Australian Government
Cotton Research and Development Corporation

TRAVEL, CONFERENCE or SCIENTIFIC EXCHANGE REPORT 2017

Part 1 - Summary Details

Please use your TAB key to complete Parts 1 & 2.

CRDC Project Number: CSP1707

Project Title: A&CC Netherlands- Broughton

Project Commencement Date: 24/3/17 **Project Completion Date:** 5/4/17

CRDC Research Program: Choose an item.

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Signature of Research Provider Representative: _____

Date Submitted: _____

Part 3 – Travel, Conference or Scientific Exchange Report

(Maximum two pages)

1. A brief description of the purpose of the travel.

The purpose of travel was to attend the second Agriculture and Climate Change Conference held 26th-28th March 2017 in Sitges, Spain and to meet with researchers at Wageningen University and Research Centre in The Netherlands.

2. What were the:

a) major findings and outcomes

b) other highlights

The Agriculture and Climate Change conference focused on the likely impact of climate change on crop production and explored approaches to maintain and increase crop productivity in a changing climate. Approximately 300 delegates attended the conference, and thus provided an opportunity for numerous seminars, posters and discussions on climate change research in a diverse range of crops. The themes for the sessions included: increased agricultural uncertainty; modelling and its application; impacts on nutrition, quality and resource use efficiency; abiotic stress; effects of CO_2 on plant growth; plant-microbe interactions; innovative agronomic and breeding practices; and new crops for a new climate.

A couple of the particularly interesting oral presentations included the agronomic and metabolic responses of rice during simultaneous heat and drought stress and subsequent recovery (presented by Lovely Lawas; Figure1); and the impact of elevated CO_2 concentrations on interactions between grapevines and the pathogen *Plasmopara viticola* (presented by Dr Moustafa Selim). Other interesting presentations highlighted some of the other climate research that is conducted in Australia. For instance, Dr Marta Monjardino gave an interesting presentation about adapting to risk in marginal dryland cropping systems of Southern Australia and Prof Richard Eckard presented research on the implications of a changing climate for pastures and the Australian dairy industry. Several of the presentations re-enforced that climate change offers exploitable opportunities that we need to utilise in order to offset potential losses in production. I also took the opportunity to have a conversation with Dr Kenneth Boote about the use of models in capturing responses to elevated atmospheric [CO_2]. Furthermore, I made note of a number of papers referenced in the presentations that will be useful to read, and participated in an Author workshop run by Elsevier that gave hints and tips for publishing research articles in high quality journals.

Our research was well received by the international scientific community. This was an exciting opportunity to showcase research conducted in the Australian Cotton Industry, and there was a lot of interest regarding how the cotton industry operates in Australia. There was significant interest from other scientists regarding our in-field chambers and the experiments we were conducting in the facility. It was clear that our approach was novel and unique in this area, and my presentations generated discussions about the importance of in-field research into climate change interactions. This trip was important to begin linkages with European agricultural scientists, in addition to our close collaborations with U.S. research. A number of scientists I met with expressed interest in continuing discussions and looking for collaborations in this area.

3. Detail the persons and institutions visited, giving full title, position details, location, duration of visit and purpose of visit to these people/places. (NB:- Please provide full names of institutions, not just acronyms.)

I attended the second Agriculture and Climate Change conference, which was held in Sitges, Spain 26th-28th March 2017. Over the duration of this conference, I made the most of the opportunity to discuss and network with numerous researchers investigating plant responses to altered climatic conditions in a wide range of crops.

I visited the Wageningen University and Research Centre on 30th March, where I met a number of scientists and presented our climate change research at their lunch seminar. Some of the scientists included Prof Petra Hellegers (a researcher in water resources management) and Maryna Strokal (a researcher working on modelling environmental management and water quality). Following these meetings and the lunch-time seminar, I met with Kailei Tang, a PhD student researching the effects of nitrogen content and temperature on photosynthesis of hemp (*Cannabis sativa* L.). Prior to my visit, I had also contacted a crop physiologist, Dr Wopke Van Der Werf, who unfortunately was away during my visit to Wageningen. Dr Van Der Werf is an associate professor in cropping systems and would potentially be someone to connect with in the future. Whilst at Wageningen, I also met with Dr Rose Brodrick and Dr Lindsay Bell (both CSIRO).

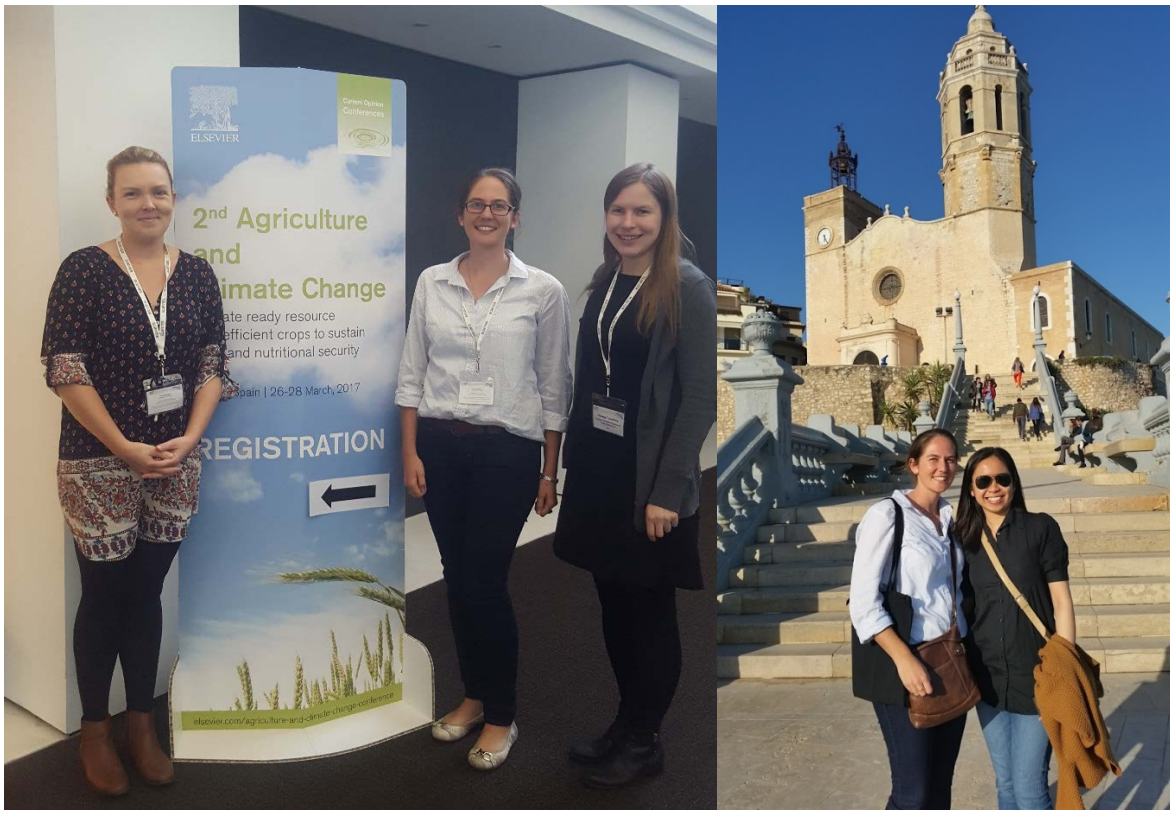

Figure 1: Pictured with (L) Rebecca Thistlethwaite and Hanna Tuomisto; and (R) Lovely Lawas at the Agriculture and Climate Change Conference in Sitges, Spain. R. Thistlethwaite presented research on identifying key drivers of tolerance to heat stress in wheat, H. Tuomisto presented work relating to the impacts of climate change on the yields and nutritional quality of fruits and vegetables, and L. Lawas presented research on the metabolic responses of rice during heat and drought stress.

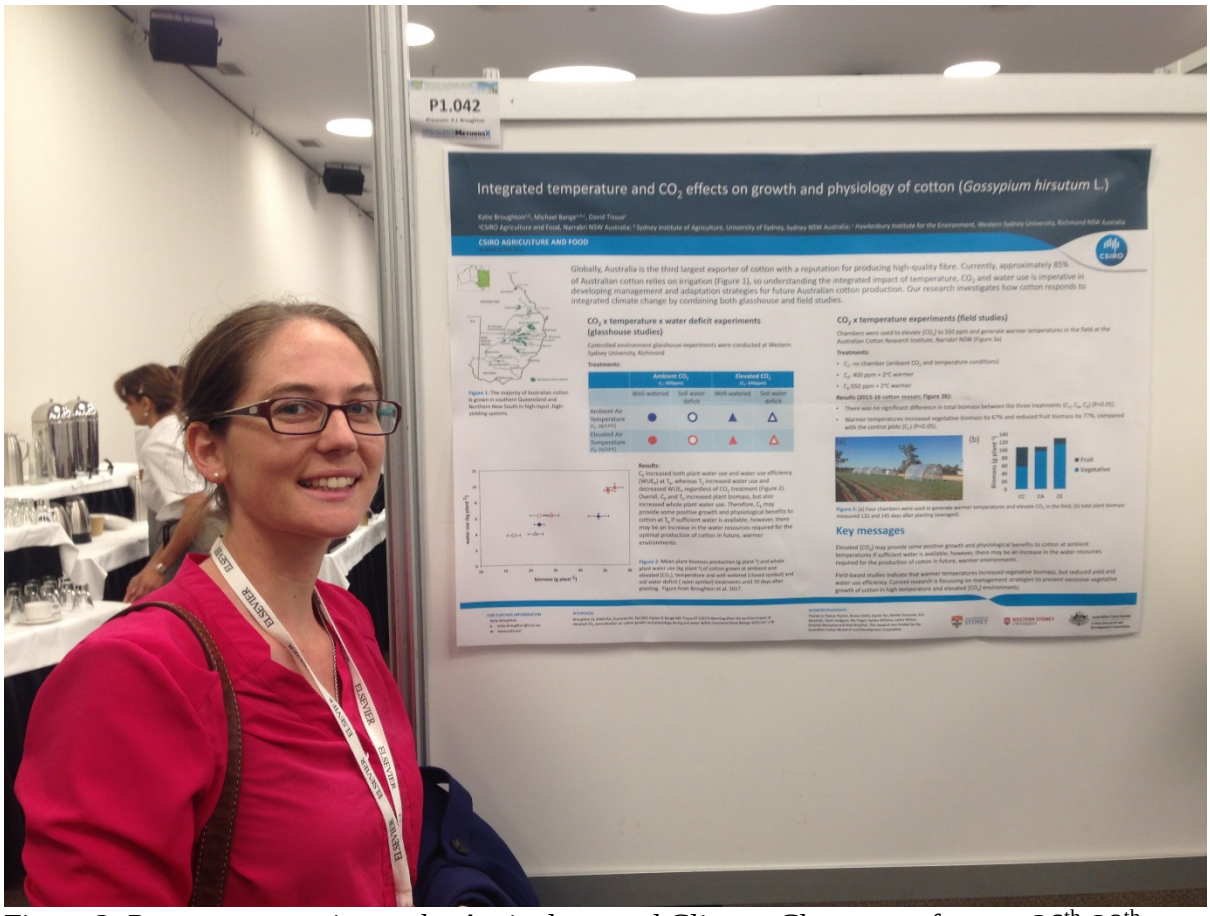

Figure 2: Poster presentation at the Agriculture and Climate Change conference 26th-28th March 2017 in Sitges, Spain

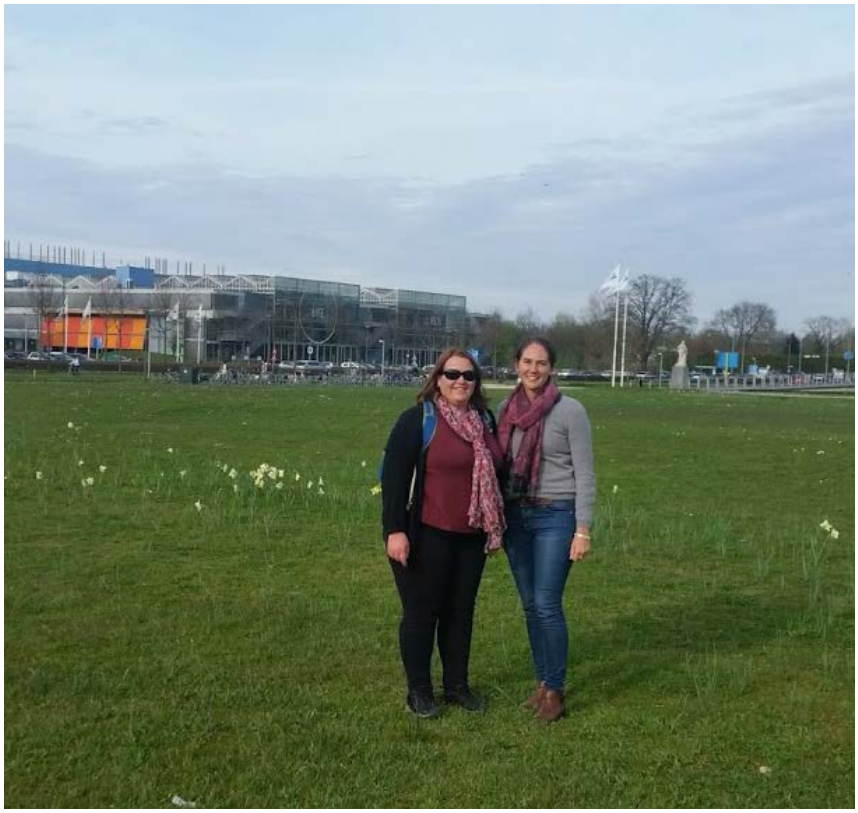
Figure 3: Touring the campus at Wageningen University and Research Centre with Rose Brodrick, The Netherlands

4. a) Are there any potential areas worth following up as a result of the travel?
b) Any relevance or possible impact on the Australian Cotton Industry?

The conference and visit to Wageningen University provided an opportunity to present our climate change research to an international audience, specifically to researchers working in areas of agriculture and climate change. This was an important for peer review of our research on cotton, but also was important for developing research opportunities and collaboration with other scientists focusing on crop responses to projected climate change. From feedback and discussions in both Spain and The Netherlands, our research was well received, and there was a lot of interest in the Australian Cotton Industry, and the management of our water resources. Furthermore, I have taken note of a number of papers that were referenced during the conference that will be worth following up.

5. How do you intend to share the knowledge you have gained with other people in the cotton industry?

Details relating specifically to the Agriculture and Climate Change conference and visit to Wageningen University will be discussed amongst researchers at ACRI.

6. Please list expenditure incurred. ***(Double click inside the table to enter the data)***

Please email your report 30 days after travel/conference to: research@crdc.com.au