

Department of Agriculture and Fisheries – Drought and Climate Adaptation Program

DCAP Project Final Report

Project ID	USQ 5 Regional CC adaptation for agriculture
Grantee Name	USQ

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1. Executive Summary

To assist producers, governments, industry groups and communities to understand the risks and prepare for the impacts of climate change, Climate Change Adaptation workshops were conducted in three Central Queensland locations in 2017.

A total of 44 stakeholders from across the regions took part. The workshops were designed to promote interaction between participants, stimulate discussion, raise awareness of regional climate change projections and increase the knowledge of the participants in climate risk management. A key objective of the workshops was to facilitate incorporation of climate change adaptation measures into regional and farm management planning processes.

Across the three workshops, eleven Risk and Vulnerability Matrices were developed by participants for a range of key regional issues.

Post-workshop evaluation forms were used to collect quantitative and qualitative data. The results indicated that stakeholders found the workshops both informative and effective in increasing awareness of regional climate change risks and of the need to incorporate climate change adaptation planning within their enterprise, industry and organisation.

2. Project Background

The uncertainty of climate change projections, particularly rainfall, along with the complexity of agricultural systems provides an opportunity to use a risk management approach to assess the risk and vulnerability of agriculture to a changing climate. Risk assessment takes into account a system's/enterprise's potential exposure to impact, risks and opportunities due to change (in this case, climate change). Subsequent vulnerability assessment then identifies potential adaptations or responses to these risks given the system's capacity for change (QDERM 2011).

The Impact Risk and Vulnerability Assessment process, based on work by Cobon et al. (2009), is a 14-step process designed to assist managers to identify impacts, adaptation strategies, risks and vulnerabilities relevant to their industry/enterprise (QDERM 2011). The approach is readily applicable to facilitated workshops. This report presents results from a series of three workshops targeting Queensland agricultural industries and regions identified as vulnerable to climate change. The aim of these workshops was to improve understanding in vulnerable regions of the adaptation strategies most likely to reduce the risk and vulnerability associated with climate change.

3. Project Methodology

The objectives of the project were to (i) identify industries and regions in Queensland that are vulnerable to climate change; and (ii) undertake a number of workshops, on a needs and interest basis, using the Climate Risk Matrix approach targeted at primary producers to communicate the risks of climate change and develop adaptation pathways. Central Queensland was identified as a vulnerable region, with predicted changes in temperature, rainfall and evaporative regimes. Climate change risk matrix workshops were conducted in three locations in the region (Ayr, Rockhampton and Calliope), based on perceived need and interest from local stakeholders.

During each workshop, presentations on forecast regional trends and issues around climate change, risk and adaptation were delivered and discussed. Participants then worked in groups to complete the Risk, Vulnerability and Adaptation matrix for a number of industry elements and three climate variables. Groups developed matrices and summary statements for each element. These were then discussed and collated in a final full group session.

At the conclusion of the workshops, participants were asked to individually complete an evaluation questionnaire.

4. Project Results

A total of 44 community members from a range of sectors attended three Central Queensland workshops. Attendance by participants identifying with the agricultural sector was relatively high at all three workshops (34% of attendees overall).

Across the three workshops, eleven Risk and Vulnerability Matrices were developed by participants for a range of key regional issues. These are detailed in the attached report.

Post-workshop evaluation results indicated that stakeholders found the workshops both useful and effective in raising awareness about climate change, its predicted regional impacts and adaptation issues. Workshop participants found the experience of working through the risk matrix process particularly beneficial and were keen to see additional follow up workshops run, focusing on specific industries and organisations, within the region. Many said that, following the workshop, they were motivated to seek additional information and to continue to work and promote the need for climate change adaptation within their organisation and networks.

In addition to the workshops, we have developed a number of case studies showing examples of practical adaptation. Examples of these appear in the 13 regional climate change adaptation brochures (Cobon et al. 2017) recently printed and soon to be published online. These brochures —which have been reviewed by agriculture experts, NRM groups and risk matrix workshop participants—contain the latest published climate change information and provide regionally relevant information about climate change impacts on agricultural industries, biodiversity and human well-being and likely responses needed to adapt to the changing climate within each region. They are expected to be a valuable resource for NRM groups, local government, state government agencies (e.g. EHP, NRM, DAF, DSITI) and industry groups completing plans for adapting to climate change. In addition, they will complement the regional climate change impact summaries prepared by the Queensland Government <https://www.qld.gov.au/environment/climate/projections/> and the Queensland Climate Change Adaptation Strategy for agriculture <http://www.ehp.qld.gov.au/assets/documents/climate/climate-change-adaptation-paper.pdf>.

5. Conclusion

The Risk Management Matrix is an extremely useful tool to help industry, NRM and primary producers to assess the risks associated with climate change and to evaluate the effectiveness of adaptation options in managing those risks. The introduction of the Regional Climate Change Projection and Adaptation brochures will be a valuable resource in regional adaptation and planning for climate change

Future directions

Feedback and subsequent discussions with stakeholders indicate potential partners for future work are NRM groups (e.g. QMDC, FBA, BMRG and Capricornia Catchments, NQ Dry Tropics, Reef Catchments), emergency management (e.g. fire groups within BMRG, QMDC) and local government (strategic partnership with EHP in local government briefings).

6. Financial Statement (Revenue received/Expenses paid/Revenue unspent

TBA

7. Additional Information

Additional information is available in the project report Drought Climate Adaptation Program. Project 5: Regional climate change adaptation for agricultural industries. Final report, June 2017 (see Appendix 1).

8. References

Cobon, D.H., Stone, G.S., Carter, J. O., Scanlan, J., Toombs, N. R., Zhang, X., Willcocks, J., and McKeon, G. M. (2009). The climate change risk management matrix for the grazing industry of northern Australia. *Rangl. J.* 31 (1), 31-49.

Cobon DH, Terwijn M, and Williams AAJ (2017). Impacts and adaptation strategies for a variable and changing climate in [the NRM group name]. International Centre for Applied Climate Sciences, University of Southern Queensland, Toowoomba, Queensland, Australia.

QDERM (2011). Climate change risk management matrix: a process for assessing impacts, adaptation, risk and vulnerability. Workbook. Brisbane Qld, Australia: State of Queensland Department of Environment and Resource Management (QDERM).

9. Appendices/Attachments

9.1 Milestone Reports

9.2 Case Studies

9.3 Project Reports

Appendix 1. Drought Climate Adaptation Program. Project 5: Regional climate change adaptation for agricultural industries. Final report, June 2017.

(Note. This report will be updated when information from upcoming workshops is available).

9.4 Scientific Papers

9.5 Products/Product Descriptions

9.6 Other Relevant Attachments

Risk Management Workshop Presentation (PDF)

Climate and Fire Workshop (PDF)

Appendix 1. Drought Climate Adaptation Program. Project 5: Regional climate change adaptation for agricultural industries. Final report, June 2017.



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