses, such as supply chain resilience, diversification and policy options were also featured.

Australia is blessed by its geographic location and bountiful natural resources; it was therefore described as “The Lucky Country” by Donald Horne in 1964. Nevertheless, Australia is one of the few countries in the world that invests in agriculture research for international development space. By celebrating and reflecting on the 41-year journey of ACIAR and the 10th anniversary of the RAID Network, it is clear there is still a need to achieve more endeavours by doing more with less.

The Crawford Fund has given me tremendous opportunities to listen to and understand the invaluable experiences of a handful of dedicated and talented people leading agricultural and food security research in the Global South. Their presence provided not only guidance to young scholars but also an honour and tribute to the accomplishments and legacies of those who have gone before. This made the Crawford Fund Conference truly a pilgrimage for many researchers to salute in the future.

Leif Ember, Southern Cross University

Mentor: Michael Scobie

As a recent graduate in environmental and marine science from Southern Cross University, my participation in the Crawford Fund 2023 Program for Scholars was a tremendous privilege. These three insightful days not only deepened my understanding of global food security but also illuminated the interconnectedness of agriculture, nutrition, and sustainability.

The program included two days of engaging scholar activities and guest presentations, which provided a platform for scholars from diverse backgrounds to come together with a shared commitment to addressing the multifaceted challenges in the realm of food security. These interactions underscored the importance of networking within the research community. The connections made during these sessions were invaluable, demonstrating that collaboration and the exchange of ideas are vital tools for advancing our collective knowledge and finding innovative solutions to complex problems.

The highlight of the program was the main conference, titled Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems. This conference, a congregation of experts, policymakers, and practitioners, illuminated the challenges and potential solutions in the quest for global food security, with diversification taking centre stage. It was evident that building personal networks and collaborating across disciplines are essential components of the journey toward more resilient food systems.

Dr. Éliane Ubalijoro, CEO of the Centre for International Forestry Research (CIFOR) and World Agroforestry (ICRAF), delivered an impressive presentation that left a lasting impact. Her ability to persevere in the face of adversity and her commitment to tackling poverty and embracing sustainable food systems were truly inspiring. Her words served as a powerful reminder that passion and determination can drive meaningful change, even in the face of formidable challenges.

However, one personal drawback that stood out was the lack of recognition towards the aquaculture and fisheries sectors, areas I have studied and currently work in. These sectors possess untapped potential to contribute significantly to resilient food and nutrition systems. While their absence from the discussions was notable, it underscores the importance of advocating for the inclusion of these critical sectors in future conversations about global food security.

My three days at the Crawford Fund 2023 Program for Scholars were transformative. I left with two main takeaways that will shape my future endeavours: the importance of building a personal network within the research community and the ability to adapt and pivot within a professional career in research. These insights, coupled with the inspiration drawn from several of the presentations and exceptional guidance from mentor Michael Scobie, have enriched my perspective and fuelled my commitment to contributing positively to the challenges of global food security and sustainability.

EXTERNALLY SUPPORTED SCHOLARS **- Department of Foreign Affairs & Trade**

Margaret Gene, Department of Agriculture & Livestock, Papua New Guinea

Mentor: David Shearer

Firstly, I would like to personally thank DFAT Australia for supporting Anna Yamanea and I, to come to Australia to attend the Annual Crawford Fund Conference in Canberra in September. I hope DFAT will continue to support Papua New Guinea and other developing countries in the Pacific for a food secure world in the nearer future.

Secondly, I would like to thank all the hardworking Crawford Fund Conference staff for making the event both a success and highly memorable.

I personally found the conference highly informative. All the presenters spoke about their research, experiences, challenges, and success stories throughout Asia-Pacific and the African continent.

A lesson that I learned throughout the conference and scholar day, is the power of networking and working together to address food security and climate change in the agriculture space to help humanity. Also, I was so impressed by the keynote speaker Dr. Eliane Ubalijoro who spoke about her own country Rwanda, the civil war and her success in the space of agro-forestry.

Reflecting back to my beautiful country Papua New Guinea, everybody is currently excited and already celebrating our 48th Independence, but I am very mindful of how Papua New Guinea will venture fully into agriculture development. Anna Yamanea and I both work for the Government. ACIAR through the bilateral arrangements has worked with PNG for over 30 years with many projects and contributed to the improved productivity and sustainability of agriculture and food systems.

One of ACIAR's current project is on "Family Farm Teams Program". This program provides a great network for Anna and I, as the government's gender focal point to help women build their skills and knowledge in farming in Papua New Guinea with ACIAR. Members of the Crawford Fund and ACIAR PNG project team attended the conference and enhanced our networking.

Finally, the Crawford Fund Conference is a platform for all the agricultural scientists in Australia, the Asia-Pacific and Africa to share their best research and findings to help humanity and create a pathway for us all on planet earth into the nearer future. Together, we can serve and preserve planet earth for tomorrow's future. In the future, I am looking forward to further inclusion of Papua New Guinea and other Pacific Island scientists and scholars at the Crawford Fund Conference. Thank you.

Anna Yamanea, Department of Agriculture & Livestock, Papua New Guinea

Mentor: Tania Paul

It was a great privilege and an honour to be given the opportunity to participate in the 2023 Crawford Fund Conference Scholarship Program. I wish to acknowledge the Crawford Fund for their undivided support and also appreciate the kind mentorship provided by Ms Tania Paul during the conference.

The 2023 Crawford Fund Annual Conference on Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems was very well organised from the logistics, to the conference programs, to the final day scholar activities.

The 2023 Crawford Fund Annual Conference brought together some of the world's finest leading agricultural scientists, researchers, policy developers and various players in the production and supply value chain together to share their knowledge and experiences with the participants and the young scholars.

The presentations on the various topics related to the global food security situation and the diversification for resilient food and nutrition systems practices was remarkable knowledge and experience sharing. The topic on "Climate Solutions for Healthy Diets, Nutrition and Health" by Dr Warren T.K. Lee of UN FAO provided in-depth knowledge on the impact of climate change to maintaining sound nutritional status of the global population.

Through attending this conference and being able to participate in the discussions on the various topics, it enabled me to fully understand the deep relationship between research and agriculture extension. The findings of all research must be made available to the consumers through the relevant approaches, in this case through the Agriculture Extension Approach.

One interesting activity that Margaret Gene and I participated in was the interview with ABC Australia. Our very sincere appreciation to our mentor, Ms Tania Paul for ensuring that the interview proceeded as planned.

Finally, I on behalf of the National Department of Agriculture and Livestock of Papua New Guinea, would like to sincerely acknowledge the Crawford Fund and DFAT for funding our travel to participate in this Conference. I would also like to acknowledge the hardworking team at the Crawford Fund, with a special mention for Ms Cathy Reade for her leadership. Thank you all.

QUEENSLAND QLD Crawford Fund Committee Supported Scholars



Our 2023 Queensland scholars (left to right) Madeleine Grist, Jemma Restall, Bisakha Dewan, Bethany Smith, Ming Cheng, Phoebe Arbon, Nakita Cally and Edith Kichamu pictured with QLD Crawford Fund Committee Coordinator Prof Bob Lawn.

Phoebe Arbon, James Cook University

Mentor: Helen Scott-Orr

The 2023 Crawford Fund Conference, titled *Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems* provided thought-provoking and globally-relevant perspectives on the future challenges and opportunities for global food security.

Dr Éliane Ubalijoro, CEO of CIFOR-ICRAF, opened the conference with the Sir John Crawford memorial address. Dr Ubalijoro's powerful address highlighted the significance of cooperation on a local to global scale, and the need for sustainable, system-based innovations to solve the polycrisis of climate, biodiversity, and food. Dr Cary Fowler, US Special Envoy for Global Food Security, spoke frankly on this polycrisis, asking "What factors did we previously overlook or underappreciate?". Through this reflection, Dr Fowler highlighted the value of acknowledging previous successes and shortcomings and adapting future strategies to address food insecurities using these lessons. Distilling his experience and wealth of knowledge, Dr Fowler highlighted the need to "get back to basics" above and below ground, with a call for focussed research efforts on developing more resilient crop varieties and building and conserving sustainable food production systems via healthy soils.

While the issues presented by the range of experts throughout the conference captured a challenging and obstacle-burdened future for ensuring global food security, their optimism for future solutions was not eclipsed. As a passionate early-career aquaculture scientist, I was inspired to translate the conference's important key messages, especially those highlighted by Dr Ubalijoro's and Dr Fowler's, to food production within the aquatic environment.

Parallels in the need for 'system'-based thinking and innovations that consider the interactions of the whole production environment were clear, from resilient crop varieties in healthy soils to hardy seafood species in healthy waterways. I will continue to be motivated by their calls to action and considerate of the lessons they shared as I continue forward in my career.

Bookending the conference, the Crawford Fund scholar's program facilitated unparalleled opportunity to network and hold open dialogue with an incredible host of expert mentors and fellow conference scholars. The mentors, including Dr Helen Scott-Orr AM PSM whom I was privileged to have as my own mentor, were generous with their time and knowledge-sharing. Connecting with my fellow conference scholars, who represented the remarkable next-generation of forward-thinkers in food production, inspired my own passions and aspirations towards achieving future food security. While there are many uncertainties for global food security in a riskier world, as highlighted by the title of the conference and the content presented within, being amongst the next generation of food production scholars assured certainty that the best and brightest will be at the forefront, paving the way forward.

Collectively, the 2023 Crawford Fund Conference and scholars' program provided a unique and invaluable opportunity for networking, knowledge-sharing and constructive dialogue, cultivating collaborative thinking and optimism towards solving the polycrisis of climate, biodiversity, and food. I am sincerely grateful to The Crawford Fund for allowing me to participate in such critical and topical discussion, as well as the RAID volunteers for their work in organising and facilitating the scholar events.

Nakita Cally, University of Queensland

Mentor: Tj Higgins

In the beginning, I was not entirely sure what to expect from the 2023 Crawford Scholarship Conference. I would say, I was actually a little hesitant to attend, especially with life's upheavals surrounding the time of the conference. It was very lucky that Cathy and the team made it still possible for me to attend, as I had no idea the room filled with a wealth of knowledge, experiences and buoyancy, I would be stepping into.

Each and every speaker was tried and tested in their field of expertise and yet still held hope for a better agricultural future across the globe. Coming from my environmental science studies and working as an agronomist for the last six months, I had no idea the whirlwind mental and emotional journey this conference was about to send me through. Here, I was able to rethink the why of my studies, the why I had chosen to become an agronomist after my studies. Through many presentations the socioeconomic impact of diseases and pests in crops leading to hunger and malnutrition in children across the globe, I was able to remember why I had retained a strong interest in phytopathogens while studying. Through learning about underutilised crops and the impact that both buying habits and marketing strategies can have on these I was invested; fully and completely. I needed to know more. I wanted to learn more, engage with, and speak to every individual who presented.

Out of both shyness and fear that they would not be interested in speaking to someone as lowly and unknowledgeable as I am, I was tentative, but made a move. Very quickly it became apparent that every speaker was more than willing to give their time and share information and contact details. It was then and there that the humble nature of the people working in the global agricultural development industry – especially in less developed countries – reminded me of who I am at my core: a humanitarian who just want to feed the world and make sure every child is adequately fed.

They fed us gainfully in each break we received throughout the three days, putting us all in the same room, making it impossible to be an antisocial butterfly, which is sometimes the little push we need to move out of our comfort zone. I quickly found myself in conversations with many different people at many different times. As I spoke to them, both students and professionals, I found myself making friends with like-minded individuals who spoke the language of my heart and shared their stories of where they had been and the agricultural innovations for their future, I became inspired to continue working towards my goal of living and working in Africa – helping in whichever way I can – to assist in moving the continent forward into a future that looks better than the present Western world we share today.

Madeleine Grist, University of Queensland

Mentor: Dong Wang

I would like to thank the Crawford Fund for hosting me as a scholar at this year's annual conference. I have previously attended the conference, and this year's experience as a scholar truly added a great deal of value to the event. Listening to the speakers was a great experience to deepen my knowledge of international agricultural development, but I was truly appreciative of the chance to network and learn from the other scholars and their mentors. It was a fabulous networking opportunity.

The range of speakers on the conference day showcased an array of national and international leaders and experts in the food security space. The conference theme allowed for discussion of more than just the challenges of international food security in an increasingly uncertain world. I got a lot out of listening to the individual speakers, but most enjoyed the question and answer sections of the panels, where speakers were able to engage with the other speakers to broaden the range of information they were able to engage with, and provide their opinion beyond their expert subject matter.

I enjoyed hearing from international actors in the food security space, such as Dr Cary Fowler and Dr Éliane Ubalijoro, especially to hear about international opinions on what Australia's role should be on the international stage. I appreciated the range of subject matter experts that were asked to present at the conference, from technical science experts to international engagement and strategy experts. Specialising in international agricultural development during my university studies and now working in the international agricultural policy space, it was great to see leaders in this field speak with passion about the subject that I am also passionate about. I engaged with the speakers' understanding of applying science to government and industry policy improvements.

My main takeaway from the scholars' days was the need to improve continued communication and collaboration regarding international food security between research institutions, government, industry and between countries. All of these stakeholders are working on international food security in different and often overlapping areas, but there is very little sharing of information while work is being done, after initial consultations. The Crawford Fund conference provided a great forum for people working across these areas to share ideas about what they are working on, but there needs to be further understanding in the gaps that exist in the information that is being shared and what would be beneficial to share between these organisations and agencies.

While I was not able to stay for the full last day of the scholars' experience, I really enjoyed hearing about the opportunities for international engagement through volunteering. The AusVols program sounds like a fabulous opportunity that I had never been exposed to before. I also thoroughly enjoyed hearing from journalists involved in the international development and agriculture space which is also an engagement space that I have had very little exposure to, but I gained a greater appreciation of how important journalism can be in promotion of getting information between stakeholders and a tool for increasing the reach of research and policy work.

I would like to thank my mentor, the Crawford Fund QLD committee, RAID network, ACIAR, DFAT and DAFF for creating a space for networking and a space for information sharing.

Edith Kichamu, Griffith University

Mentor: Anika Molesworth

I had the privilege of attending the Crawford Fund Annual Conference, which revolved around the pressing theme of Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems. The conference was an enlightening experience, offering an invaluable chance to hear from esteemed experts in the field and providing an avenue for forging strong connections with like-minded professionals.

One of the standout speakers, Dr Cary Fowler, the U.S. Special Envoy for Global Food Security, articulated a message that resonated deeply with me. He emphasised that the core of food security lies in adaptive crops and healthy soils.

This statement struck a chord because it underscores the significance of sustainable farming practices and their pivotal role in ensuring our global community remains fed and nourished.

The insights shared by Prof Wendy Umberger, the Agricultural Centre for International Agricultural Research (ACIAR) CEO, further enriched the discourse by shedding light on the nuances of on-farm risks and their implications for creating resilient food systems. If not addressed, such risks can have profound consequences on food supply chains, thus endangering food security. Another highlight was the keynote address by Dr Éliane Ubalijoro, the CEO of the Centre for International Forestry Research (CIFOR) and the World Agroforestry Centre (ICRAF). Éliane's talk provided a fresh perspective by delving into the intersection between forestry and food security. As forests play a multifaceted role in our ecosystem, understanding their connection to food systems is crucial, and Dr. Ubalijoro's discourse served as an eye-opener in this context.

Beyond the academic and professional insights, the Crawford Fund Annual Conference was also a rich networking platform. I was fortunate to make numerous connections, which I believe will be instrumental in my future endeavours. A special mention should be given to the Crawford Fund scholar activities. These sessions proved instrumental in enhancing connections. With their vast experience and insights, the mentors were particularly helpful, guiding us meticulously through various facets of the conference and ensuring we garnered the most out of this experience.

The 2023 Crawford Fund Annual Conference was not just an event but a holistic learning journey. It fostered a deeper understanding of global food security challenges, offered solutions, and paved the way for meaningful collaborations. I am immensely grateful for this opportunity and look forward to employing the knowledge and connections acquired to further the cause of food security.

Jemma Restall, Queensland Alliance for Agriculture and Food Innovation, University of Queensland

Mentor: Tristan Armstrong

The Crawford Fund 2023 Annual Conference titled Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems was an enlightening experience that has left a lasting mark on my academic journey. As a second year PhD student with a research focus on enhancing food security in Pacific Island Countries and Territories through genetic improvement of staple crops, this event was particularly relevant and inspiring.

The conference presentations and panel sessions were extremely informative, covering a wide range of topics related to agriculture, sustainability and food security, which are being impacted now more than ever with the presence of the 3Cs – Covid, Climate Change and Conflict.

One of my favourite talks from the day was delivered by Dr Fathiya Mbarak Khamis from the International Centre of Insect Physiology and Ecology who shared her teams groundbreaking work on the use of Black Soldier Fly as a more affordable and sustainable source of nutritious food for humans and feed for livestock. The opportunity at the conference to hear from speakers in various disciplines such as Dr Khamis, highlighted the multifaceted nature of the problems we face relating to global food security and the importance of interdisciplinary approaches in devising effective solutions to these challenges.

During the mentoring process of the scholar program, I was lucky enough to be paired with Dr Tristan Armstrong from DFAT who is the Senior Sector Specialist for Agricultural Development and Food Security. It was personally inspiring to hear about the amazing paths his career has taken since completing his PhD and transitioning from academia. I greatly appreciate the time he took to not only introduce me to his peers, but to also engage in meaningful conversations about my research and potential career trajectories as I advance my own academic journey.

Both the conference and scholar programs also offered invaluable networking opportunities. I had the privilege of engaging in discussions with fellow researchers and industry professionals at various stages of their careers. These interactions provided me with fresh perspectives on my research and encouraged the exchange of ideas that could potentially lead to collaborative efforts in the future. It was uplifting to witness the camaraderie amongst all attendees, driven by the shared goal of alleviating global food insecurity!

I'm honoured to have been involved in the 2023 Crawford Fund Scholars Program and would like to thank the QLD committee for sponsoring my attendance. I would also like to thank Larissa Mullot and Cathy Reade, along with all the RAID volunteers for their efforts in organising the conference and scholar days.

As I return to my research with renewed vigour, I carry with me the knowledge that I am part of a global community of researchers dedicated to making a difference in the world of agriculture and food security.

Bethany Smith, James Cook University

Mentor: Bosibori Bett

The use of the term 'riskier world' in the title of the Crawford Fund's 2023 annual conference on food security reflects the increasingly unpredictable and uncertain nature of the global environment. Throughout the event, a focus on the three big C's impacting humanity: i) climate, ii) conflict and iii) covid-19, further accentuated this unpredictability.

As a young scholar, the past couple of years have been the most globally unstable of my adult lifetime. To me, this period has highlighted the vital importance of addressing research questions and agendas from a systems-based perspective, reflecting the intrinsic interconnections that exist between the three big C's and beyond.

By bringing together diverse perspectives, the Crawford Conference has expanded my capacity to address food systems and security from a systems-based perspective. Specifically, this included an expanded understanding of key technological innovations that may support global food security. For example, I found myself particularly interested in the potential benefits of a transition towards the mainstreaming of underutilised food crops. As an environmental social scientist, I was able to reflect on potential interconnections between my work and technological innovations.

The importance of social science as a tool to support the implementation and uptake of new technologies was recognised throughout the event. Acknowledging that for technologies to be successful, they must meet the needs, wants, and aspirations of local populations.

The vital importance of knowledge sharing and co-production between Australian researchers and our partner countries in tackling the food security crisis acted as a key conference reflection. The food security challenge is not one that can be solved by working in geographical or disciplinary silos, and the Crawford Fund appears to be an enabling environment to facilitate cross-collaboration and transdisciplinary research activities amongst its members. As an early career researcher, I found this is of particular importance.

The conference provided me an opportunity to conceptualise the many components of transdisciplinary research, and to meet talented individuals from different disciplines and sectors that I may seek to collaborate with in the future.

Attending the conference as a scholar additionally provided me the unique opportunity to meet, network and form connections with fellow early career researchers in international agricultural development. Meeting my fellow scholars was a personal event highlight, acting as one of the first instances that I have had the opportunity to connect with other young researchers in this field. The focus given to conference scholars and their mentors drove a unique environment at the Crawford Conference, facilitating a welcoming and enabling environment for networking with individuals from all career stages. I would like to thank my mentor Bosibori Bett for ensuring I best harnessed this networking potential.

I would additionally like to thank the RAID network for their planning and execution of the scholar activity days which were of great value. Finally, thanks to the Crawford Fund for providing early career researchers with such a valuable opportunity.

EXTERNALLY SUPPORTED SCHOLARS

- Australasian Agricultural & Resource Economics Society (AARES)

Bisakha Dewan, University of Queensland

Mentor: Wendy Craik

Attending the Crawford Fund conference gave me immense insight, understanding, and a strong determination to address global food security for our current and future generations. As a conference scholar, I had the privilege of participating in various conference activities. Starting with the scholar activities it was a remarkable opportunity to connect with fellow scholars, mentors, and researchers from Crawford, RAID, and ACIAR.

Throughout the three days, I gained tremendous knowledge from discussions regarding their studies and initiatives. Each session proved to be informative and effective. Dr. Éliane Ubalijoro's insights on 'international networks and opportunities' particularly motivated me to think big, even if I start with a small role! Every role is important and impactful. I truly valued the interactions with numerous mentors, especially the speed meetings, which provided a valuable platform to learn new things, share my experiences, and seek advice. The most useful lesson for me from the very first day was, 'meet people, speak to them, learn from them and build a network!'

On the conference day, Hon. John Anderson AC, Chair of The Crawford Fund, discussed the three most critical factors affecting global food security: COVID-19, Climate Change, and Conflict (the 3Cs). These factors underscored how challenging it is to feed 8 billion people due to external influences. His discussion heightened my awareness of the significance of our agricultural research.

I also gained valuable insights from Dr. Éliane's conversation, where she emphasised that cooperation, knowledge sharing, and a solid commitment to creating a better society are essential for addressing the world's problems, particularly climate change-related ones. Her speech made me reconsider or highlight the necessity of protecting nature so that people can lead healthy lives with access to sufficient nutrient-rich food.

Furthermore, Dr. Cary Fowler, U.S. Special Envoy for Global Food Security, emphasised the importance of crop adaptation and soil health. His discussion on how underutilised crops have the potential to thrive in a changing climate and meet dietary needs inspired me to explore all possible options to ensure global food security.

I found it fascinating to hear Professor Wendy Umberger, Chief Executive Officer of ACIAR, discuss the relevance of on-farm risks and how they are perceived as sources of problems with global food security. Given that my doctoral research focuses on small-holder farmers, gender equity, and the agricultural value chain, her insights into agricultural risks faced by farmers, the significance of understanding individual circumstances at a household level, and the opportunities for diversifying options such as products, resources, and markets to mitigate risks provided me with a new perspective and potential directions for my future research.

The speakers' topics impressed me, being informative and accessible for new researchers or those from different fields. Providing adequate time for questions allowed us to understand the discussions better. As a scholar, I had the opportunity to meet and converse with experts from my research area and diverse fields. I believe these opportunities will provide tremendous support for my upcoming career. I am genuinely grateful to my mentor, Dr. Wendy Craik, a Crawford Fund Board Member, who dedicated her full attention to my well-being and future career. Her wealth of experience, advice, and guidance supported me in reflecting on myself, society, the importance of work-life balance, and my career trajectory. She facilitated my networking with conference speakers, professors, and expert researchers, which I sincerely appreciate.

I extend my deepest gratitude to AARES for granting me the opportunity to attend the prestigious Crawford Fund Annual Conference 2023 as a Crawford Fund Scholar. Without AARES' support, I would not have had this chance. I am also thankful to Dr. Sorada Tapsuwan, AARES president-elect, and David Shearer, acting Research Program Manager for Agribusiness at ACIAR. They generously dedicated their valuable time during the conference to share practical tips for my career. Finally, I express my appreciation to RAID and the Crawford Fund Conference organisers for their diligent efforts in making this event possible.

- University of Queensland

Ming Cheng

Mentor: Tim Reeves

With profound gratitude and humility, I reflect on the remarkable opportunity bestowed upon me as a Crawford Fund Scholar at the prestigious Crawford Fund Annual Conference 2023, centered around the theme, “Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems.” This experience marks my inaugural step into the world of agricultural conferences, and it has truly been a transformative journey.

This conference offered me a unique chance to delve into the pressing challenges of global food security, as presented by esteemed experts in the field. I gained valuable insights from multiple perspectives, particularly in the face of our changing climate, evidenced by the unprecedented heatwaves in June and July. The persistent issues of hunger and malnutrition on a global scale, with 690 million people still suffering in 2019, were brought to the forefront. Additionally, speakers underscored the often-overlooked impact of global conflicts on food security.

The conference’s agenda encompassed a wide array of topics, including on-farm risks, off-farm obstacles, bio-fertilizers, food diversity, supply chains, food nutrition, and the potential for innovative future foods. Dr. Éliane Ubalijoro’s personal narrative vividly illustrated how conflicts can disrupt a country’s food security and its people’s lives. Dr. Cary Fowler highlighted the severity of food insecurity and the suffering it causes, especially in conflict-affected regions. Professor Kadambot Siddique shed light on the gaps in food production, the limited yields of traditional major crops, nutrient deficiencies, and the urgent need to diversify our food systems. Dr. Warren T K Lee emphasised that our current agriculture-food systems not only fail to deliver healthy diets and essential nutrients but also hold the key to addressing these challenges.

Beyond raising awareness about global food security challenges, I realised that a collaborative effort is essential to tackle these issues and provide nutritious food to people worldwide. Farmers, industries, scientists, and governments must come together or, at the very least, focus on their respective roles to drive improvement.

As a PhD student in plant biotechnology, I have committed myself to enhancing plant resilience and productivity through my research and efforts. Although my daily work in the laboratory has often been fraught with failures, leading to feelings of anxiety and depression, the opportunity to attend the Crawford Fund conference as a scholar reignited my enthusiasm for agricultural science.

My deepest appreciation goes to Professor Tim Reeves, who served as my unwavering guide on this remarkable journey. Meeting him in person during my solo trip to Canberra was initially nerve-racking, but our conversation was reassuring, enlightening, and heartwarming. Tim’s support extended beyond the academic realm, addressing the often-overlooked emotional aspects of my journey. His introductions and unwavering support fostered an atmosphere of genuine camaraderie at the conference, catalyzing both my personal and professional growth. Tim’s wisdom, particularly his belief in imparting values to others, guided me in unexpected ways, opening doors to invaluable conversations and insights from seasoned experts.

In addition, the unwavering dedication of female scientists and agricultural leaders, such as Dr. Éliane Ubalijoro and Professor Wendy Umberger, has served as a profound source of inspiration throughout this journey.

I also like to extend a heartfelt shout-out to the RAID network, which played a pivotal role in enhancing the conference experience. Their engaging ice-breaking activities and insightful workshops provided invaluable opportunities for mentors and mentees alike to connect on a deeper level. These activities not only fostered connections but also encouraged us to listen to the personal stories and wisdom shared by senior members and RAID participants. It was through these interactions that we gained a deeper understanding of the challenges and triumphs that have shaped their journeys in agriculture and food security. This added layer of connection and shared experiences enriched our conference experience and left a lasting impression on us all.

I am deeply grateful for the opportunity to be a Crawford Fund Scholar and to attend this conference. This experience has not only enriched my understanding of global food security but has also ignited a renewed passion and commitment to contribute to a more resilient and sustainable food system for all. As I move forward in my academic and professional endeavors, I carry with me the lessons, connections, and inspiration gained from this transformative experience, and I look forward to making a meaningful impact in the field of agricultural science.

SOUTH AUSTRALIA SA Crawford Fund Committee Supported Scholars



The 2023 South Australian scholars (left to right) Tayla Blight, Alison Gill, Germàn Puga and Lachlan Jaensch pictured with SA Crawford Fund Committee Coordinator Roger Wilkes.

Tayla Blight, The University of Adelaide

Mentor: Roger Wickes

I thoroughly enjoyed attending the 2023 Crawford Fund Conference as a conference scholar. I found it very inspiring to talk to many passionate researchers dedicated to improving international agriculture.

The conference explored the importance of global food security in a riskier world, including the need for diversification of resilient food and nutrition systems.

It was highly valuable to hear Professor Wendy Umberger's presentation, especially how a farmer's ability to mitigate risks has a compounding effect on food systems resilience and economic stability.

Two key themes I took away from the conference were the importance of crop diversification and the benefits in gathering diverse ideas through specialists from other industries.

Crop diversification is essential as there are many different crops that are underutilised. Many Indigenous crops are hardly grown but can be highly valuable, particularly to small holders. By growing a wider range of crops and increasing those crops that are currently underutilised, it will allow for greater diversity in the food supply chain. These crops are adapted to local climates and are often produced with less resource input, increasing the sustainability of their production.

Specialists from other industries (such as economists, plant scientists and policy makers to mention a few) are also key to food security, as they bring diversity in ideas and perspectives on how our food system can become more resilient. Harnessing their knowledge can be used to manage and mitigate production risk.

One of the Keynote speakers was Dr Cary Fowler, whom during his speech announced the astonishing figure that June 2023 was the hottest month ever recorded globally. This really highlights the significance of climate change and the need to adapt and become more resilient. Crawford Fund Medal winner, Kym Anderson further spoke about how the riskiness of agricultural production is increasing with climate change, as the uncertainties being faced by farmers have concurrently increased. We need to devise new practices to mitigate these risks to continue to meet production requirements.

As an undergraduate Agricultural Science student, my knowledge on international agriculture was limited prior to the conference. Attending the conference provided an excellent introduction into international agricultural development and practices. The conference speakers broadened my understanding and opened my eyes to many of the key challenges faced globally.

A clear message throughout the conference was that the scholars and younger generation are the future for international agricultural research and development. We are needed to make the change for developing countries.

The conference was very well organised with a full itinerary each day, balancing time spent in presentations with many networking opportunities. I have gained an array of networks from scholars, scientists, researchers, and Australian international agencies.

I would like to give a special thanks to my mentor, Roger Wickes for providing invaluable guidance, inspiration, and many industry contacts. I would also like to thank the Crawford Fund and RAID for the opportunity to be a conference scholar. I spent three days in Canberra that has left a lasting impression on how I can contribute to international agricultural development.

Alison Gill, The University of Adelaide

Mentor: Bob Clements

Agricultural researchers and farmers, both in Australia and internationally, will face challenges in providing food for growing populations in the coming years. Coupled with climate change, conflict, and COVID-19, these challenges will increasingly require research for development and diversification both on- and off-farm. I am interested in the responses of crops to climate change, with my PhD research focused specifically on industrial hemp water use and drought resistance. The 2023 Crawford Fund Conference was an invaluable opportunity to learn more broadly about global food security in what will inevitably be a riskier world.

The conference and scholars' program were invigorating, interesting, and rewarding. Both provided unparalleled networking opportunities, with facilitated speed networking, a networking dinner, and scholar-mentor relationships. I appreciated the guidance of my wonderful and knowledgeable mentor, Bob Clements, who introduced me to a range of experienced leaders in multiple areas of international agricultural development and crop research. This unique scholar-mentor relationship initiative worked wonders to connect the younger generation with experienced networks.

A key takeaway for me was the advice to find a specialty in which you are a leader, but to also seek diverse opportunities to expand your knowledge and experiences. Diversifying our skills while remaining leaders in specific areas will be vital for successful careers. Our generation of researchers will need to think critically about specific issues while also considering and addressing broader, global challenges like food security. We were advised to connect with and learn from people in disciplines other than our own, as the collaboration of multidisciplinary teams will be required to solve these global challenges.

I noted the differing opinions on the role of underutilised vs. traditional crops. Dr Cary Fowler mentioned in his keynote that "new" crops will have a place in adapting agriculture to improve food security, while some other, experienced researchers may disagree. For me, this is an interesting debate because it relates directly to my research, prompting me to think critically about the most effective research approaches for advancing food security and how I can make meaningful contributions in the future.

Not only did I learn about international agriculture, but also discovered many opportunities for volunteering and capacity building in developing countries, through ACAIR, RAID, and other programs. One message that was reiterated throughout the conference and scholars' program is to listen to farmers in developing countries and to avoid bringing your own agenda. We were advised to be open and willing to learning from farmers in these countries, rather than seeing it as purely an opportunity to impart our own knowledge.

While it is clear that both on- and off-farm risks will make agriculture an increasingly challenging field, it is also evident that numerous opportunities exist to find resilient solutions. Young researchers attending the 2023 Crawford Fund Conference will certainly be encouraged by the legacies left by influential researchers, as we look forward to making an impact in this industry. For me personally, the conference experience will undoubtedly be pivotal in shaping the trajectory of my career post-PhD.

Lachlan Jaensch, The University of Adelaide

Mentor: Sabi Kaphle

I feel very fortunate to have had the opportunity to attend the Crawford Fund's annual conference in Canberra, titled "Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems". I was honoured to be chosen by the SA Crawford Fund Committee, and I went into the conference eager to learn and meet other likeminded researchers. However, I could not have possibly anticipated just how valuable this experience ended up being for me.

As I am currently studying a Masters of Global Food and Agricultural Business, I found the conference theme was highly complementary to my current studies. Having also previously studied health sciences, I was very intrigued with how nutritional and social science perspectives were going to be represented at the conference. Social sciences have an important role to play in international agricultural research, and at times I feel is underrepresented. It was very promising to see these themes feature prominently throughout the presentations with many researchers of social science disciplines in attendance at the conference.

One speaker who really resonated with me was Professor Kadambot Siddique. Prof Siddique discussed the emerging role of crop diversification and the adoption of Indigenous and underutilised crops to improve the resilience of farming systems. He also discussed how global food systems must consider broader factors beyond the farm (such as the surrounding environment, infrastructure, institutions, and people) to achieve nutritional outcomes and dietary diversity.

After hearing such detailed discussions of the many challenges faced with improving global food security, it could be easy to become disheartened and overwhelmed. However, I came away from the conference with a refreshed interest and passion to help smallholder farmers and those living in rural communities. Other takeaway lessons from the conference were the importance of adopting a transdisciplinary and systems thinking approach to big issues.

I have always been interested in agriculture, travelling, and helping others. As a result, international agricultural research for development always appealed to me but I felt opportunities to become involved were out of my reach. The scholar activities organised by The RAID Network were incredibly informative, and demonstrated to me the various ways I can become involved in international agricultural research for development. Additionally, the scholar activities provided a great chance to meet and network with other likeminded early career researchers. The diversity of our backgrounds and research disciplines made for very interesting discussions and has added some quality contacts to my professional network.

I am truly thankful for having the opportunity to attend the conference and the organised scholar activities. I would like to thank the Crawford Fund's SA Committee for sponsoring me to attend, the RAID Network volunteers for organising the scholar activities, my mentor Dr Sabi Kaphle for her guidance and encouragement throughout the conference, and to Cathy and Larissa for all their work. This is an experience I will not soon forget.

Germàn Puga, Centre for Global Food and Resources, University of Adelaide

Mentor: Neil Byron

I am very grateful to the Crawford Fund for supporting me with a scholarship to attend their 2023 conference in Canberra. This has been a fantastic opportunity to learn more about international agricultural development and how to pursue a career in this area.

My learning process started at my interview with the Fund's South Australian Committee when they asked me to name the CGIAR centres. I was very embarrassed about being only able to name a few. I was already following all CGIAR centres on LinkedIn, but the fact that I could not name them made me realise I should do more research on the international institutions driving agricultural development. That led me to learn more about this topic before the conference. But the real learning started in Canberra the day before the one-day conference. There, I met my mentor, Dr Neil Byron. He has a strong background and experience in international agricultural development as well as in climate change economics. My main area of expertise is the analysis of climate risks and adaptation strategies, and that is a potential way in which I sometimes aspire to land into international agricultural development. As such, Dr Byron was able to give me extremely useful advice.

The first scholars' day of activities was very good. We had the opportunity to hear from very experienced researchers, all sharing advice on the same topic: how to pursue a career in international agricultural development. Perhaps more importantly, there were multiple opportunities to network with the speakers, as well as with other scholars and their mentors.

We then went to the conference dinner, where we were able to hear insightful speeches and network with other attendees. The highlight was the one-day conference the next day, where we heard from well-known speakers. The conference program has been covered well, even in the media, so I will not comment on it. Instead, I want to mention something that fascinated me. That was how nice the senior attendees of the conference were when I approached them, and how helpful they were in sharing insights and information.

After the conference, we had a more relaxed quiz night with the other scholars. The topic was, of course, international agricultural development. That made this quiz night the best I have been to – far better than the typical spectacle-centred quiz nights that are usually featured in most bars.

The networking with scholars extended to the next day when we had the opportunity to get to know each other even better. At the same time, we also heard stories from speakers working in international agricultural development. The difference with the first scholars' day was that we also heard from a journalist on how to publicise our research, as well as from less senior people working in the field. I am very grateful to the Crawford Fund for this experience. In particular, I thank Roger Wickes and the other members of the South Australian Committee for this opportunity. I also thank Cathy Reade, Larissa Mullet, and RAID members for organising the scholars' program.

TASMANIA TAS Crawford Fund Committee Supported Scholars



Our 2023 Tasmanian scholars (left to right) Haydn Tracey-Shaw, Yashkumar Desai, Maria Ortiz, Joanna Talbot and Sarah Roberts pictured with Richard Warner Crawford Fund Tasmania Chair and Board Member, and Tasmanian Crawford Fund Committee Coordinator Neville Mendham.

Yashkumar Desai, University of Tasmania

Mentor: Neville Mendham

Prior to attending the Crawford Fund's Annual Conference, my understanding of agriculture was limited to crops, plant science, and soil studies. However, this conference opened my eyes to the broader scope of agriculture, including global grain supply and the critical role it plays in ensuring global food security.

The Crawford Fund stands out for its dedication to promoting the impact and benefits of research in the field of food and nutrition security. Participating in the conference was a remarkable experience. This conference united leading experts in agricultural science, research, policy, and development, demonstrating the Crawford Fund's commitment to fostering the next generation of researchers in international agriculture.

I would like to express my gratitude to the dedicated mentors who generously offer guidance and support to scholars during the conference. I was one of the fortunate scholars from the University of Tasmania to attend the 2023 Crawford Fund conference, supported by the TAS Committee. The conference theme, “Global food security in a riskier world,” highlighted the critical issues impacting food security worldwide.

The conference featured high-quality sessions and speakers who addressed the challenges and opportunities in food security. Insights from experts like Dr. Cary Fowler, Kym Anderson, and Dr. Ubalijoro underscored the urgency of addressing global food security through resilient crops, research, and innovative partnerships.

The scholar event, organised by the RAID Network, promoted collaboration, and understanding among scholars, opening doors to future partnerships, and learning opportunities.

My experience at the Crawford Fund's Annual Conference was truly enlightening. It was a fantastic journey into the world of food security and agricultural innovation. I had the opportunity to learn from experts, receive mentorship, and share a common vision for the future of global agriculture. This experience has sown the seeds of change in my academic path, nourished by the wisdom of experts, and I'm eager to cultivate the fruits of global food security in the years to come.

Maria Ortiz, University of Tasmania – TAS Farm Innovation Hub

Mentor: David McGill

Attending the Crawford Conference was a privilege, the conversations during the scholar days and at the conference influenced me deeply as an early career professional. I was able to broaden my perspective of agriculture as well as value my contribution to food security.

The topic of the conference: Global Food Security in a Riskier Environment: Diversification for Resilient Food and Nutrition Systems exceeded my expectations; contextualising this topic in such a timely and dynamic manner was certainly achieved during the conference and the conversations. Discussions around career opportunities in international agriculture filled me with excitement and urgency of contributing more than even to the development and sustainability of food systems. The conference topics and speakers did an amazing job in integrating climate change, social challenges, and food production priorities in the presentations.

The topics and discussions of this conference have contributed to my current professional role, as well as nurture the professional I want to be during my career. The kindness and commitment to early career professional development during all the days of the conference was overwhelming, attending this conference emphasised what I have been intending to incorporate in my daily work: that we are in the business of feeding the world and nurturing our planet while we are doing so.

Coming from a developing country and hearing about all the great work that is happening in international agriculture development motivates me to get involved as well as contribute to the generation of knowledge in the country I now call home – Australia – to be able to share this with the rest of the world.

Having moved to Australia six years ago as a veterinarian it has been a journey to find my feet back as a professional, before I attended the Crawford Fund conference I wasn't even sure on how I could contribute to the bigger picture of food production and if my knowledge and skills were contributing to the current work I am involved in, the conference and everyone I met throughout the day made me realise that every action that I do every day working in agriculture contributes and adds value to achieving sustainable and accessible food security for the entire world.

I couldn't be more grateful about the opportunity I had to participate as a scholar, where I not only had access to the conference but also to an amazing mentor that opened my mind to a bigger and amazing picture of what it means to work in agriculture with passion and commitment. I want to tell the entire world about the Crawford Fund and hope to be involved in the conferences every year for the rest of my career in agriculture and animal health.

Sarah Roberts, University of Tasmania

Mentor: Anna Mackintosh

The 2023 Crawford conference was an incredible experience, and one I am very grateful to have been given the opportunity to attend. This year's conference centred around food security systems in the face of conflict, covid and climate change. This was a highly relevant topic, and it was very fascinating to see how different speakers and conference attendees addressed these issues.

The conference outstripped my expectations greatly by providing not only an opportunity to listen and speak to a number of key figures in the food security sphere. But an amazing opportunity to interact with other conference attendees at mealtime discussions and in guided group activities. As a second-year undergraduate student this provided me with a unique opportunity to gain insight into the various research and career pathways available.

One of the most enjoyable and fruitful aspects of the Crawford conference was the various discussions I had with Crawford Fund attendees, especially as there was such a large range of early to late career and research figures. The conference also opened my eyes to some of the prominent Australian agricultural companies involved in international agriculture. I also had the pleasure of being introduced to aspects of agriculture I had not considered before, such as the media consideration for researchers and the role of women in international agriculture.

Furthermore, the curated atmosphere of the conference was incredibly welcoming and allowed for easy mingling regardless of accolades. My ability to smoothly integrate with conference attendees was greatly aided by my mentor Anna Mackintosh. I would like to thank her for being such a helpful and friendly presence to me during the conference and the scholar activities. I would also like to thank everyone involved in funding or organising the scholarship program for the conference. Attending the conference was an incredible opportunity and I would highly recommend it to anyone interested at any stage of their university studies or career.

Joanna Talbot, Tasmanian Institute of Agriculture, University of Tasmania

Mentor: Peter Wynn

Wow, what an opportunity... Attending the Crawford Fund conference as a scholar was an unexpected opportunity for me. I initially had doubts about my eligibility due to my age. To my surprise, I received an email congratulating me on being selected as a scholar. This report is a reflection on my incredible journey at the Crawford Fund conference, where I had the privilege of connecting with industry professionals, learning from distinguished speakers, and gaining insights into global food security challenges, sustainable agricultural practices, and the critical significance of healthy soils and adapted crops.

One of my initial concerns attending the conference was not knowing anyone. Thankfully, I had the guidance of my mentor, Peter Wynn, who played a central role in ensuring my comfort and readiness for the event. A week before the conference, I reached out to Peter, and his reassuring kindness, confidence, and extensive knowledge of agricultural research immediately put me at ease. He not only guaranteed a warm welcome but also committed to introducing me to industry experts, significantly boosting my confidence.

The conference's theme, "Global Food Security in a Riskier World," resonated with its timely and thought-provoking nature. Throughout the event, we had the privilege of hearing from inspirational keynote speakers who generously shared their insights into international agricultural research for development. Among them, Dr. Eliane Ubalijoro stood out. Her presentation included the role of gene banks in preserving biodiversity and safeguarding genetic diversity for future generations. She emphasised the contributions of the Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), CIFOR is a non-profit, scientific institution that conducts research on forest and landscape management globally. Seeds represent a lifeline for restoring ecosystems and ensuring food security, especially in regions scarred by conflicts such as the Rwandan genocide. Dr. Ubalijoro's message highlighted the significance of gene banks as guardians of genetic diversity, serving as a biological insurance policy for our planet.

The discussions during the conference emphasised that achieving food security relies on fertile soil and adapted crops. In regions like Africa, facing a growing population, addressing issues related to poor soils and non-suited crops is of utmost importance. The State Department's vision for Adapted Crops and Soils (FACTS) in Africa, with its focus on improved soil mapping and analytics, was presented as an important approach. The conference also stressed the pressing need to combat soil erosion in Africa, a threat to long-term food security. It was acknowledged that soil health is fundamental to sustainable agriculture.

One of the significant aspects of my participation in the Crawford Fund conference was the opportunity to network with fellow scholars, postgraduate students, and industry leaders. These interactions deepened my knowledge and extended my understanding of agricultural research and development. Learning from peers and experts in the field further motivated me to make a more impactful contribution to the agricultural community.

My experience at the Crawford Fund conference in 2023 was extremely informative. It deepened my understanding of global food security challenges reinforcing the critical importance of nurturing healthy soil and cultivating adapted crops and highlighted the important role of gene banks in preserving biodiversity. As part of my goals for the year, I am committed to sharing my conference experience with colleagues and encouraging their participation as scholars in future events. I firmly believe that everyone should have the opportunity to attend such a conference as it will not only develop your professional goals but also contributes to the effort of ensuring global food security in an increasingly uncertain world, safeguarding our planet's biodiversity, and preserving its genetic heritage. I would like to thank the Tasmanian Crawford Fund committee for offering me this opportunity.

Haydn Tracey-Shaw, University Tasmania

Mentor: Richard Warner

As a first-time attendee at the Crawford Conference, I arrived with high hopes and anticipation. Unlike the seasoned veterans, this was my inaugural experience, and I was starting my journey as a first-year undergraduate student. My expectations were modest, yet they were exceeded in every way possible. Having a limited understanding of the Crawford Fund and RAID, I was eager to immerse myself in the world of agricultural research and development. My primary goals were to absorb as much knowledge as possible and to explore the potential opportunities that lay ahead in this field. The organisation of the conference and scholar activities was impeccable, a feat that I greatly appreciated as a newcomer. It was no small task to coordinate such an event, and it allowed me to immediately engage with fellow scholars, students, and researchers. What struck me the most was the diversity of attendees, with professionals from various industries adding depth to the discussions.

The conference was a revelation, with speakers opening my eyes to the larger world of agricultural research, its significance, and the future path. Having an interest in waste management and logistical issues facing agriculture, I was highly interested to hear about developments in policy and innovations that will encourage a new future for international agriculture. I walked away from the event with a different mindset and bigger ideas that I look forward to challenging in the future.

As the conference ended, the RAID event provided a welcome opportunity to relax, process the wealth of information I had gathered, and build connections with newfound friends. The final day of scholar activities fostered lively discussions and the sharing of perspectives, further enriching my experience.

To conclude, I must express my profound gratitude to Mr Richard Warner, the chair of the TAS Committee, who graciously volunteered his time to be my mentor. His knowledge, guidance, and encouragement were invaluable to me as a first-year undergraduate student, and I am truly honoured to have had the opportunity to learn from him. The mentorship aspect of the Crawford Conference experience I found highly beneficial and thankful for taking the time to attend. I will be recommending this program to my classmates and anyone else wanting to have a larger appreciation of global agriculture.

VICTORIA

VIC Crawford Fund Committee Supported Scholars



Victorian scholars (left to right) Danielle Yiden Tang, Quintin Murphy, Louise Walker and Emma Gillingham pictured with Tim Reeves Crawford Fund Board Member, VIC Crawford Fund Committee Coordinator Bill Lewis, VIC Committee Chair Tony Gregson and VIC Committee Members Brendan Rodoni and Mellissa Wood.

Emma Gillingham, La Trobe University

Mentor: Dr. Roya Khalil

The topic for The Crawford Fund Conference for 2023 was 'Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems', and I was fortunate to attend as a Victorian scholar. In his opening address, the Honourable John Anderson AC, Chair of the Crawford Fund, spoke with admiration to the real-world progress achieved by agricultural research, and with optimism toward our ability to solve the problems of the future.

This address set the tone for a conference which was equal parts enquiring and inspiring, and an environment where scholars were immersed in the experience of leaders in agricultural development.

From keynote speakers including Dr. Cary Fowler, U.S. Special Envoy for Global Food Security, and Dr. Éleine Umbalijoro, CEO of CIFOR ICRAF – we heard about the need to spread ourselves across disciplines to understand increasingly complex global food networks. Of note was the emphasis on flexibility and adaptability for the robustness of food supplies, particularly in the wake of COVID-19 and conflict in Ukraine. This was reiterated by Crawford Fund medallist, Emeritus Professor Kym Anderson AC, who drew attention to the increasing uncertainty in economic markets over the past decade, and the impact this will continue to have on the efficacy of support provided to agricultural systems in developing countries.

As an early career scientist and researcher, it was thought-provoking to hear from panellists who reiterated that cultural sensitivity and cooperative efforts with local communities were inextricably tied to measures of success for international agricultural collaborations.

Scholars were privy to advice from Mike Foley, correspondent at The Age & The Sydney Morning Herald, and Dr. Anika Molesworth who spoke to the importance of communicating research through the media, and echoed the sentiment that food security is a story which resounds from the everyday lives of individuals. It was particularly interesting to hear from Ben Fargher, Cargill APAC, and Dr. Roya Khalil from Incitec Pivot Fertilizers, about how industry progress will depend on the profitability and efficacy of sustainable logistics and products across the agricultural sector.

I would like to extend my sincere thanks to The Crawford Fund, and conference organisers for providing this opportunity. As scholars, we were afforded opportunities to network with professionals across many industries, and from every corner of the globe.

As a PhD candidate in the field of molecular biology and plant nutrition, it was valuable to step outside my discipline, and has provoked an interest in the economics of international agricultural development which will extend beyond the conference. Securing global food supplies will require us all to look beyond our own expertise, and The Crawford Fund conference set an example of how this can be achieved.

I look forward to attending again and drawing from the wealth of knowledge in attendance. Special thanks to Bill Lewis, Victorian co-ordinator of The Crawford Fund, for the invitation to attend as a scholar for 2023, and to Dr. Roya Khalil – who provided invaluable mentorship throughout.

Quintin Murphy, Charles Sturt University

Mentor: Bill Lewis

The 2023 Crawford Conference explored the theme of "Global food security in a riskier world". The conference, and the scholarship program was thought-provoking experience that opened my eyes to the world of agriculture for global development. My key takeaway from the conference is that we are living in an age of great change which puts pressure on global food security, but with these challenges comes opportunities and agriculture, as an industry, is key to solving these challenges.

The scholar program was a great opportunity to explore international agricultural research and get to know the other scholars and mentors. The excitement and passion for international agriculture from the other attendees has inspired me to explore the possibilities in international agriculture for development.

Some of the key takeaways from the scholarship program were:

- There are a lot of opportunities in international development.
- Be open to opportunities but have a plan for where you want to go.
- Be ready to take risks and talk to people about what skills are needed and develop those skills for yourself.

Another part of the scholar program that I enjoyed was the speed networking sessions and the trivia night. This was something that I was very hesitant about, as I often get quite nervous in these situations, but I found that these sessions were ran very well and it really helped me overcome my nerves.

Another highlight was the conference itself; the day was packed with inspiring speakers and thought-provoking discussions. Some of the highlights from the day were:

- Dr Cary Fowler's keynote speech on creating global food security.
- On-farm risks for resilient food and nutrition systems by Prof. Wendy Umberger.
- The Conversation on policy settings for risk and resilience, moderated by The Hon John Anderson between Dr Cary Fowler, Prof Wendy Umberger, Emeritus Prof Kym Anderson and Dr Eliane Ubalijoro.

My key learnings from these talks are diversification. If we are to adapt to the challenges facing the world, we need to address on-farm and off-farm risks and diversify farming systems. This includes finding different cropping species that are adapted to local conditions and soil types. The conference has opened my eyes to the world of international agricultural research and the possibilities that I am excited to explore in my future.

Looking forward, I am joining the RIAD network to keep informed and connected with future opportunities. As I am studying my undergraduate degree, I will explore opportunities to be involved in international agriculture research in my future studies.

I would like to say a special thank you to my mentor: Bill Lewis, who encouraged me, and pushed me to make the most of the conference and the Vic committee for sponsoring my place at this conference.

Louise Walker, La Trobe University

Mentor: Brendan Rodoni

I am just six months into my PhD, and this experience as a Crawford Fund scholar has me so excited by the possibilities ahead. The conference and scholar days has encouraged me to ensure my research is meaningful and applicable to farmers and consumers across the world.

The theme for the conference; diversification for resilient food and nutrition systems, spoke dearly to my research passion which is ensuring the quality plant grains under climate change, while emphasising the environment. The speakers presented interesting insights from on-farm and off-farm perspectives. A major take away from these talks was that no one fix will be the answer. Any farming system, whether industrialised or smallholder run, are under the same pressures of the 3C's, however each have their own intricacies. When it comes to working with breeders, farmers, processors, retailers, consumers, policy makers and current law, all aspects of the value chain must be considered before planning a strategy to increase food security resilience successfully and sustainably in that system.

A point emphasised across the three days, is that to achieve successful and sustainable results in a farming system, another 3C's must be implemented, collaboration, consultation, and communication. No one breeder, social scientist, farmer, or politician will know the best way forward. It is essential, that we work together to face these radically challenging and dynamic environments ahead of us.

These ideas around and understanding of the value chain has helped me immensely in the broader scope of my own research. My study starts closer to the end point of the chain, investigating grain quality changes after heat and drought events. The start of this, may be farmer decisions to grow grain at certain times, responding to the environment, choosing certain cultivars, growing for tradition. There is a wealth of factors that influence the decision to grow, harvest and sell grains across the world, and these factors should be considered when investigating the final product.

This conference has helped me delve into the flow on implications of grain quality changes and how my results could influence farming systems within and outside of Australia in different ways.

The two scholar days bought a great contribution to my time with the Crawford Fund in Canberra. Getting to know the other scholars was priceless. We are all in similar, yet vastly different walks of life with a common interest in quality food for the future. The sessions of the scholar days were unlike any other talks or presentations I have heard. The discussions on media, working abroad, funding and taking a leap from those with experience were second to none.

I thoroughly enjoyed my time as a Crawford Fund Scholar, making a wealth of new friends and connections. I am so excited to see what is next.

Danielle Yidan Tang, The University of Melbourne and Agriculture Victoria

Mentor: Tony Gregson

Participating in the Crawford Fund Conference on "Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems" was a profound and transformative experience that has left an indelible mark on my journey as a last-year PhD candidate in partnership with the University of Melbourne and Agriculture Victoria. This reflection encapsulates the key facets of my experience and the invaluable lessons I've garnered.

First and foremost, I must acknowledge the extraordinary privilege and luck that allowed me to be part of this international conference as a scholar.

As I walked into the conference venue, the realisation of being surrounded by esteemed experts, passionate scholars, and renowned figures in the field of agriculture and global food security was overwhelming. It was a privilege I did not take lightly.

One of the most enlightening aspects of this experience was my mentor, Dr. Tony Gregson. His mentorship extended beyond mere guidance; he connected with me on a personal level and shared his wisdom. Through him, I had the honour of being introduced to influential figures whose work has a profound impact on global food security. These connections were empowering and inspiring, shaping my aspirations for the future.

What set this conference apart was the exceptional care provided to attendees. The organisers not only facilitated an environment for learning but also encouraged networking with prestigious experts. The opportunity to engage in candid discussions with individuals I would never have crossed paths with under normal circumstances was invaluable. These interactions broadened my horizons and deepened my appreciation for the diverse perspectives in the field.

The conference's comprehensive coverage of topics, ranging from international agricultural development to addressing food security challenges in the face of the 3Cs – Covid, Climate Change, and Conflict – expanded my vision. It made me acutely aware of the myriad opportunities available for passionate graduates like me to contribute meaningfully to global food security and resilience.

Dr. Tim Reeves' insights into the essential and specialised skillsets required in agriculture resonated deeply with me. His wisdom encouraged me to further commit to my research pathway, focusing on precision agriculture. I left the conference with a renewed determination to acquire the expertise needed to "bring it to the table" and make a tangible difference in the lives of farmers and food systems.

The connections I forged with fellow aspiring young professionals from diverse backgrounds are perhaps the most cherished aspect of this experience. The camaraderie and shared enthusiasm for addressing global food security challenges were palpable. These relationships are not just valuable; they are a testament to the power of collaboration and shared commitment to a common cause.

One of the conference's most impactful revelations was the RAID network and its mission to help developing countries as partners rather than closed-minded practitioners. Hearing stories from volunteers and organisers about their efforts underscored the importance of global solidarity and knowledge sharing.

Moreover, the conference featured remarkable speeches that added depth and insight to the discussions. The speech by the ACIAR CEO, Professor Wendy UMBERGER, highlighted the critical role that risk and vulnerability play in global challenges, emphasising their compounding effects on food system resilience. This profound perspective served as a wake-up call, emphasising the urgency of addressing these underlying issues to build a more resilient future.

Furthermore, experts like Dr Warren Lee, Professor Kadambot Siddique, and others delved into the nutrition aspect of food security. Their discussions emphasised the importance of diversifying diets with a wide array of plants to support human well-being. This perspective added depth to the concept of food security, underlining the significance of not just the quantity but also the quality of the food available to people worldwide.

Most importantly, the speeches and panel discussions by Dr Cary Fowler were both motivating and enlightening. Dr Fowler shared his reflections on past practices and the vital lessons to be learned from them, proposing new strategies for African countries to explore the potential of indigenous plants and stating that food systems are evolving based on nutrition. His insights were a clarion call, reminding us that the path to food security and resilience requires adaptability, innovation, and a deep commitment to learning from both successes and failures.

In conclusion, my experience as a mentee at the Crawford Fund Conference was enriched by these speeches and takeaways. They emphasised that addressing the root causes of global challenges, diversifying diets for nutrition, and learning from the past are essential components of building resilient food and nutrition systems.

As I move forward in my research on preharvest spatial mapping tools for Wimmera pulse growers, I will carry these lessons with me, striving to contribute to a more resilient and nourished world. The privilege of attending this conference, combined with the wisdom shared by mentors and the connections made, has fortified my resolve to make a meaningful difference in the realm of global food security.

WESTERN AUSTRALIA WA Crawford Fund Committee Supported Scholars



Our 2023 Western Australian scholars (left to right) Christophe d'Abbadie, Md Shahinur Rahman and Harrison Keymer, pictured with WA Crawford Fund Committee Coordinator Em Prof Lyn Abbott and WA Crawford Fund Committee Chair Dr Mark Sweetingham.

Christophe d'Abbadie, Department of Primary Industries and Regional Development WA

Mentor: Di Mayberry

Participating in the 2023 Crawford Fund Annual Conference, which revolved around the theme of “Global Food Security in an Increasingly Uncertain World: Enhancing Resilient Food and Nutrition Systems,” was an exceptional opportunity for me. Being selected as one of the scholars to attend this conference was a privilege that I deeply appreciate. This experience has not only broadened my perspective but has also deepened my understanding of the challenges associated with global food production and the imperative of ensuring future food security worldwide. Moreover, it has reaffirmed the significance of my agricultural research endeavours and instilled confidence in my future pursuits.

The Scholar Program offered during the conference was truly outstanding. It provided a unique chance to connect with seasoned professionals, fostering a profound passion for generating impactful results in international development through research and work. The roster of distinguished speakers at the conference not only expanded my knowledge but also ignited a deeper interest in addressing global challenges.

Furthermore, the mentoring aspect of the program was pivotal in my professional development. My mentor proved to be an invaluable guide, facilitating introductions to other professionals and engaging in insightful discussions about the implications of my work for international development. Their support and guidance greatly contributed to advancing my research and career aspirations.

The entire conference and Scholar Program have played a pivotal role in enhancing my understanding of critical global issues and expanding my network. The conference acted as a convergence point, bringing together individuals from diverse backgrounds, each contributing a unique perspective on global challenges. Through engaging conversations, both within and outside of formal conference sessions, I had the privilege of forging meaningful connections with professionals, researchers, and experts in the field. These connections have already proven to be valuable assets, providing opportunities for collaboration, knowledge exchange, and potential partnerships in the future.

Beyond the immediate networking advantages, the conference and Scholar Program encouraged me to think globally and holistically about the impact of my work. They reinforced the notion that addressing complex issues like international development and food security necessitates a multifaceted approach and collaboration across disciplines. As I continue my journey in the field of agriculture and international development, I carry with me not only a wealth of new knowledge but also a network of passionate individuals committed to making a positive difference in the world. This experience underscores the importance of events like this in fostering innovation, understanding, and collaboration in our collective pursuit of a more sustainable and secure future for all.

Among the many enlightening sessions at the conference, two talks particularly stood out to me as exceptionally relevant and impactful. The first was Professor Wendy Umberger's discourse on “On-Farm Risks for Resilient Food and Nutrition Systems.” Her insights were not only deeply encouraging but also insightful, shedding light on how on-farm risks significantly influence decision-making processes for farmers. Professor Umberger's ability to delve into the intricate dynamics of risk management within agriculture was captivating, underscoring the need for resilient systems to ensure food security.

The second talk that left a lasting impression was delivered by Emeritus Professor Kym Anderson on the topic of “Addressing Off-Farm Impediments to Global Food Security.” This presentation illuminated the critical role of supply chains in the broader context of food production. Professor Anderson's discussion underscored the undeniable importance of addressing off-farm challenges and impediments to ensure the smooth functioning of global food supply chains, thereby contributing to the overarching goal of achieving global food security. These insights have enriched my understanding of the complexities within the food production landscape and will undoubtedly inform my future research and efforts in the field of agriculture and food security.

In conclusion, my participation in the 2023 Crawford Fund Annual Conference and the Scholar Program was a transformative experience. It not only expanded my knowledge and network but also reinforced my commitment to addressing the global challenges of food security and international development. The conference served as a catalyst for collaboration and innovation, reminding me of the collective responsibility we bear in ensuring a sustainable and secure future for all. I am deeply grateful for this opportunity, and I look forward to applying the knowledge and connections gained to make a meaningful impact in the field of agriculture and food security.

Harrison Keymer, The University of Western Australia

Mentor: Vivienne Anthony

It was an immense privilege to attend the 2023 Crawford Conference, themed “Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems.” It was a truly transformative experience. In a world gripped by uncertainty, maintaining clarity and optimism when contemplating future academic and career aspirations can be challenging. However, I now feel better equipped to effect positive change in these endeavours because of the invaluable learnings and network connections the conference has provided.

I was extremely privileged to be matched with Vivienne Anthony from the Syngenta Foundation for Sustainable Agriculture as my mentor, who was amazing in facilitating my learning and networking throughout the scholar and conference activities. Viv imparted some of her boundless wisdom and reinforced to me the importance of whole-system and critical thinking approaches. I felt supported and encouraged to ask questions and strike up conversations with some of the most pre-eminent thinkers in international agricultural development—who were always more than happy to chat.

Being part of such a diverse scholar cohort enriched the experience further, as I gained insights from fellow scholars and learned about their backgrounds and experiences. It was inspiring to talk with like-minded individuals who are early in their careers and so passionate about sustainable development and food systems. The scholars’ days activities provided invaluable advice and guidance for our future endeavours in agricultural development. It was eye-opening to hear about the plethora of avenues, including volunteering and research opportunities through the Crawford Fund, ACIAR, and RAID.

The broad range of speakers and topics were stimulating, and it was fascinating to hear some of the same themes raised throughout the different presentations. As a social sciences student, I was particularly delighted to hear the importance of social sciences and cross-disciplinary approaches in tackling complex and wicked problems. Connections and collaborations were noted as a key tool for achieving global food and nutrition security, including by CEO of CIFOR-ICRAF Éliane Ubalijoro. Éliane’s Sir John Crawford Memorial Address highlighted the need for global partnerships and collective approaches to feeding the world, and her personal story was inspiring.

The opportunity to engage with leading thinkers in international agricultural development was nothing short of incredible. It was inspiring to hear Dr. Cary Fowler, U.S. Special Envoy for Global Food Security, emphasise the fundamental importance of healthy soils as the foundation for feeding the world’s population, reminding us to “get back to basics” to tackle food insecurity. In a world often fixated on technological innovation and engineering our way out of problems, this perspective was refreshingly grounded.

The framing of “on-farm” and “off-farm” risks and solutions during the conference was effective and useful for conceptualising global food and nutrition security. The presentations of various solutions, including Prof. Kadambot Siddique’s underutilised crops, provided practical examples of how research can make a real difference in the lives of those facing food insecurity.

This quote from Dr. Cary Fowler’s keynote presentation resonated with me, and it nicely summarises the main takeaways from my experience as a Crawford Scholar: “I think we have to be ambitious and aspirational and perhaps go for a few Moon shots.”

Md Shahinur Rahman, Department of Primary Industries and Regional Development WA

Mentor: Lyn Abbott

Attending the Crawford Fund Annual Conference 2023 Focusing on “Global Food Security in a Riskier World: Diversification for Resilient Food and Nutrition Systems” was one of the finest opportunities to meet, greet, network and learn from world-leading scientists and researchers. I consider myself lucky and blessed to be selected as one of the scholars to attend this conference. This conference has broadened my vision and widened my understanding of the world’s food production systems and the challenges we will face to ensure future global food security. As a young scientist, it helped me to realise the significance of the agriculture research I am doing and boosted my confidence for future endeavours.

All the conference sessions were very informative and inspirational for young scholars. Listening and meeting Dr Cary Fowler and learning about the importance of indigenous crops and his contribution to securing more than one million unique crop varieties, the biological foundation of agriculture and the raw material for all future plant breeding and crop improvement efforts was magnificent. Learning about future smart crops to improve dietary diversity and fight hunger and malnutrition from Professor Kadambot Siddique, UWA was exceptional. Learning about insect farming and how it might contribute to economic development and recycling food waste presented by Dr Fathiya Mbarak Khamis was promising. I left with the understanding that the importance of collaboration and interdisciplinary research is unbeatable. Knowing about Dr Éliane Ubalijoro’s story and how she progressed while facing immense difficulties was inspirational and motivational and left me with an understanding of the power of dedication in life.

Two things that struck me hard were: i) 70% of current food production needed to be increased by 2050 to feed the global population and ii) the number of children suffering from malnutrition and stunting growth age below five.

These two things I believe will be enough to push me to keep going and contribute to agricultural research. I really appreciate the amount of commitment and effort that ACIAR is putting forward to contribute the agricultural research development in underdeveloped and developing countries. I wholeheartedly believe this input by ACIAR will significantly contribute to ensuring global food security.

Knowing what has already been done and what needs to be done is unavoidable to contribute to future research. The Crawford Fund conference has provided an excellent platform for that by gathering all the prominent seniors, mid-career and young scholars to close that loop and create a bridge among them. Introducing mentors for young scholars was one of the finest ideas to link among the group. I must appreciate the assistance I received from my mentor Emeritus Professor Lyn Abbott, UWA to build that network.

Lastly, organising one and a half days of dedicated sessions for young scholars has made the Crawford Fund conference unique to me. It facilitated knowing and networking with my future colleagues/team to battle the immense challenges together that are lying ahead. I am highly pumped and look forward to working together to ensure global food security.



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