



Scholar Reflections from...

New South Wales

2019 Crawford Fund Annual Conference



Ten scholars from New South Wales attended the 2019 Crawford Fund conference. Five were supported by our NSW Committee, two each were supported by the Graham Centre and the University of New England, and one was supported by Southern Cross University.

Our competitive Conference **Scholarships** are offered to young people with a genuine interest in international agricultural research and development to attend the conference and participate in a special set of activities that we have developed since the program commenced in 2010.

Once again, we would like to thank our wonderful mentors, mentioned alongside the scholar they supported, who volunteer their time and offer valuable guidance, support and insights to the scholars throughout the conference.

NSW COMMITTEE SPONSORED SCHOLARS

Francesca Earp, *University of Sydney*

Mentor: Emma Zalcmán, *Ausvet*

The opportunity to attend the 2019 Crawford Conference ignited an 'impatient optimism' within me. I left with a sense of positivity about the future of agriculture and development, motivated to make positive change.

I have been working in Laos as a member of the Mekong Livestock Research Group, through The University of Sydney since 2018. First joining the team during my honours project working on an Australian Center for International Agricultural Research (ACIAR) project with The University of Sydney and The Department of Livestock and Fisheries. Since then I have continued working with the team, living in Laos as an in-country implementation officer whilst also completing a PhD with the project.

I have loved working in country becoming passionate about food security, female farmer empowerment and improved education as part of agricultural development projects.

Working in country can be daunting at times, with problems seeming too big for one person, one project or one program to fix. As I've lived in country, I have learnt to celebrate the small wins. Attending the Crawford Conference reminded me of this. The conference, despite its focus on 'the Perfect Storm' was surprisingly uplifting. Providing speakers, scholars, attendees and mentors with a space to discuss the real and tangible difference we can all make.

In a world that asks us to make a difference, the Crawford Conference reminded us to say yes. That female farmer engagement is more than just a buzzword, affirmative action is bigger than just waiting for policy to change and that sustainability is achievable.

I was moved by Keynote Speaker, Sarah Barker who made the comment 'the world can not continue to expand as it currently is'. Rather than being a critical reflection of the current status quo I saw this as an invitation, an opportunity to be better. Agricultural development must ensure that we focus on sustainability as well as food security, something I myself had lost sight of in the task at hand. It is our responsibility to provide the best agricultural development possible, ensuring that we take into consideration our current global context. We are living in a new world, one that must consider its impacts on environmental sustainability in order to survive.

I was inspired by the discussion of the agricultural and industrial revolution that started with Keynote Speaker; Sir Charles Godfray and carried all the way through to Sarah's address. The world has undergone revolutions before, and it can undergo them again. Just because we cannot continue as we currently are does not mean we cannot continue at all. We can always make positive and influential change.

I was honored to have the opportunity to attend the Crawford Conference as a 2019 scholar and I am excited to engage in the challenge the conference has set. I aim to see my own work in a new light, accepting my responsibility to make positive change whilst using myself as a vehicle for the message of change.



Angus Mitchell, *University of Sydney*

Mentor: David Gale, *Plant Health Australia*

The Crawford Fund 2019 conference was all about the big picture - about how we can weather the 'Perfect Storm' taking into consideration the Agriculture, Energy, Water, Climate Change Nexus. As an engineer, this is was a change of pace for me. The conference helped me understand that agricultural engineers can no longer relegate the complexities of agricultural development into a few sentences in the beginning of our abstracts. Rather, the complexities of international agriculture and nexus thinking need to make their way into every aspect of our work, from project foundation to programme delivery. The conference also provided amazing networking opportunities through ample networking sessions and breaks, and through the RAID careers development and networking events. This allowed me to connect and converse with academics and professionals from a wide variety of sectors and institutions. I'm still in contact with many of these people and have found this connection invaluable.

If we are to weather the 'Perfect Storm', we can no longer work in sector and institutional 'silos'. Instead, we must work in collaborative and interdisciplinary partnerships. This was highlighted by Dr Aditi Mukherji's work, examining the impact of the 'green revolution' on Indian groundwater and energy resources. This was a poignant example of the consequences of a failure to collaborate across sectors. Charles Godfray also highlighted this through his work on changing diets, emphasising the need for locally sourced and culturally relevant solutions such as the 'flexitarian' diet. For me these and other speakers brought home a message of needing to move beyond food security - to something closer to 'food sovereignty' - with aims to provide ecologically sound, locally determined and culturally appropriate diets rather than just sufficient calories.

The networking opportunities were plentiful. There was always someone interesting to approach, and always enough time to do so. This is important to me as an outsider to this field, as it provides an opportunity to connect with others beyond my regular sphere. I am soon to embark on a year's international placement in South East Asia, so it was particularly helpful to talk with those with experience in that region.

The RAID sessions were also exceptionally planned and executed. The first RAID session set the tone for the conference, with a carefully designed mentor system that ensured everyone felt connected and included. The following sessions informed the scholars about a range of activities and opportunities for work and research in international agriculture. In particular, hearing from other early career researchers was invaluable, as it provided examples of potential pathways for research and work, including funding, scholarship and graduate opportunities.

The conference was an outstanding opportunity to learn about the research and development projects that are occurring in international agriculture. The conference also provided networking opportunities with early stage and established researchers for international agriculture which was invaluable.

Lucy Noble, *University of Sydney*

Mentor: Jack Hetherington, *RAID*

My entire experience as a Crawford funded scholar at the 2019 Conference, was an eye-opening and profoundly positive experience. The opportunity to hear from and then speak to such a variety of people about the work being done in their field, was an aspect of the Conference that stood out as uniquely insightful and gratifying opportunity. Having an interest in the world of international agriculture as an undergraduate student, can often feel like a rather small and quiet field of work. However, hearing some of the world's leading pioneers address what they consider to be pressing cases in response to - '*Weathering the 'Perfect Storm' - Addressing the Agriculture, Energy, Water, Climate Change Nexus*', highlighted how very present the community is and how misguided I was. The calibre and insight of the speakers throughout the day was remarkable and concreted my understanding and fuelled my professional interest.

Professor Charles Godfray commenced the day as the first Keynote Speaker, proposing the loaded question - "Can we feed the world within planetary boundaries?". If there were an easy answer to the question the Conference would arguably not exist. However, Professor Godfray presented a collection of extremely profound and well-founded suggestions that left us pondering Malthusianism principles, the opportunities of small-scale institutional structures in Sub-Saharan Africa and the absolute necessity to stress test commodities.

Focusing more on the Theory of Change, Dr Bruce Campbell, highlighted the importance of adaptation and mitigation in agriculture, particularly in relation to the empowerment of the farmer and consumer. With an unprecedented increase in the incidence of record-breaking temperatures, comes reduced investment and productive assets. Dr Campbell went on to present examples of the private sector, government bodies and individual producers, all adapting to these changes seen in the Agricultural sector in response to extreme climatic



events. Although ultimately, serious political commitment to change remains a critical factor in addressing the 'Perfect Storm'.

The case studies presented in session 3 and 4 all explored different opportunities in the international sector to adopt sustainable agricultural practices and the effect of these possibilities in rural communities, both within and outside of Australia. Professor Alice Ferrer introduced the concept of, 'Climate smart Villages'. The idea behind the villages is that they provide a platform and vessel for farmer-to-farmer trade of information as well as informing national policy. Dr Di Mayberry focused on the current research into red meat GHG emissions and the possibilities that exist to also utilise policy and funding in order to reduce the impact of ruminant production. As the final speaker in the fourth session, Marc Noyce, approached the Perfect Storm as the CEO of Biofilta. Despite being motivated with clear business motivations, the attainment of financial return could only be satisfied assuming that social good had been achieved. Sarah Barker closed the day with a thought-provoking review of the financial risk and economic policy that surrounds the uncertainties of climate change.

The Conference did a remarkable job of holistically addressing many of the nuances of the 'Perfect Storm'. The days speakers were articulate, engaging and incredibly approachable. Along with the Scholar day activities, I left the Conference feeling invigorated and inspired to reach-out to many of the incredible people that I had met. However, I would like to thank those at the Crawford Fund, ACIAR, RAID and also Cathy Reade who ultimately facilitated my experience and made it what it is. I also owe a huge thanks to my mentor, Jack Hetherington. Without Jack, I truly would not have had the same amazing experience, nor met the people I was able to meet. I hope this is the first of many Crawford Fund Conference I get the opportunity to attend, and I am extremely grateful for this opportunity to attend.

Yolanda Plowman, *University of Sydney*

Mentor: Eric Huttner, *ACIAR*

The theme of the 2019 Crawford Fund conference was, "*Weathering the 'Perfect Storm', Addressing the Agriculture, Energy, Water, Climate Change Nexus*" and certainly lived up to the high expectations I had, having attended Crawford Fund conferences in the past. The conference experience for me was invigorating and helped me build new connections with people I wouldn't normally have the opportunity to meet. Not only did I get to attend the one-day conference as I have in previous years, this year I attended the conference as a Crawford Fund Scholar which provided me many opportunities to meet with interesting and engaged people in the food security sphere. On Monday, the day before the conference, we got the chance to hear from a number of people representing a range of areas in food security work and research. I found this particularly valuable as I was able to talk with key industry contacts about employment opportunities in the industry. We were also given the chance to meet our conference mentor, and to network with other scholars. These lively and engaging discussions continue into the night at the Sir John Crawford Memorial Address and Networking Dinner.

The highlight of the conference for me was hearing the keynote address by Professor Sir Charles Godfray from the Oxford University who posed the question, 'Can we feed the world without wrecking the environment?' Godfray spoke about 'Malthusian pessimism', which refers to the predicted pressures placed on our environment and food systems as a consequence of our growing global population. Although this is a current cause for concern, Godfray focused on what we can do, rather than what we can't, and I found this to be an exceedingly uplifting and inspiring way to kick off the conference. Throughout the day we heard from an inspiring stream of men and women from diverse backgrounds who are experts in their chosen fields. Another outstanding talk was by Dr Aditi Mukherji, the principal researcher at the International Water Management Institute. Dr Aditi spoke at both the Scholar's Day on the Monday and at the conference on the Tuesday. It was a pleasure to hear her speak at both events because not only was she an informative and interesting speaker at the conference, she spoke with sincerity and wisdom at the Scholar's Day event. It was inspiring to hear about her experience of being a woman in leadership working in food security related research.

Finally, on the Wednesday we heard from RAID members who had spent time working in the field. These presentations and discussions were entertaining and energetic and showed the Scholars what they could expect as field work officers: the good, the bad, and the ugly. This session was positive and informative and was strengthened by the fun RAID networking event that had taken place the night before. Overall the Crawford Fund Scholar program was enriching for me and served as an opportunity to become more informed and connected in food security research and development.

Naomi Diplock, *AVP volunteer, National Mushroom Centre Bhutan*

Mentor: Hugh Wallwork, *SARDI*

Attending the 2019 Crawford Fund Conference and Scholars program was a thought provoking, inspiring and enjoyable opportunity. While for me meeting highly experienced, motivating and encouraging mentors and





associates was the main highlight, the theme 'Weathering the 'Perfect Storm': Addressing the Agriculture, Energy, Water, Climate Change Nexus' was also of particular interest.

The keynote address delivered by Dr Bruce Campbell, leader of the CGIAR CCAFS Program captured me with visions that were alarming, while also giving messages of hope and optimism if we rethink and rework our current approaches to farming. With an outlook of current agriculture only being able to achieve 20-40% of the world's food requirements in 11 year's time, and the same number of growing seasons to achieve the Sustainable Development Goals, this is a waking and challenging prospect.

Through the various sessions, there was an overall focus on the need to commit to change and to work together to address this looming crisis, with a focus on climate crisis aversion through worldwide partnerships and committed change, while ensuring that no one is left behind. This must involve nexus thinking and nexus action, with the agriculture-food-nutrition-human health-planetary health nexus as a focus in policy and decision making. These thought-provoking sessions gave me a new insight in the financial aspect of climate change and the importance of the need for leadership to come from industry, communities and influential individuals with high hope that governments and policy makers follow. This must include social awareness, with evidence to justify decisions and an underlying foundation of thinking and acting globally.

The Scholar Days activities were highly relevant, and being assigned a mentor as experienced as Dr Hugh Wallwork made it even more so. Dr Lester Burgess also took me under his wing to ensure I met with valuable and important contacts. The activities focused around networking were fun and engaging and I have come away with contacts that may have transformed my future path. These activities were consistent with the theme of working together, while providing opportunities to meet a wide range of people from different fields and providing a link between disciplines.

While I have come away from the conference with a fear for our future, I also have high hopes of change and see opportunities to help address these challenges. I have a deeper understanding of the need to address environmental impacts, while keeping in mind the vast social impacts drastic change may have. It is fundamental that we address these issues together, globally across disciplines, through strong partnerships and an inclusive approach.

Thank you to the Crawford Fund for the opportunity to attend such an enriching, educational and connecting event. I am grateful to have had this opportunity and am positive it will have long lasting impacts on my future thinking and career.

GRAHAM CENTRE SPONSORED SCHOLARS

Rebecca Owen

Mentor: Bob Edgar, *Southern Cross University*

Sunita Pandey

Mentor: Shi Ying Yang, *University of Adelaide*

What was the highlight of the conference?

- The scholar program opened networks with a range of experts and other scholars in our research field. We especially loved initiating friendships with like-minded students and engaging in conversations about climate smart agriculture with a spectrum of intellectuals associated with the topic. We gained several great friends from all around the world, who we are sure we'll meet again in the future, whether it be through work or travel.
- Sarah Barker presented the most disruptive perspective of the day, discussing climate change risk through a finance and liability lens. I (Bec) didn't expect to engage so receptively with an economic approach. However, Sarah was one of my favourite speakers providing a very frank and realistic overview.
- The Networking Dinner on Monday night was another highlight for both of us. My (Bec) mentor Robert Edgar introduced me to many contacts who will be an asset to my career progression in the area of international agricultural research and development. I am very grateful for the assistance of my mentor throughout the conference, as well as his own advice for my future decisions.

How has it changed your perspective on something?

- During the mentoring, I (Sunita) changed my perspective on stress and worry. I learnt that worrying will never help a situation and I should approach things with a more positive attitude.
- The Crawford Fund Conference has broadened our perspective of climate change as a whole. In science, we are very often encouraged to specialise but our focus has been expanded as we have been made



aware of how connected and holistic the food, water, energy and climate change nexus is. We now realise that every researcher should sometimes take a step back from their research niche and collaborate to tackle food security and environmental challenges together.

- The research of Di Mayberry and Sir Charles Godfray, as well as discussions initiated by audience members, have developed my (Bec) understanding of ruminant greenhouse gas emissions and consumption of animal protein. There are often two extremes in the debate, but rather than taking 'sides', we should all work together to improve our knowledge of sustainable food production globally. Godfray proposed that we should regain respect for the intrinsic value of food and alter our dietary behaviour to incorporate 'flexitarian' habits. Mayberry highlighted that Australian ruminant emissions have decreased from 21% in 2005, to 10% in 2016, suggesting that further reduction is entirely possible with the right support. We need policy makers and market drivers to get on board.
- I (Sunita) got a lot out of Godfray's comments on the Malthusian Pessimism and our need for a 'Double-green Revolution', following the historical Industrial and Green Revolutions. Godfray explained that a 'Double-green Revolution' would tackle both issues of food security and climate change.
- We learnt that the diminishing water level for irrigation is a significant global issue.

What is the benefit for your research, current studies at CSU or future career?

- The case studies brought a really relevant perspective to the table and made us think about current issues and how we can contribute to change.
- Networking opportunities allowed us to make connections in the international agricultural research and development field and opened doors to opportunities including internships, graduate positions, volunteer trips and future research projects.
- Interaction with other scholars and mentors has broadened our connections in the industry and opened communication pathways for future liaison.

Has it inspired you to do anything?

- The scholar program presented clear pathways into a career in international agricultural research and development. Personal discussions during the many networking breaks throughout the conference have inspired me (Bec) to apply for the ACIAR Graduate Program 2020.
- Keynote speakers have encouraged me (Bec) to consider my individual contribution to climate change. I have been inspired to review my dietary decisions and adopt climate smart behaviours.
- The conference has consolidated my (Bec) desire to be a part of research in global climate smart agriculture. I am considering eventually pursuing a PhD in the realm of reducing greenhouse gas emissions in ruminants.
- Firstly, it inspired me (Sunita) to think about current challenging issues such as climate change and to look on broader perspectives before designing any research. Secondly, it inspired me to work for people and focus more on problem driven research. Thirdly, I was inspired by my mentor for her positiveness towards her research life.

Rebecca - This conference was definitely a highlight of my degree. I thoroughly enjoyed the experience and it has significantly contributed to my self/career development. I went into the conference on Monday with a very hazy idea of where I want to go following graduation at the end of 2019 and left on Wednesday with a very distinct pathway. I was very nervous upon arrival on Monday morning as I knew nobody. However, over the few days I stepped out of my comfort zone to make countless friends and connections and am sure I will come into contact with many again in the future. The mentoring component was fantastic. I really appreciated Robert Edgar's efforts in forging connections and sharing his own experiences. So, thank you for my inclusion in your scholar program. It was an extremely valuable experience.

SOUTHERN CROSS UNIVERSITY SPONSORED SCHOLARS

Razlin Azman

Mentor: Bec McBride, ACIAR

Overall, attending the conference was a good experience for me as my PhD project focuses on underutilised crops within the context of food and nutritional security. The conference covered a wide range of topics, all related to food and nutritional security, and kept within the focus of the agriculture-energy, water, and climate change nexus. Key messages from the parliamentary conference were that our climate has already changed, all sectors (agriculture, livestock, policy, international development) need to work together if we are to meet the SDGs. Although sessions were conducted with some formalities, Q&A held after each session were free, informal and welcoming. As a student, it is a great opportunity to ask questions to such established scientists and get feedback. The breaks (morning tea, lunch, afternoon tea, and networking dinner) did allow for good networking and meeting other researchers. Due to the efforts of Crawford Fund, all delegates were actively twittering where the hashtag #19cconf trended at number 1 in Canberra during the Parliamentary Conference. This added an element



of social interaction for delegates. As a student, this provided a virtual platform for interacting with fellow delegates and speakers.

I found Prof Godfray's talk particularly significant to the 'Perfect Storm'. Although some might conceive his talk as somewhat on the gloomy side, it showcased what has been achieved, and what needs to be done. I was especially excited that one of his slides showed that legumes need less land, water and resources for their cultivation. As someone who is studying legumes and always promotes their role for food and nutritional security, it was great to see someone like Prof Godfray represent this. I also found talks by Bruce Campbell relevant to what needs to be done to improve food and nutritional security. Farmer engagement is a topic seldom discussed, many do not realise their importance for food security, and biodiversity conservation. Marc Noyce from Biofilta presented a great example of how we can make a difference using a simple technology. Foodcubes and other similar innovations on the market have the potential to assist countries to become more self-sufficient for food and increase awareness on 'where our food comes from'.

The scholar program allowed me to meet fellow students from different disciplines such as veterinary sciences, engineering and resource management, and distinguished researchers in a friendly environment before the main parliamentary conference. There were about 50 of us, and we all bonded together quite quickly. After attending the scholar program, I am inspired to be part of the international agriculture research community. Never considering international development prior to attending the conference & scholar program, I have definitely changed my mind.

I would like to thank Southern Cross Plant Science (SCPS), Southern Cross University for allowing me to attend the conference. Hats off to Crawford Fund for organising an exciting conference - it is truly one of a kind!

UNIVERSITY OF NEW ENGLAND SPONSORED SCHOLARS

Sajane Hene Kapuralalage

Mentor: Stephen Ives, *Crawford Fund Tasmania Committee*

I am very grateful to the University of New England for giving me this opportunity to attend the Crawford Fund conference 2019 held in Canberra in August. It was a great platform for networking experts in different aspects of agriculture.

The scholarship and mentor program were the key to encourage the younger generation in sustainable agriculture for development. I was fortunate to have a mentor, Dr Stephen Ives, lecturer, the University of Tasmania who had a background in both agriculture and environmental sciences.

There were heaps of events under scholar program encouraging us to be a part of agricultural research and development activities worldwide. It would be a great opportunity for international students who engage in the agriculture sector to be aware of new technologies and policies regarding the development of world agriculture and networking people.

Abdur Sarker

Mentor: Alex Campbell, *Crawford Fund WA Committee*

I was thrilled by seeing how the world faces the challenge to meet global food security. I learned about advancing research in agricultural sectors by attending the Crawford Fund 2019 Scholar Conference on "Weathering the 'Perfect Storm': Addressing the Agriculture, Energy, Water, Climate Change Nexus."

The conference covered range of key topics notably how developing countries are struggling to advance their agricultural sectors e.g. increase crop production etc. through research and innovation, and how developed countries like Australia can provide support through research exchange and collaborations. The day-long conference at Parliament House provided me with background to ongoing research activities in developed countries with agricultural perspectives and how these activities benefit farmers in developing counties. The speakers addressed the emerging need to balance resource use (e.g. land and energy) for food availability with climate change impacts. As a research student of Environmental Science, I would have appreciated hearing more about how researchers in agriculture are planning to better manage the environment and lower the negative impacts of agricultural activities which are a leading cause of climate change.

Several speakers grabbed my attention; especially Aditi Mukherji who highlighted a coordinated action to tackle climate change in order to simultaneously improve land, food security and nutrition, and help to end hunger. I particularly liked the idea of 'Green Farming' by Ajay Mathur of using the technology of solar energy instead of fossil fuels as an alternative source of electricity in agricultural production, which helps farmers in developing countries where there is a scarcity of electricity. The concept of Climate-smart farming in Southeast Asia is an excellent approach as this guides farmers effectively for sustainable development in food production and ensures





food security in a changing climate. I think that the technologically advanced tools developed by 'Biofilta' for urban farming at low cost with greater accessibilities will accelerate farming activities among city farmers. However, I feel that besides financing research in agricultural development, there is an undeniable need to fund the climate change risk.

Mentoring was an important part of the conference as this facilitated the conference theme and allowed me to connect with scholars and researchers from diverse backgrounds. My mentor Alex Campbell, who has a wealth of experience with farming in Australia shared his valuable knowledge and suggested that I network with people of similar interest to me. The networking event by RAID was another exciting part of the conference which engaged me with their creative activities of volunteering and collaboration in research and allowed me to meet other scholars doing excellent research. Open discussion and group activities during the scholar day really helped to understand the variation in scholars' thinking. The stories of voluntary activities in developing countries were amusing and inspiring.

I am grateful to my supervisor, Debbie Bower, for nominating me for the conference and for providing the opportunity to obtain experience from the diverse community of agricultural research in Australia and worldwide. Special thanks to the Crawford Fund team for their continuous support throughout the conference to be a part of the amusing and enthusiastic scholars, researchers and to meet the greatest minds. I thoroughly enjoyed the conference which broadened my thought and capacity, filled me with inspiration and really pushed me to think about how to tackle the future challenge of global food security and combat issues in climate change for a better world.

