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THE CRAWFORD FUND
For a Food Secure World

HIGHLIGHTS

NEWSLETTER

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Why another conference?

Ethics, Efficiency and Food Security – Feeding The 9 billion, Well

By Dr Denis Blight, Chief Executive, The Crawford Fund

As we're faced with heartbreaking images on our television screens of malnourished children in sub-Saharan Africa and Asia, the topic of the Crawford Fund Parliamentary Conference 2014 could seem esoteric, irrelevant even to some people. Some may ask how a meeting in Australia can really help - direct food aid could be a more proactive approach...or resources would be better redirected to research, development and training projects in the Third World.

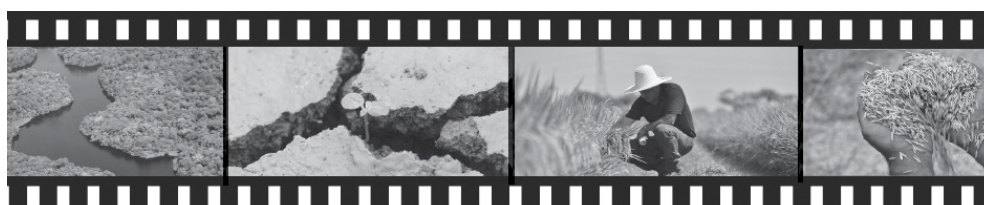
We face this question of relevance at the Fund every year as we try to find new and interesting ways to address the issue of global food security and the link between policy and practice. It strikes at the very basis of our purpose: to ensure that the plight of the hungry and malnourished is high on the priority agenda of policy makers and development practitioners.

Of course, all paths to action are vital. The Crawford Fund, in a small way, does what it can to support the training of dedicated developing country scientists, technicians and extension workers in matters that are critical to their success in helping to feed the world. In this way, for example, complex crop models can be translated into increased maize yields for smallholders in Africa. We have seen a landless African farmer in Tanzania adopting a farming model developed by an advanced research institution which she learnt about through a field school conducted in association with an ACIAR project and which she used by applying a small amount of fertiliser to her rented one hectare plot. She was so successful that she was able to contemplate renting another hectare.

Another example is a workshop conducted for the Fund that has strengthened the capacity of a team in Champasak Province in Laos to identify bacterial diseases and hence strengthen their quarantine capacity. This increases awareness of diseases that are exotic to Australia and improved production of healthy produce locally helps alleviate rural poverty.

Similarly, technical data on sustainable water yields can be used to develop multiple water use systems that provide water for drinking, hygiene and high-value garden crops to communities previously lacking access to water in Asia and Africa; science-based policies for climate-smart agriculture, including newly developed crop cultivars better adapted to drought, can be introduced to poor farmers and so on. ACIAR and its partners, by commissioning research on the policy and technical issues on crucial problems in developing country and Australian agriculture, creates the knowledge base for change and growth here and abroad.

In addition to providing this training that extends the application of this knowledge, the Fund, believes that our most effective role is to ensure that issues, approaches and policy options that are pivotal to global food security are brought to the attention of policy makers and members of parliament in an evidence-based non-partisan way. In our case, it is Australian policy makers and Members of Parliament who are the target for these efforts. We know how busy they are and that many others seek their attention on important matters.



Why another conference?

We are highly appreciative of the fact that they are ready to listen to those we bring together to present the facts and debate the issues in a constructive way.

We take some comfort from the fact that even in the tightest of fiscal environments the Australian Government, with bipartisan backing, is largely sustaining its support for international agricultural research and training, which we believe is a crucial part of the policy mix for world food security.

We have once again assembled a panel of the world's best speakers for a conference taking place at the heart of Australian policy making – the Australian Parliament House, during a sitting week.

We are looking at the topic from three overlapping perspectives. We gain an authoritative overview of the global demand for nutritious food from the World Bank; an assessment of the policy implications of food insecurity and gender inequity from IFPRI; and by recognising that trade is part of any sustainable solution to global food security, we have Rabobank looking at the opportunities for Australian exports to meet the burgeoning demand for food in the Asian region in the short, medium and longer terms.

The conference will also examine competing demand for food commodities from the livestock and energy sectors

and from a growing population with expectations of more and better foodstuffs; the issue of whether modern technology, including GMO's, is a saviour or a threat; the importance of nutrition in "feeding the 9 billion, well"; and the scope for sustainable consumption and less waste.

We have included two extended Q&A sessions in the Conference Program and look forward to your comments for the panels and for inclusion in the Conference Report. We have had the support of a large group of sponsors this year, too many to list but it is their support that makes our conference possible. I hope you will enjoy the event.



The 2014 The Sir John Crawford Memorial Address will be presented by World Food Prize winner, Professor Catherine Bertini, former Executive Director of the United Nations World Food Programme. Her address, titled ***"Effective, Efficient, Ethical Solution to Feeding 9 Billion: Invest in Women"*** will provide a fitting opening to our conference for which we have managed to gather such strong female leaders in agricultural research and development.

Encouraging Study and Careers in International Agricultural Research

As part of the Fund's efforts to encourage young people in their study or careers in international agricultural research, travel scholarships to attend the 2014 conference were again offered to young Australian agricultural scientists with a genuine interest in international agricultural development.

We received a strong response of high calibre applicants and are delighted to announce the 26 successful applicants who will also attend a special forum following the conference to learn more about the international agriculture for development scene, the impact it has and the opportunities it provides.

Some of our scholars have already had the benefit of international experience such as Arron Preston (pictured), who visited the International Rice Research Institute.

This year's group of successful applicants are:

Abu Abdullah, Charles Darwin University

Rowan Alden, Charles Sturt University

Katherine Ashley, University of Sydney

Jessica Bogard, University of

Queensland

Brendan Brown, University of Adelaide

Temma Carruthers-Taylor, Australian National University

Mardee Cassin, University of Sydney

Jade Chan, University of Queensland

Georgina Coggins, University of Sydney

Julia de Bruyn, University of Sydney

Heather Feetham, University of Adelaide

Danielle Gale, Curtin University

Alison Hall, Tasmanian Institute of Agriculture

Jenny Hanks, University of Melbourne

Tara MacKenzie, University of Sunshine Coast

James Manson, La Trobe University

Kirsty McCormack, University of New England

Soumi Paul Mukhopadhyay, Charles Sturt University



Aaron Preston, Charles Sturt University

Zita Ritchie, Department of Environment & Primary Industries, Victoria

Julia Smith, Department of Agriculture and Food, WA

Lydia Turner, Tasmanian Institute of Agriculture

Sarah van Bronswijk, Australian National University

Amy Vos, James Cook University

Annie Warren, University of New England

Yi Zhou, University of Adelaide

MAKING THE PUBLIC AWARE

The Fund's policy development and public awareness activities continue apace. We hope you find it interesting to get more regular reports from the Fund through our monthly e-newsletters and we plan to continue to produce a printed newsletter, like this, at least twice a year. In addition, you can keep up-to-date with our regular feature stories and news reports on our website, through our @CrawfordFund Twitter site and videos on our YouTube site. Key activities since the last newsletter are highlighted below.

DOING WELL BY DOING GOOD

Australian development assistance programs in agriculture and related sectors should, of course, retain their primary purpose of assisting economic and social development in the developing countries, in accordance with Australia's nation interests. But in addition, and without detriment to this purpose, we've always argued that they can deliver direct and indirect benefits to Australia. Our "Doing Well by Doing Good" report, released in December last year, has substantiated our contention with sound argument and independent analysis.



(ltoR) The Hon John Kerin, The Hon Katrina Hodgkinson and The Hon John Anderson at the NSW "Doing Well by Doing Good" event

Following its national launch, the Fund has had "Doing Well by Doing Good" events in Brisbane, Sydney and Melbourne to reinforce the messages on the benefits to Australia and developing countries from aid-funded agricultural research. As part of these events, we have engaged with State stakeholders, including senior politicians and bureaucrats, farmers, NGOs and research and academic institutions, and produced short brochures to highlight benefits and collaborations in our training efforts. Reports on the events and each of the brochures are on our website. Additional events are being planned for other States.

HIGH PROFILE FOOD SECURITY RELATED EVENTS

The Fund was pleased to be able to assist with the CSIRO Food for Growth event and the Meeting of G20 Chief Agricultural Scientists (MACS) event in June as a lead up to the G20 meeting in Brisbane in November.

Media assistance was also provided to support the August 2014 International Horticulture Congress as part of the Fund's sponsorship for the event that also included training for a developing country delegates who went on to attend the Congress.



The opening of the International Horticulture Congress, with over 3000 delegates from more than 120 countries.

FOOD SECURITY POLICY INITIATIVES

We have three policy initiatives currently underway, which will work in with our training and public awareness programs:

"Bread from Stones"

The 2013 Conference "Mining, Agriculture and Development: Bread from Stones?", addressed best practices and ways to strengthen partnerships between mining companies and rural communities, since mining shares the landscape and other natural resources, including water, with agricultural enterprises in many countries. Many mining companies are investing directly in support of local agriculture via their corporate social responsibility programs and procurement of locally grown food for their workforce; or indirectly through the added benefits that come from mining infrastructure, such as roads that enable access to markets. However, more could be done, especially in countries in Africa. Here there are countries where mining is an important contributor to the economy and the food and agriculture sector is undergoing transformation from subsistence agriculture to profitable enterprises, vital for small and medium sized producers as well as for commercial enterprises.



MAKING THE PUBLIC AWARE

The Africa Australia Research Forum at Murdoch University, the Australian Africa Mining Group (AAMIG) and the Crawford Fund are following up on the 2013 Bread from Stones conference, by developing a “white paper”, which will identify opportunities for future investments that link mining to agricultural transformation in targeted countries of Africa. These investments may take the form of corporate social responsibility project investments targeted towards increasing agricultural productivity and profitability in rural areas where agriculture and mining interests are co-located. There are also growing opportunities for commercial investments in the food and agricultural sector. Some governments in Africa are committed to transforming agriculture into a dynamic and growing sector of the economy and are providing the necessary policy, investment and regulatory environment to underpin increased domestic and external investments in the agricultural sector.

The lead authors of the paper on “Bread and Stones: Investing in Mining and Agriculture in Africa” are Dr Mark McHenry of Murdoch University and Dr Gabrielle Persley AM, the Crawford Fund’s Director of Research. Highlights of the paper will be presented at this year’s Africa Australia Research Forum on 2 September during the “Africa Down Under” conference in Perth. The final paper will be completed in 2014 after discussions with interested parties.

Demand-led research

The Crawford Fund has formed a partnership with ACIAR, through its Australian International Food Security Research Centre, and the Syngenta Foundation for Sustainable Development (SFSD). The partnership flows directly from the Fund’s 2010 Parliamentary Conference which asked whether private sector R&D could feed the poor. One of the keynote speakers at that event was Dr Marco Feroni the Executive Director of SFSD. The Conference, and Marco’s participation, began a discussion about the role of the private sector in international agricultural research. Since then ACIAR has given more thought to the involvement of the private sector in its programs, a proposition that was endorsed by the independent review of ACIAR and which has been picked up by the Fund as it seeks to push at the boundaries of what might be possible in the search for ideas of feeding the 9 billion, well.

The Alliance, as the partnership is known, believes that central to the transformation of agriculture in Africa is identifying market demand and using that knowledge to develop products with characteristics that meet that demand whether it originate from producers, processors or consumers. The first project of the Alliance, which is being implemented through the University of Queensland’s Global Change Institute, seeks to enable small scale farmers in Africa to better participate in local and regional markets by increasing the availability of high performing plant varieties that meet market demand, an approach that emulates best practice in the private sector. The project began in June 2014.

The Fund will contribute to the project through the conduct of a customized Master Class on “Demand-Led Plant Variety Design” and through advocacy based on policy analyses emerging from the project.

Biosecurity: Building capacity in east and southern Africa

Many of the best examples of the benefits to Australia from aid-funded agricultural research in our Doing Well by Doing Good report are drawn from projects related to biosecurity protection.

At the Fund’s July Biosecurity Forum held in Melbourne, which highlighted biosecurity benefits of international agricultural research, a sentiment was expressed that ‘the more biosecure are our neighbours, the more biosecure are we.’ It is central to enhanced trade and development. Biosecurity is a global food security issue and it follows that one of the ways Australia can contribute to food security, increased trade and economic growth in the Indian Ocean Asia Pacific region, is by enhancing the biosecurity capability of countries in the region. Australia has a very strong biosecurity system, and whilst the economic, social and cultural environment here may be quite different from that in place elsewhere in the region, there are certain fundamental principles, policies and practices that are common to sound biosecurity systems.



The Fund’s board member, Dr Tony Gregson joined Dr Nick Austin, ACIAR and Dr Peter Daniels, The Australian Animal Health Laboratory at the June Biosecurity Forum at the Rural Press Club of Vic

A recently approved ACIAR project seeks to assist build biosecurity capability in the Indian Ocean littoral and hinterland countries of Africa. The project, which is being led by a consortium headed by the Plant Biosecurity CRC on behalf of its membership, joined by CABI, CSIRO and the Crawford Fund, is built around:

- A technical planning and policy workshop in late October 2014, which will tackle the task of defining priority tasks emerging from an overlay of the capacities and needs of biosecurity in the region; and the strengths of Australia’s plant biosecurity system
- The definition of criteria for the selection of 12 Biosecurity Fellows who will spend time working with and studying elements of the Australian biosecurity system; they will be expected to select and adapt from what they learn and to seek to translate relevant policies and practices into an African context.

The Crawford Fund will seek to focus on the training, communications and public awareness aspects of the project.

JOURNALISM AWARDS AND VISITS

The winner of our 2014 Food Security Journalism award will be announced at this year’s conference dinner. Information on the winner and the entries by others who applied will be on our website on 27 August. And our inaugural award winner, Dr Elizabeth Finkel, chief editor of Cosmos science magazine, will get the benefit of her prize by travelling to Africa later this year to visit a range of agricultural projects.

CRAWFORD FUND TRAINING FOR IMPACT

We provide here a selection of reports as a sample of the training that the Fund has most recently supported for young agricultural scientists from developing countries in a broad range of skills. The back cover of "Highlights" shows some of the training planned in the coming months.

NEW TRAINING DIRECTOR

After six years, Dr Eric Craswell has stepped down from the position of Director of the Fund's Training and Master Classes. We are happy to report that Eric will remain involved in the Fund as a member of the ACT Committee. Dr Colin Chartres has been appointed as the new Director and will be well known to many through his most recent position as Director General of the International Water Management Institute and, prior to that, as chief scientist at the National Water Commission.



Colin Chartres

MASTER CLASS UPDATE

Presentation, writing, interview and social media skills were part of the program at the Fund's third Master Class in Communicating with Stakeholders, held in Fiji in May. Co-hosted by the Secretariat of the Pacific Community, the training involved 18 agricultural scientists and researchers from international and national research institutes, NGOs, the private sector and government departments going through their paces with the Fund's Cathy Reade and facilitators Tom Dixon and Toss Gascoigne from Econnect Communication. The Fund supported 14 of the 18 participants in Fiji, most of whom were working on projects in collaboration with the Australian Centre for International Agricultural Research and other Australian and in-country research organisations. The next Master

Class is planned for September in India and will involve national partners of the International Rice Research Institute.



Joanita Jong from Timor Leste being interviewed by Fiji TV during the Master Class

STATE TRAINING PROGRAMS

TASMANIA

Shark and ray taxonomy



Thai Masters student Sirachai Arunrugstichai during his shark taxonomy training

Sirachai (Shin) Arunrugstichai – a Thai Masters students from the Prince of Songkla University – travelled to Hobart earlier this year for shark and ray taxonomy at the Australian National Fish Collection, CSIRO laboratories. The training focused on the identification of sharks and rays, how to set up and photograph specimens, how to retain specimens for museum collections and how to freight specimens.

An introduction into the genetic work being undertaken at CSIRO was provided, including a tour of the genetic

laboratories. Shin was also able to access a large amount of reading material not readily available in Thailand. Several new scientific books on sharks and rays were purchased for him as part of the Crawford Fund project.

Shin's time in Australia also included a trip to James Cook University (JCU) in Townsville to undertake training on biological data collection and age and growth analyses for sharks and rays. The skills learnt will be invaluable to Shin's Master's project, but more than that, he has developed some strong collaborative links with both CSIRO and JCU staff who have agreed to assist throughout the term of his project.

"The biological and age and growth skills I developed for sharks and rays are difficult to obtain in my country and this will allow me to collect these important parameters for my study species - the spot-tail shark *Carcharhinus sorrah* - which is an important component of inshore fisheries in Western Thailand. I hope to be able to develop these skills during my Master's with continued support from the Australian colleagues and eventually be able to pass these skills onto the next batch of students," Shin said.

WESTERN AUSTRALIA

Coffee in PNG

Coffee is the highest foreign exchange earner for Papua New Guinea. Production is mostly by small farmers with land holdings who grow as little as 20 trees per plot in "coffee gardens" alongside subsistence crops. In order to strengthen the industry, the Crawford Fund supported an intensive four-day training program for 30 participants in Aiyura, which was co-funded by Peter J Batt and Associates and the Coffee Industry Corporation of PNG.

Participants were introduced to the principles of marketing before exploring the costs of production, supply and demand, product quality, distribution and logistics and the direct costs associated with the processing and exporting of coffee. Of greatest interest to the majority of participants was the discussion around how prices were derived on the New York Coffee Market from the purchase and sale of futures contracts.

After two days of intensive classroom instruction, participants then visited a processing factory and a coffee

exporter in Goroka where they were shown how the quality of the coffee was evaluated on arrival and the processes associated with cleaning, grading and blending.

Feedback from participants indicated that they had a much better understanding of the roles played by each of the different actors in the coffee value chain and of the risks associated with export. Participants realised the need to engage with processors and exporters and to establish enduring long-term relationships as a way of supporting downstream customers and of improving the quality and reputation of PNG coffee in the world market.

VICTORIA

Beneficial microbes in agriculture



Ms Laetitia Herrmann with training participants in Bangkok

The high costs of nitrogenous fertilisers, phosphate and other agricultural inputs – particularly in developing countries – is driving the development and use of beneficial microbes to enhance crop production. Microbial products represent a relatively cheap alternative to fertilisers, and have been shown to perform very well in different kinds of environments, including different crop types and different soil types.

However, there is little information on the actual content of these products and the regulation to control their quality is globally poor. This means that an increasing number of products being sold in SE Asian countries which have not been certified to be pure cultures, and have not been assessed for efficacy or their potential to be human pathogens.

With the support of the Crawford Fund, a training workshop titled “Capacity Building for beneficial microbes in agriculture in Laos, Cambodia and Vietnam” was held at the Land Development Department Office of Science for Land Development in

Bangkok, Thailand in April this year. The training was led by Dr Lambert Brau, Ms Laetitia Herrmann and Dr Lee Hudek from Deakin University.

The course trained scientists to be able to assess the microbial quality of commercial inoculants and to distinguish ineffective products from quality products in national markets.

Landcare in Tonga

The ‘Market Garden’ project initiated by Australian Rotary in the Kingdom of Tonga began in 2010 with the construction of raised food gardens and chicken houses in Popua, a poor village near the Tongan capital, Nuku’alofa. The initial assessment carried out in 2013 identified positive outcomes from the project but a need for additional knowledge sharing to improve food-growing skills in the village. A follow-up training project in May 2013 involved linking villagers with information sources from relevant government departments to improve seedling development, soil management and animal production.

In June 2014 the Crawford Fund supported further training and assessment to identify the outcomes of the Popua project and to further enhance the on-going experience of the householders through additional skill sharing. This included three elements: a household survey to ascertain and quantify the benefits, and any concerns, from the first three years of the food production project; a workshop to identify the experiences of participants in the project; and opportunities for village leaders to see first-hand the likely source of



Participants visit a nursery in Tonga

fruit trees and future stock of vegetable seedlings appropriate to the Popua environment.

The assessment found that there has been significant dollar-savings for families who grow, rather than buy, fruit and vegetables. There has also been improvement in the diet of food-growing families at a time when there is concern about health conditions such as heart disease and diabetes.

The original Popua project is now completed. Its success and the lessons learnt will benefit a more extensive “Tongatapu Market Garden Project” funded by the NZ Aid Program and Rotary, involving 300 households in three villages.

SOUTH AUSTRALIA

Agricultural challenges in Ghana

The Ghana Farmer Based Organisation (FBO) study tour to Australia earlier this year provided a unique and valuable opportunity for a range of extension workers and representatives from Ghana to discuss issues directly with their Australian counterparts. The issues of interest included methods of operations; funding, governance and business models, and participation rates by farmers.

The Australian FBO’s comprised the major farming systems groups – Southern Farming Systems, BCG, Mallee Sustainable Farming Group, and the Hart Field Site Group. This was complemented by visits with the Department of Environment and Primary Industries at Geelong, Horsham and Mildura; Rural Solutions SA at Loxton, as well as visits to a range of farms, and attendance at the GRDC Advisor Update in Adelaide.

Whilst agricultural production systems and crops in Ghana are different to those of Australia, the Ghanaian participants were able to experience a range of different dryland farming systems, irrigated horticulture and pastoral livestock systems throughout South Australia and Victoria. The fundamental principles are applicable and transferable to the development of effective and sustainable FBO’s in Ghana.

The group has returned to Ghana with new ideas and increased motivation to develop and inspire the evolution of more effective FBO’s, to move closer to achieving food security for their country.

CRAWFORD FUND TRAINING FOR IMPACT

ACT

Biosafety in SE Asia



The sharing of expertise and knowledge amongst training participants in Canberra

With a growing body of literature confirming the safety and potential economic benefits of planting genetically modified (GM) crops, South East Asian countries are making headway in testing and releasing GM crops, such as drought-tolerant sugarcane in Indonesia. The challenge these countries now face is figuring out how to develop functional

biosafety regulatory systems for GM crops.

Australia has extensive expertise in this field. Our Office of the Gene Technology Regulator (OGTR) heads a biosafety system that is regarded worldwide as an effective, enabling regulatory framework – not only covering field trials and commercial releases, but also ‘post-release’ regulatory responsibilities related to monitoring of environmental effects and inspections.

In order to share Australia’s expertise, the OGTR in collaboration with the Program for Biosafety Systems, a USAID-supported project managed by the International Food Policy Research Institute, organised training on “Developing and Regulating Agricultural Biotechnology Products: Sharing expertise from Australia and Southeast Asia” in Canberra with the help of the Crawford Fund.

Eighteen experienced regulators from Cambodia, Indonesia, Malaysia, the Philippines and Vietnam participated. It

is hoped the training will lead to stronger bilateral collaboration with Australian expert organisations such as OGTR, and for improved mechanisms for regional collaboration and information exchange on biosafety and GM crops.

NSW

Improving Cambodian farm systems



Sokchea An gives a presentation at Charles Sturt University

Cambodian World Vision program officer, Sokchea An completed a nine-

Crawford Fund fellowships

The 2013 and 2014 Crawford Fund Fellowships offer opportunities for scientists from Nepal and Indonesia to increase their knowledge, as well as contributing to food security in our region and biosecurity of Australia’s borders. The Fellowship, established in 2002 with the generous support of Dr Brian Booth AM FTSE, provides further training of a scientist in agriculture, fisheries or forestry from a selected group of developing countries, whose work has shown significant potential.

The 2013 Fellowship was awarded to Mrs Sita Bantha Magar, an Agro Enterprise Development Specialist from Nepal. With an indigenous farming background, Mrs Magar is an agriculturalist with strong, diverse and hands-on knowledge, backed by theoretical understandings of underlying scientific principles. During her visit to Australia earlier this year, Mrs Magar spent time at the Central Queensland University to learn about quality control, supply chain management, farm practices and post harvest activities. Her focus was on mandarin orchard establishment, irrigation, nutrient management, logistics support and postharvest management. She also visited small scale producers in the Rockhampton area, large-scale producers in Abbotsleigh Farm and

Childers and the Brisbane markets and major retailers.

The 2014 Fellowship has been awarded to veterinary virologist Dinar Hartawan from Indonesia. He will use the Fellowship to undertake training at the Faculty of Veterinary Science at the University of Sydney and at the Elizabeth Macarthur Agricultural Institute (EMAI), New South Wales Department of Primary Industries (NSW DPI). This training will enhance Dinar’s diagnostic and epidemiological skills. The close proximity of Indonesia to Australia means that ensuring high diagnostic and response capacity is of value to prevent these diseases entering Australia.

Dinar Hartawan, inspecting poultry in Bali.



“Dinar, through the investigation and diagnostics of animal viruses, is making a substantial contribution to animal health, and thus livestock production and human health, in eastern Indonesia,” said Jenny-Ann Toribio, Associate Professor at the University of Sydney, who was one of Dinar’s nominators.

week training course on Agribusiness Planning at the School of Agricultural and Wine Sciences, Charles Sturt University recently.

He concentrated his study on farm operations planning – learning how to use the Agricultural Production System Simulator (APSIM) for rice production in Cambodia.

Mr An's research project is titled "Improving Rice Productivity and Farmers Income in Cambodia: Econometric Estimation Using Data of APSIM". He used APSIM, Ordinary Least Square regression and gross margin estimation as research methods.

The objective of his research is to increase rice productivity, simulate possible rice production scenarios and estimate gross margin obtained from each production scenario. He has conducted 21-consecutive-year rice simulation. He generated 32 production simulation scenarios under conditions of four soil types for rice cultivation.

This will help farmers to optimize their return from rice production by choosing a scenario with optimal productivity and gross margin. His research findings could be used as educational materials for development practitioners as well as farmers to improve rice production and increase income.

"I will share my research findings with my workplace. This will contribute to organisational learning on agricultural development – specifically the improvement of rice production. Even though data for APSIM is limited in Cambodia, there could be possibility to apply it in other crops as well. Another benefit is that from the research report, my training supervisor and I aim to make an article for publication," he said.

Renewable natural resources in Bhutan

The Himalayan Kingdom of Bhutan is still primarily agrarian, despite increasing income from hydro-power, tourism and mining. Over 60 per cent of the population lives in rural areas and are highly dependent on agriculture for their livelihoods. The government invests heavily in agricultural, forestry and environmental research (known as RNR - Renewable Natural Resources).

Social research is essential to assess potential livelihood impacts from changing practices or products, but is often overlooked in training of agricultural scientists. To address this, Dr Joanne Millar and Dr Rosemary Black



Dr Joanne Millar and Dr Rosemary Black wearing traditional dress in Bhutan

from Charles Sturt University partnered with the Council for Renewable Resources Research in Bhutan to deliver a five-day course in Thimpu for 20 local researchers.

The researchers have been working on a wide range of issues, such as developing disease resistant varieties of vegetables, increasing dairy production, reducing human-wildlife conflict via electric fencing, trialing aquaculture, marketing of organic products, and even testing edible orchids.

Using a combination of lectures, interactive exercises and reflections, the participants were encouraged to think beyond production and economic benefits from their research to broader livelihood issues affecting farming families. They learnt how to develop research questions that explore positive and negative social impacts from an RNR issue or from introducing new practices.

By the end of the course, the researchers were confident and keen to trial their new skills back at their RNR research centres across Bhutan.

QUEENSLAND

Oil palm soil management

Oil palm is a major and expanding industry in the tropics, and good soil management is critical for ensuring sustainability of the industry, both for corporate plantations and smallholder growers.

Hervé Aholoukpè, a lead scientist in the Centre for Perennial Crops Research in Benin, West Africa, participated in an international workshop on "Sustainable Management of Soil in Oil Palm Plantings" with the support of the Crawford Fund. Aholoukpè was the only

African participant in the workshop and was awarded his doctorate a month later.

While Africa accounts for little of the global production of palm oil, the crop is a major source of food and income for smallholder farmers in West and Central Africa. Sustainable soil management is challenging there due to low soil fertility, competing demands for plant residues (mainly fuel) and high cost of fertilisers.

The two-day workshop, organised by Dr Paul Nelson of James Cook University and Australian and international colleagues, was held in Medan, Indonesia, and involved 38 scientists from 10 countries.

The aim of the workshop was to improve sustainability of soil management in oil palm plantations and smallholder farms around the globe, by facilitating scientific exchange and the generation of more holistic and site-specific information and advice to growers.

Aholoukpè was able to present his research findings on the effects of organic amendments on soil properties, to benefit from the experience of many scientists working in the major oil palm growing areas of the world, and to build networks for scientific exchange. This enhanced scientific exchange is also expected to benefit tropical tree crop farmers in Australia, who face similar challenges for maintaining and improving soil fertility.

The workshop was funded by the International Conference on Oil Palm and the Environment, Australian Centre for International Agricultural Research, the Crawford Fund, International Plant Nutrition Institute-South East Asia Program and the participants' organisations.

Rice breeding techniques for Pakistan



Dr Naeem Ahmad Naeem takes a closer look at crops in NSW

How can rice farmers in Pakistan develop high yielding, cold tolerant varieties in the Khyber Pakhtunkhwa

CRAWFORD FUND TRAINING FOR IMPACT

Province in the north-west of the country? This question was explored when Dr Naeem Ahmad Naeem, Principal Research Officer (Cereals), Agricultural Research Institute (ARI) Mingora travelled to Australia for training with the support of the Crawford Fund's Queensland and NSW committees.

Dr Naeem had the opportunity to see glass house breeding work at Yanco, as well as to visit their germplasm repository.

He met with participants of the Rice Growers Association and several rice farmers, and had the opportunity to discuss with them the challenges which they are facing in paddy cultivation.

Dr Naeem says the training has allowed him to share and gain knowledge and experience from Australian scientists.

"I like to say special thanks to all the members of the Crawford Fund especially Helen Scott-Orr and Kep Coughlan for their arrangements and sponsorship of the training program. I also say thanks to my mentor, Dr Peter Snell who made me

feel like part of his team at Yanco, and took great care of me and provided me with all necessary things I needed during my stay," Dr Naeem said.

"The potential improvements in rice breeding techniques in northwest Pakistan which should arise from this visit are major and I was particularly impressed to see the steps already being taken to exchange rice germplasm with clear benefits to both Pakistan and Australia," said Dr Helen Scott-Orr from the Crawford Fund.

NORTHERN TERRITORY

Catchment management in West Timor

Farmers in West Timor rely on rivers to irrigate agricultural paddy production. During the rainy season, the land floods while in the dry season there is often drought which can lead to food shortages in the region. For this reason it's important for local governments to

implement good policies to manage catchments.

Mr Kris Hale Berek, from a Forestry department in the eastern Indonesian district of Kupang, recently spent three months in Darwin to prepare him for a Masters on catchment management. His work duties included mapping and monitoring to inform catchments policies in West Timor.

During his stay in Darwin, Kris strengthened his language and academic research skills by undertaking a course in academic English. Kris also benefited from attending seminars and taking part in discussions about catchment processes at Charles Darwin University (CDU).

"I will continue with my research at CDU for the next two years. The research will focus on catchment management in West Timor. It is essential to gain knowledge and research skills to support local governments to formulate appropriate policies in catchment areas," he said.

2014 CRAWFORD FUND MEDAL

Dr Robyn Alders AO

The Crawford Fund's training program's success is based on people: trainees and trainers who are seeking to make an enduring contribution to global food security. Their commitment and perseverance, often over long periods, mark the Fund out as a unique contributor. Many go unnoticed and their contributions unheralded.

Accordingly, in 2010 the Crawford Fund decided to recognise people who have made a considerable and continued contribution to international agricultural research through our training programs and related activities. Each year, on the recommendation of State and Territory Committees, medals are awarded to a limited number of people.

Dr Robyn Alders AO is receiving the 2014 Crawford Fund medal. She is an outstanding contributor to the world's food security and to childhood nutrition, through her work on animal health. She believes that healthy livestock directly support ecologically sustainable development, and improve livelihoods for rural communities.

For over 20 years Robyn has demonstrated this belief through her

work with smallholders and villagers and their chickens, and by her teaching, publishing, research and executive leadership. Robyn was the focus of a Crawford Fund video highlighting her work in Africa. The video is available on our YouTube site.

The video shows how Dr Alders engages rural communities to take part in innovative research programs, and these programs have also lifted gender equity while giving a huge boost to local skills in Ethiopia, Kenya, Malawi, Mozambique and Tanzania as well as Indonesia, Timor Leste, Lao PDR, Thailand and Viet Nam.

Dr Alders will receive her medal at the Crawford Fund Conference dinner on 26 August.



Hearing from our AVIDs



Kylie Ireland with local producers at the market

The Crawford Fund has been assisting with the placement of young Australians in agriculture projects in developing countries for well over a decade. We work with Austraining International (recently renamed Scope Global) and our international collaborators to identify opportunities for these young Australians who are supported through the Australia aid program.

A short report follows from one of our "Australian Volunteers for International Development" or AVIDs. Kylie Ireland has recently been joined in Lao PDR by Madaline Healey, a former Crawford Fund conference scholar, and Lyall Grieve. And we have Tamzin Byrne in Nairobi. We hope to bring you news of their work as it progresses as well as new AVIDs we hope to have in the future.

Kylie reports:

As a volunteer plant pathologist with the Champasak Provincial Crop Disease Diagnostics Laboratory in Pakse, Laos, no two days are ever the same – surveying in cabbage fields in the pouring rain, doing laboratory diagnostics, teaching plant disease theory in Lao-glish and dining on fried fish and frogs is all in a week's (and sometimes day's) work. I work with incredible people in an incredible location with incredible plant diseases! And what a training ground! I have surveyed more than 20 different crops in the last year alone, seen more than 50 plant diseases, diagnosed at least 15 of these and worked with at least three biosecurity threats to Australian plant industries and ecosystems!

Supported by Austraining, who manage the Australian Volunteers for International Development program (an Australian Government initiative), and partnered with the Crawford Fund, we are working to provide a bright future for Laos agriculture through capacity development in crop disease diagnostics, IDM and more recently, pest diagnosis and IPM - with our newest volunteers Lyall and Madaline. Crawford Fund is pivotal in ensuring our work is successful – supporting workshops in Integrated Disease Management, Plant Disease Diagnostics, Bacterial Diagnostics and IDM, and Integrated Pest Management. Our mentor Professor Lester Burgess (NSW Committee) is a great teacher and has ensured the success of the program through a long-term commitment (since 2009) to our Lao counterparts – in a country where relationships are

paramount and academic knowledge and English language is amongst the lowest levels globally a committed long-term approach is not only needed, it is necessary. Additionally, we have built strong relationships with local non-profit associations, ACIAR and the FAO, to ensure our work is far-reaching, effective and synergises with other active projects.

The work is thoroughly rewarding and I implore anyone who is interested to get involved

– Crawford Fund is committed to the people of Laos and our local counterparts in the government to assist with long-term capacity building in the fields of plant pathology, entomology, food safety, agronomy and weed science. Get involved as a mentor, a volunteer or as part of the home support team (experts in any of the above fields) – I guarantee you'll be rewarded!



Madaline Healey with Kaisone, a plant pathologist, and Ms Mayouly, an entomologist

CONTRIBUTORS FINANCIAL YEAR 2013-14

We wish to thank the following contributors to our training and public awareness activities:

Australian Academy of Technological Sciences and Engineering (ATSE)
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**The proceedings of the Crawford Fund's 2013 conference
 are now available online or by contacting our office.**



**Africa Australia
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MINING, AGRICULTURE AND DEVELOPMENT

Bread from stones?

The Crawford Fund

2013 Annual Conference

**A joint conference of the Crawford Fund
 and the Africa Australia Research Forum**

Perth, Western Australia • 26-27 August 2013



What is the Crawford Fund?

The Crawford Fund's purpose is to encourage investment in international agricultural research (IAR) by governments and the private sector, in the belief that it is an essential, high priority, international activity.

We believe that IAR holds the key to alleviating rural poverty in developing countries, and can thus open the door to economic progress. Good news is worth sharing, and the Fund's Public Awareness Campaign increases understanding of the importance and potential of IAR, its achievements and needs.

The Fund also has a training program that fills a niche by offering practical, highly focused non-degree instruction to men and women engaged in agricultural research and management in developing countries.

HIGHLIGHTS is the Crawford Fund newsletter. Letters from readers are welcome and should be sent to the editor, Cathy Reade at cathy.reade@crawfordfund.org

Highlights and other publications and materials are on our website:

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THE CRAWFORD FUND
For a Food Secure World

Awards and Training Courses supported by The Crawford Fund

The following awards to individuals and courses for groups will be reported in future newsletters:

Training awards to individuals:

Dr Adnan Kanbar – Syria - Translating Sequence Data into Crop Improvement

Kenneth Mbene – Cameroon - Phosphorous fixation and mineralogical composition of soils within the Mount Cameroon region

Madaline Healey – Australia - Identification and Integrated Pest Management of Key Pests in southern Lao PDR

Mr Guillermo Ariel Garcia – Argentina - APSIM training to improve crop simulation capability on the impact of increasing night temperatures in winter cereal production

Myint Zaw – Myanmar - Research training in microbiology (rhizobiology)

Samson Chimphango - South Africa - Nodulation assessment in response to inoculation, using and building the legume- nodulation database, learning acetylene reduction and glasshouse screening techniques



Training courses to groups:

Philippines and Indonesia - Landcare training workshop: learning from a decade of Philippines Landcare experience including on-ground programs, group facilitation and support, organisational management, policy development and institutional strengthening

Laos - Diagnostics and Integrated Disease Management (IDM) of Bacterial Plant Pathogens

Bangladesh - Training in research techniques to investigate weed control by herbicide application in conservation agriculture

Uganda - African Master TreeGrower Course

Several Pacific Island countries - Postharvest and Production Horticulture Courses linked to the International Horticulture Congress

Indonesia - Specialised training for Indonesian collaborators linked to the International Horticulture Congress 2014

Laos - Pig Nutrition and Management

Laos - Capacity Building for Crop Protection

Indonesia - Upskilling Indonesian biology researchers for international publication: training staff at IPB to write and mentor students in writing

PNG - Training in virus testing procedures for sweet potato