Sustainable Farms Mental Health Research Report

September 2022

Background

Five years ago, Sustainable Farms set out to understand more about the links between farmer mental health and natural resource management. The Sustainable Farms ecologists had heard anecdotal reports from farmers in our network that their engagement in activities such as tree planting helped their mental health, particularly during times of drought.

Given the evidence that aspects of farm life pose *risks* for farmer mental health, we were keen to understand whether engaging in environmental practices on farmland could provide a significant benefit for a farmer's mental health and wellbeing.

The unique longitudinal data about biodiversity on farms gathered by the ecology team provided an opportunity to look for relationships between on-farm biodiversity and farmer mental health. Additionally, there was also an opportunity to increase our understanding of the access to mental health services in rural areas, and to develop our understanding of the challenges and opportunities to support farmer wellbeing and mental health.

The team and collaborators

Sustainable Farms was established as a cross-college initiative at ANU to enable the links between mental health and biodiversity to be explored.

Professor Phil Batterham (pictured top right), Co-Head of the Centre for Mental Health Research within the Research School of Population Health at ANU, was appointed as Sustainable Farms Mental Health Research Director.

Research Officer Kimberly Brown (pictured bottom right) brought significant experience in rural mental health to the team, while also completing her PhD exploring the social and wellbeing benefits of regenerative farming practices.

They worked closely with colleagues from the Centre for Mental Health Research at ANU, including **Professor Alison Calear** and **Associate Professor Michelle Banfield**. They also collaborated with **Professor Jacki Schirmer**, from the University of Canberra, who leads the Regional Wellbeing Survey (RWS). The RWS canvasses the views of 15,000 Australians annually about the liveability and resilience of their communities, and their own wellbeing and resilience.

Summary of findings

The research undertaken by the Sustainable Farms team fell into two categories: relationships between the natural environment and mental health or wellbeing; and mental health in rural settings and differences when compared to urban settings.

Natural asset management, ecology and farmer mental health/wellbeing

A first step in the mental health stream of work undertaken by Sustainable Farms was to investigate what literature already existed on the topic. The team systematically reviewed the existing literature and found very few studies investigating the impact of natural asset management or biodiversity on mental health in rural settings. Most studies focused on the negative impacts that drought, heat, natural disasters and environmental degradation had on mental health, without corresponding work on the inverse.

Given the lack of existing information on the relationship between natural asset management, biodiversity and farmer mental health/wellbeing, two means of investigating these relationships were then developed by the team. The first, FarmWell, led by Professor Batterham, involved a highly targeted survey distributed to landholders who are part of Sustainable Farms long-term ecological monitoring. 63 farmers participated in the survey, and data was linked with existing farm-level vegetation and biodiversity data. The survey was unable to identify a direct relationship between these factors, finding instead that financial struggle and worry had a greater impact on farmer mental health.

Similarly, a larger study conducted via the Regional Wellbeing Survey and led by Kimberly Brown found no direct relationship between wellbeing and the activity of tree planting – but it did make an important finding that tree planting increased social connectedness. Additionally, the study found that farmers who undertook broader, farm-scale change in natural resource management practices did experience positive impacts on wellbeing.

Mental health in rural settings

The team's work in this area found no significant differences between rural and urban populations in mental health service use *or* the impacts of COVID-19. Both of these findings were unexpected.

The first study, on mental health service use, drew on data from 2347 participants via the *Assessing Mental Health Survey,* and assessed the differences in service use between rural and urban people with mental health problems. Popular wisdom has suggested that farmer mental health suffers when compared to urban people due to a lack of access to mental health services, but this hypothesis was not supported by the ANU research. The study, led by Professor Batterham, found no differences between rural and urban populations in accessing GPs, psychiatrists and counsellors. However, rural participants reported a lower level of use of psychologists when compared to urban/regional areas, which may be an important gap in service delivery.

A further study was undertaken to assess the impact of COVID-19 on mental health during the onset of the pandemic (March to June 2020). Elevated rates of depression and anxiety were observed across rural, regional and urban Australia, but these reduced back to pre-pandemic levels over time and no significant differences observed *between* rural, regional and urban areas.

Implications

Australian agriculture is currently at a tipping point between the risks and impacts of climate change and biodiversity loss, and the potential benefits for farmers of market-based mechanisms for addressing these threats. Our work suggests that the benefits for farmer wellbeing of engaging in NRM practices derive more from the social connectedness farmers experience through this work, rather than the outcomes of improved biodiversity. When taken alongside the findings that financial stress and worry have a greater impact on farmer mental health than vegetation or biodiversity, questions emerge for how incentive schemes and market-based mechanisms targeting vegetation or biodiversity may impact on these other factors and thus potentially on farmer mental health and wellbeing.

The greatest benefit to farmer mental health through practices such as tree-planting may arise from the social connectedness experienced through this work.

These factors must be considered in the design of schemes that may have wide-ranging, long-lasting impacts not only on agricultural landscapes, but on the farmers and communities who are connected with these landscapes.

Attempting to tease out the relationships between a farm's ecology and a farmer's mental health is particularly tricky: both areas of research are complex thanks to the myriad factors involved and the challenges of identifying causal relationships. While our research outcomes in no way negate the importance of tree-planting and of improving a farm's vegetation and biodiversity, it suggests that the social and community context around tree-planting may be even more important to farmer wellbeing as the outcome generated. Future work in this area needs to target the role that social community connections and of local knowledge and action in addressing the challenges of our time.

Annotated bibliography

Systematic review: Batterham PJ, Brown K, Trias A, Poyser C, Kazan D, Calear AL (2022). Systematic review of quantitative studies assessing the relationship between environment and mental health in rural areas. *Australian Journal of Rural Health*, 30(3), 306-320. doi: 10.1111/ajr.12851

This project reviewed the existing literature on the relationship between the natural environment and mental health in rural settings. There were very few studies on the mental health impacts of natural asset management or biodiversity in rural settings, with only 28 studies meeting criteria for inclusion in the review.

Most studies focused on the negative impacts that drought, heat, natural disasters and degradation had on mental health. Most studies compared different communities or changes over time, rather than observing effects for individuals.

Mental health service use: Batterham PJ, Kazan D, Banfield M, Brown K (2020). Differences in mental health service use between urban and rural areas of Australia. *Australian Psychologist*, 55(4), 327–335. doi: 10.1111/ap.12449

This study assessed the differences in service use between rural and urban people with mental health problems. The *Assessing Mental Health Survey* included data from 2347 participants who had a mental health condition. No differences in accessing GPs, psychiatrists and counsellors were found, however rural participants reported significantly lower levels of use of psychologists compared to regional/urban areas. This difference was regardless of perceptions of community stigma or severity of symptoms.

Mental health impacts of COVID-19: Batterham PJ, Calear AL, McCallum SM, Morse AR, Banfield M, Farrer LM, Gulliver A, Cherbuin N, Rodney Harris RM, Shou Y, Dawel A (2021). Trajectories of depression and anxiety symptoms during the COVID-19 pandemic in a representative Australian adult cohort. *Medical Journal of Australia*, 214, 462–468. doi: 10.5694/mja2.51043

With the onset of the COVID-19 pandemic in early 2020, research was undertaken to assess the impact of COVID-19 on mental health. A longitudinal sample of 1,296 adults across rural, regional and urban Australia completed 7 surveys on various self-report scales to measure depression, anxiety, COVID-related financial stress and social impairment. While elevated rates of depression and anxiety were observed, these reduced back to pre-pandemic levels over time. There were no significant differences in the mental health of participants in rural, regional or urban areas.

FarmWell Study: Batterham PJ, Brown K, Calear AL, Lindenmayer DB, Hingee K, Poyser C (2022). The FarmWell Study: Examining relationships between farm environment, financial status and the mental health and wellbeing of farmers. *Psychiatry Research Communications,* 2(2), 100036. doi: 10.1016/j.psycom.2022.100036

This study aimed to assess the relationship between environmental indicators, perceived financial state and mental health/wellbeing. 63 farmers participating in the long-term ecological monitoring program completed a survey about their mental health, wellbeing, financial state and participation/values toward natural asset management. Data was then linked with farm-level vegetation and biodiversity data for analysis.

No direct relationship between vegetation, biodiversity or natural asset management and farmer mental health/wellbeing was found. Poorer mental health/wellbeing among farmers was found to be associated with financial struggle and worry. A follow-up cross-sectional survey in a representative sample of Australian adults (n=1091) has been conducted to better understand relationships between environment values, perceived quality of the local natural environment and mental health/wellbeing, and test how this varies from rural to urban areas.

Regional Wellbeing Survey: Brown K, Batterham PJ, Schirmer J, Upton P (2022). Principles or practice? The impact of natural resource management on farmer wellbeing and social connectedness. *Society & Natural Resources*, 35(10), 1083-1101. doi: 10.1080/08941920.2022.2058133

In 2018, the Sustainable Farms project included a series of questions in the Regional Wellbeing Survey to help better understand the relationship between natural asset management and farmer wellbeing. Data was used to examine whether or not farmers engaging in a common form of natural asset management – tree planting – had higher levels of wellbeing and social connectedness compared to farmer who didn't.

While no relationship between wellbeing and tree planting was found, tree planting was found to be associated with social connectedness. As social interaction is considered to be an important wellbeing determinant, these findings suggest natural asset management may have indirect impact on farmer wellbeing Additionally, farmers who undertook tree-planting as part of a broader, farm-scale change did experience positive impacts on wellbeing.