Projected impact of climate change
what farmers say
farmers talk about their options

summary

The message from farmers is that their immediate issue of concern is climate variability, not climate change.

Many farmers seem confident in their ability to manage for climate variability. They have adopted strategies in response to recent drought and flood events.

Their resilience showcases the capacity of Tasmanian farmers to adapt to a changing climate.

Over the past decade, Tasmanian farmers have experienced extremely wet years and some of the warmest and driest years on record. Scientists suggest that climate will be even more variable in the future.

What does climate variability and climate change mean to Tasmania's farmers?

what farmers say

Farmers talk about climate variability and change

Tasmania's farmers were involved in a national project to collect information on the potential impacts of climate variability and to assess current or future adaptation options. Farmers selected to take part in the project were from a single farm unit where a mix of agricultural operations (or enterprises) were practiced to maximise overall farm income from different sources.

Workshops were held in 2009 with farmers from six different locations across Tasmania (Sassafras, Forth, Cressy, Oatlands, Hamilton and Richmond).

Photo: Laurie Bonney

Farmers were shown future climate projections from Climate Futures for Tasmania, specifically those most relevant to their region. The potential impacts of climate change on the growth and yield of different crops and pasture were discussed.

An increase in minimum temperatures was seen as beneficial for crop, pasture and livestock production, but climate change was not perceived as an immediate concern compared to climate variability.

When shown future climate projections, farmers were most concerned about the chance and frequency of extreme events, particularly late frosts and prolonged dry periods.

Farmers were asked three questions:

1. *What are you doing to manage for climate variability?*
2. *What might you do in the future?*
3. *What might prevent making changes to improve management for climate variability?*

what farmers say

Farmers say they are constantly adapting to climate

Tasmanian farmers said they were constantly adapting to climatic conditions. Farmers in Tasmania's north discussed the high rainfall events of 2009, and their management under very wet conditions;

- using of raised beds, underground drainage, flexible crop rotations,
- moving stock to dry land,
- fodder conservation (grain/silage/hay/standing biomass) in wet years to feed out in the dry.

Farmers affected by recent drought in southern Tasmania (2006 to 2008) had destocked to one third of their 'normal' stocking rate during the drought, and were under-stocked going into 2009. These farmers identified the following strategies for effective drought management;

- irrigation from a variety of sources for crops and pasture,
- planting of fodder and dual purpose crops, fodder conservation
- destocking,
- changing the livestock mix (cattle to sheep, wool to meat sheep/stud stock),
- drought tolerant pastures
- reliance on non-farm income sources

Farmers discuss how they will adapt to future climate scenarios

Farmers' take on the future depended on likely climate changes in their region and the opportunities or challenges this may bring. What was a current management strategy for some farmers was seen as a future option for farmers working in different regions. For example fodder crops were prevalent in some regions but were as a possibility to be considered in other regions. Farmers discussed adaptation options such as;

- changing sowing /harvesting times for crops (earlier crops, earlier harvests),
- changing stock management eg earlier or later lambing, and stock agistment,
- planting fodder crops,
- planting new crop and pasture cultivars,
- controlled traffic farming,
- state of the art machinery,
- increasing diversity on the farm and crop conversion eg to perennial horticulture.

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what farmers say

Adapting for climate change: case study


Photo: Suzie Gaynor

James Walch is a Tasmanian farmer who, since the early 1990s, has gradually made the transition from a pure-wool production focus to a mixed farming enterprise. '*Stewarton*' is a 720 ha property in the Northern Midlands of Tasmania. James produces a range of crops, including potatoes, poppies, cereals and lucerne, and runs a fine-wool enterprise. The opportunities and challenges James faces on his property were highlighted in many of the comments made by producers during the workshops.

James relies on irrigation for crop and some pasture production (lucerne and short-term ryegrass) and has explored a number of options for a reliable supply of water, including supplies from the river, from bores, and from irrigations schemes.

> "*Climate variability is the real issue in my life time rather than climate change.*

Stewarton is well placed at the junction of two rivers, to capture water for a recently built 300 ML dam. However, when water supplies are low, James bases the type and area of crop sown on the amount of irrigation water available. He assesses future climate projections in terms of what they mean for his farm business and for the environment. For example, he weighs up the benefit of harnessing greater winter runoff versus allowing more water down the river as environmental flow, and considers the role of catchment-scale water management plans in addressing these issues.

> "*If the frequency of frosts decreases then we will grow the same crops, with a lower risk. I wouldn't do anything different, but would just have the bonus of less worry about frost.*

James aims to minimise environmental and production costs by using minimum tillage and green manures. He uses soil nutrient tests to assist in decision-making around use of pasture fertilisers. In difficult areas, he has moved from a ryegrass/subclover mix to a phalaris/fescue with a range of other clovers to maximise the longevity of the pasture resource. He also aims to store fodder (lucerne) for drier years. James believes risk can be minimised by maintaining (or increasing) flexibility on the farm, and that these activities are also relevant in the future.

James says '*climate variability is the real issue in my life time rather than climate change. The political outcomes of climate change, like carbon tax, will have a greater impact than actual climate change*'. He believes that the future climate story for Tasmania is a positive one, particularly the increased temperatures that may decrease frost risk for a range of currently risky crops.

'*If the frequency of frosts decreases then we will grow the same crops with a lower risk. I wouldn't do anything different, but would just have the bonus of less worry about frost,*' James concluded.


James Walch, 'Stewarton'

James has used services funded by NRM North and other extension agencies to develop a detailed property plan for Stewarton, including an irrigation plan, a natural resource management plan and a carbon audit. These tools assist James in his decision making.

> *Doing what you now do well is a strong message to come from James' approach on 'Stewarton'.*

Farmers say they are constantly adapting to climate, cont.

Most farmers stated that they thought there would be little change to the way they managed climate variability in the near future. They described themselves as versatile; running flexible and diverse enterprise mixes.

Farmers said that climate is only one factor in complex decisions about change on their farms. Farmers in all regions commented that their decision making was based on current prices and markets, and that this would not change in the future.

Responding to costs of production drives the diversity of enterprises. There is usually an uncomfortable feeling about risks associated with change and the potential negative impact this could have on profitability. They felt this risk was heightened by:

- ***The "unknowns" of the future:*** costs of production, returns on investment, market demands, and cost of compliance with legislative requirements.
- ***High labour costs and unavailability of labour:*** many farmers illustrated this point by stating that people could earn more income off-farm than on-farm.
- ***Land use change:*** for farmers interviewed in two regions located in close proximity to major population centres, the price of land for subdivision far outweighs its agricultural value.
- ***The availability of water for irrigation:*** this was raised as a concern by farmers in two regions especially by farmers from the central midlands, who have been more severely impacted by drought. These farmers, with a strong grazing focus and currently the least access to water, perceived fewer opportunities to diversify and adapt, particularly into cropping.
- ***Research and extension:*** farmers felt that improved access to research and extension services would also help them prepare for climate change.

Tasmanian farmers have been coping with climate variability over the past decades. As a result, a culture of resilience has developed providing farmers with a high degree of knowledge and expertise to accommodate increasing climate variability.

The excellent potential of Tasmanian farmers to adapt to a changing climate, while minimising risk and making the most of new opportunities, is illustrated by the case study with James Walch.

Photo: Suzie Gaynor

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www.daff.gov.au/climatechange

Australian Government
Department of Agriculture, Fisheries and Forestry

For further information on how this research fits into a national research activity visit:

http://www.csiro.au/Organisation-Structure/Flagships/Climate-Adaptation-Flagship/resilient-farmers.aspx

what farmers say

About Climate Futures for Tasmania

The material in this information sheet was developed from outputs from the Climate Futures for Tasmania project. In particular, from the Impacts on Agriculture Technical Report (Holz et al 2010) (Holz et al 2010).

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The Climate Futures for Tasmania project was managed by the Antarctic Climate & Ecosystems Cooperative Research Centre (ACE CRC). For more information about the project go to:

www.acecrc.org.au

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This information sheet is a joint production of the Tasmanian Government and the Tasmanian Institute of Agriculture.

Further information

This information sheet is part of a series produced by TIA on the impacts of climate change in agriculture. The full suite of information sheets is available at:

www.dpipwe.tas.gov.au/climatechange

The Tasmanian Government's Tasmanian Climate Change Office (TCCO) provides information on climate change mitigation, and adaptation programs and options:

www.climatechange.tas.gov.au

Climate Futures for Tasmania reports provide information on the impacts of climate change in Tasmania on general climate, water and catchments, impacts on agriculture and extreme events:

www.climatechange.tas.gov.au

The Bureau of Meteorology provides data on weather forecasts and climate variability:

www.bom.gov.au

For further information to assist farmers and potential investors to allow comparisons to be made between enterprises including cash crop and livestock enterprise tools visit

www.dpipwe.tas.gov.au/wealthfromwater

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