The Mental Wellbeing of Farmers in Ireland

A thesis submitted in fulfilment of the degree of Doctor of Philosophy

By

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THESIS ABSTRACT

This thesis investigates the context of farming in Ireland, in terms of its impact on farmers' mental wellbeing. International research has highlighted the multitude of potential stressors affecting farmers. Despite the importance of farmers' mental wellbeing for ensuring the future viability of farming, few studies have examined the mental wellbeing of farmers in Ireland. This is all the more important as the COVID-19 pandemic has brought into focus questions of mental wellbeing and the role of occupation in health and wellbeing generally. This thesis draws on data from the Irish Longitudinal Study on Ageing to consider psychometric outcomes for farmers relative to a rural, working, non-farmer cohort before and during the COVID-19 pandemic. Building on this, qualitative research methods are employed to investigate how the COVID-19 pandemic reshaped life for farmers in Ireland. Findings indicate that while the disruptions in pre-pandemic patterns of life were distressing, farmers adapted through new practices and found psychological support in the continuities of farming life. This thesis argues for conceptualising farming as a therapeutic landscape with physical, social, and emotional dimensions, which farmers draw on to support positive mental wellbeing. In conclusion, it is argued that economic processes of farm consolidation and challenges in farm succession will place strain on the social landscape of farming.

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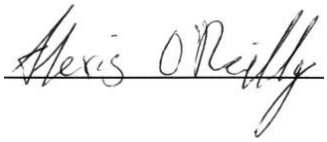
STATEMENT

I, Alexis O'Reilly, confirm that the work submitted is my own and that appropriate credit has been given where reference has been made to the work of others. This work has not been submitted in any form for another degree or diploma at any other university or institution of tertiary education.

Signed: 

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INTRODUCTION

1. Background, Aim and Objectives

This thesis is an investigation into the mental wellbeing of farmers in Ireland including in the context of the COVID-19 pandemic. Studies internationally have investigated the wellbeing and mental health of farmers and indicate a broad inequity in farmers' mental wellbeing relative to non-farmers (Brew et al, 2016; Cassidy et al., 2024). Research has investigated the acute stressors for farmers and the link between these factors and poor farmer wellbeing. These factors include physical dangers on farms, variability in climate and farm finances, animal disease, large workload and burnout, navigating bureaucracy and isolation (Brennan et al., 2022; Furey et al., 2016; Firnhaber et al., 2023; Hammersley et al., 2021; O'Connor et al., 2024).

Despite the important role that farming has in the economy and society of Ireland there has, until recently, been insufficient research on farmers' mental wellbeing. Whilst the emergence of a body of literature considering the occupational stressors and wellbeing of farmers, e.g. Brennan et al., 2022 and Hammersley et al, 2021, there has been no research using a nationally representative dataset to investigate farmers' wellbeing relative to non-farmers. There has been limited qualitative research investigating the mental wellbeing of farmers in Ireland, that is largely focused on issues of fatigue, burnout and health seeking, e.g. Firnhaber et al., 2023 or O'Connor et al., 2024.

The COVID-19 pandemic has also sharpened the focus on mental health and wellbeing as key public health concerns (Budge and Shortall, 2022; Budge and Shortall, 2023; Rose et al., 2023). The issue of isolation and a transition to a greater use of technology have been highlighted as public health and occupational health concerns (O'Reilly et al., 2023; Rose et al, 2021). For farmers, issues of isolation and a growing burden of paperwork and bureaucracy are established as potential health concerns by researchers (Hammersley et al., 2021). For these reasons, it is important for researchers to investigate more fully the wellbeing of farmers in general as well as in the context of the COVID-19 pandemic and to consider if the pandemic has played a role in exacerbating key stressors for farmers and if this has negatively impacted on their mental wellbeing (Rose et al., 2021). Equally, there is a need to consider the alternative possibility,

namely that farming practices and traditions are protective of mental wellbeing (Burnette et al., 2018).

Given this context and the knowledge gaps briefly introduced above, the aim of this to provide insights into the mental wellbeing of Irish farmers alongside a fuller consideration of how farming as a practice and occupation, deepens our understanding of working therapeutic landscapes. Linked to this, there are key objectives/research questions within this study. These are:

(a) *What is the status of farmers' mental wellbeing relative to non-farmers? Were farmers particularly at risk of poorer mental wellbeing in the context of the COVID-19 pandemic?*
(b) *How did the COVID-19 pandemic reshape life for farmers in Ireland? How did farmers adapt to the pressures of the COVID-19 pandemic in terms of their mental wellbeing?*
(c) *How can we conceptualize farming in Ireland as representing working therapeutic landscapes?*

Each of these questions is explored individually in Sections 3 – 5, i.e. the three papers at the heart of the thesis, before the overall aim is considered in Section 6.

Whilst there are several relational perspectives that could be applied to this study, geographies of health and wellbeing have advanced innovative frameworks for considering individual health and wellbeing in context. This study provides an opportunity to apply these frameworks to an empirical piece of research integrating quantitative and qualitative methods. Research on the relationship between wellbeing and green and blue space has been growing and this has developed from studies of 'therapeutic landscapes' and 'therapeutic taskscapes', that consider place connections beyond material and social settings (Bell et al., 2018, De Bell et al., 2017; Pasanen et al., 2019; White et al., 2020). This framework has not yet been applied to farmers who have a strong place connection because of their relationship with the land and their immersion in a rural and farming tradition. The framework of green and blue space has also tended to have a positive focus on the role of natural environments, with a stronger focus on leisure rather than work. This literature has failed to consider the potential stresses inherent in working outdoors in adverse conditions. It also fails to consider the dangers and demands of working with livestock and the potential for loneliness and isolation. Equally, the literature on farmers' health and wellbeing internationally has yet to sufficiently consider how the strength of farmers' place connection

may be positive for health and wellbeing. This thesis also makes theoretical use of relational

geographies, and ideas drawn from socio-ecological models and therapeutic landscapes. These concepts overlap and are complementary in that they are attentive to the multiplicity of factors, material, social and cultural, that shape mental health and wellbeing in place, and how these factors mutually interact and are in constant evolution. While different terms are used in relation to health and wellbeing in the empirical chapters of this thesis to reflect key terms used in different journals, I am grouping these under the unifying concept of mental wellbeing.

1.1 Thesis Structure and Content

This thesis comprises three empirical chapters published or submitted for publication as peer reviewed journals. Paper 1 has been accepted for resubmission with minor revisions to the *Journal of Agromedicine* and is co-authored with Dr. David Meredith, Dr. Christine McGarrigle and Dr. Ronan Foley. Paper 2 has been published in a special issue of the journal, *Sociologia Ruralis* and is co-authored with Dr. David Meredith, Dr. Ronan Foley and Dr. Jack McCarthy. Paper 3 has been resubmitted to the journal *Wellbeing, Space & Society* after review and redrafting based on reviewers' suggested changes. Paper 3 was coauthored with Dr. David Meredith and Dr. Ronan Foley. These papers have been presented as published or most recent draft, in compliance with journal guidelines but with minor edits to create a consistent structure across the thesis and single bibliography. This includes a change in references for paper one from footnotes to internal citations. Whilst these three papers form the core of the thesis they are situated within a broader theoretical, conceptual, and methodological framework that is presented in this Introduction and the subsequent Methods section.

The remainder of this introduction develops the contextual and conceptual framework for the research. The contextual elements outline the nature of farming in Ireland, alongside the demographic composition of farmers, the nature of farm systems and a broad introduction to the geography and history of farming in Ireland. The term 'farmers' in the context of this study refers to owner occupiers of farms, who as outlined in the first section of the introduction, represent a majority of Irish farmers. Farmer has also been used to refer to the families who collaborate with the owner occupier of the farm in its operation. This was important in ensuring a larger representation of women in the study. Non-farmers interviewed were included due to

their particular place within farming economy, society and culture. A minority of these individuals also own farms or assist practically with a family that own farms.

The remainder of the Introduction presents and assesses definitions of wellbeing and mental health. Literature on farmers' mental health internationally is introduced, including the key factors that are thought to influence mental wellbeing, e.g. physical hazards, climatic factors and drought, gender and gendered norms and isolation. How these factors may, or may not, relate to farmers in the Irish context will also be explored. The specific research that has been undertaken into stress and wellbeing among farmers and rural Irish populations will then be reviewed. The body of work on wellbeing and mental health in the context of COVID-19 is briefly outlined as the pandemic and resulting public health measures impacted farmers and the development of this thesis. The final part of the literature review introduces the theoretical frameworks of relational geography, socio-ecological models and therapeutic landscapes and explains how this thesis will utilise and develop these theoretical ideas with the empirical material.

The methodology Section is divided between an introduction to The Irish Longitudinal Study on Ageing (TILDA), a core source for Paper 1, and the qualitative approach applied within Papers 2 and 3. The overview of TILDA summarizes the methodology, timeframe, sample frame, the composition of farmers in TILDA and, for comparative purposes, how this relates to material from the Census of Agriculture (2016). The categorizations of ‘rural’ and ‘farmer’ used in TILDA and the psychometric tests selected for analysis are then explained, while additional analysis of the TILDA dataset is provided in Appendix B. The statistical rationale for deploying multiple regression in Paper 1 is outlined incorporating its selection as most suitable for the analysis undertaken as part of this thesis.

The qualitative methods that form the basis for Papers 2 and 3 are then introduced, including the choice and use of semi-structured interviews with farmers and non-farmers, research ethics, developing the interview questions, the use of a snowball method for recruitment, key characteristics of describing the research participants, and transcribing and coding the data.

Paper 1: The impact of the COVID-19 pandemic on wellbeing for older rural farmers and workers.

Paper one, titled 'The impact of the COVID-19 pandemic on wellbeing for older rural farmers and workers.' is an examination of farmer wellbeing measured using psychometric test scores in TILDA waves 5 (2018) and the COVID-19 Wave (2020). This paper is important as it provides a context for the research, i.e. it assesses the wellbeing of farmers and compares this to other, comparable, rural workers. It also enables us to assess the impact of the pandemic and associated public health measures on farmers. In this paper, mean scores for farmers and a non- farming rural worker cohort were compared. In Wave 5 farmers have higher perceived stress than non-farmers. Wave 6 results indicate that perceived stress was higher amongst non-farmers. Using multivariable regression to control for age and gender we found these differences are not statistically significant.

Paper 2: Continuity, change and new ways of being: An exploratory assessment of farmers' experiences and responses to public health restrictions during the COVID-19 pandemic in a rural Irish community.

Paper Two, titled, 'Continuity, change and new ways of being: An exploratory assessment of farmers' experiences and responses to public health restrictions during the COVID-19 pandemic in a rural Irish community' draws from a subset of interviews conducted in Ireland's Border Region in April and May of 2021. Drawing from these interviews, this paper discusses the change, continuity and new ways of being in the lives of farmers during the COVID-19 pandemic and how this shaped wellbeing. This paper discusses the social and economic disruptions that resulted from the COVID-19 pandemic, the ways in which farmers' lives and work created continuities that were positive for wellbeing and how farmers used technology and preexisting networks of support to adapt in the context of the COVID-19 pandemic.

Paper 3: Therapeutic Landscapes of farming in Ireland

Paper Three is entitled, 'Therapeutic Landscapes of farming in Ireland'. Drawing from 28 interviews conducted from April of 2021 to February of 2023, this article draws on literature that utilises the concept of therapeutic landscapes to consider the role of material, social and emotional landscapes in shaping farmers' wellbeing. This article moves from a more time bound

and geographically specific consideration of farmers' wellbeing during the COVID-19 pandemic to a wider investigation into a therapeutic landscape of farming in Ireland generally. This research considers the evolving physical, social and emotional world in Irish farming and what this means for farmers' health and wellbeing going forward. It also provides a new empirical and occupationally specific empirical study that broadens the current range and scope of therapeutic landscapes research.

1.2 THESIS CONTEXT AND SETTING

1.2.1 An overview of farming in Ireland

Agriculture, including forestry and fishing, forms an important part of Ireland's economy. The sector comprises 8.5% of national employment and when the broader supply chain is considered (inputs, processing, marketing) this figure rises to almost 10% (CSO, 2017). Farming in Ireland is dominated by livestock production which is linked to the production and utilization of grass. Unsurprisingly then, of the 4,509,256 hectares of farmland in Ireland 4,151,456 hectares (92.06 %) are grassland, 265,592 hectares (5.89%) are cereals, and 92,208 hectares (2.04%) are other crops such as fruit and vegetables (CSO, 2022). The Central Statistics Office (CSO) Census of Agriculture 2020 found that there are 130,200 farms in the Republic of Ireland with more than 5 hectares of land, worked by 278,600 people (CSO, 2022). Of these workers 47% (130,200) were the farm holders, 41% (114,300) were family members, and 12% were non-family workers (34,100). As of 2020 116,936 of farm holders are male (86.6%) and 180,101 (13.4%) are female. Women make up a greater portion of the farm workforce however, at 26.96%. This is connected to a culture of patrilineal farm inheritance and treatment of occupation or a sector that means women's roles in farming are often underestimated in official statistics (Shortall and Marangudakis, 2022). Farm holders in Ireland are an older population and 32.7% are 65 or older with only 6.9% are 35 years old or younger (CSO, 2022). For 53% of farm holders in Ireland farming is their sole occupation while 26% regard farming as their subsidiary occupation. The mean Standard Output (SO) of a farm in Ireland is €48,380. A farm's SO represents the average monetary value of agricultural products (crops and livestock) produced. This measure is commonly used in the EU to assess economic output and is particularly useful for comparing farm sizes and analyzing economic performance across the sector. Half of the farms had a

standard output equal to or less than €13,566 (CSO, 2022). The average farm size in Ireland is 33.4 hectares.

Farms in Ireland are typically smaller than in other advanced economies, shaped as they were historically by the breakup of large estates from the 1870s through to, at least, the 1960s, into smaller holdings (Eastwood et al., 2010). This process was largely driven by the collapse of subsistence farming in the mid-19th century as a consequence of potato blight and was replaced by farming for a commodity market, primarily driven by the export of live cattle (McCabe, 2011). Regional economic imbalances in agriculture were prominent as cattle were sold at an early stage, with less value added, by farmers in Ireland's peripheral west and north to farmers in Ireland's east, southeast and midlands who had the resources to fatten cattle for export (McCabe, 2011). This is reflected today in mean farm sizes across Ireland with a mean farm size of 25.5 hectares in Ireland's west (Galway, Mayo, Roscommon) and 39.4 hectares in Ireland's eastern midlands and mid-east region (Dublin, Kildare, Louth, Meath, Wicklow) (CSO, 2022). Nutrient rich soil in the South and East of Ireland has created the conditions for more profitable livestock farming and for tillage farming (Gillmor, 1977).

The social topography of Irish farming is also reflected in these regional imbalances, with concentrations of older farmers and farmers living alone in Ireland's economic periphery. These farmers may be at a greater risk of suffering isolation and poor health (Meredith, 2020).

1.2.2 An overview of the spatial structure of Irish agriculture

The topographical divisions of farming in Ireland are evident in Figures 1.1 - 1.3. The topographical divisions include the physical qualities of the Irish landscape, its classification in rural policy in terms of regional disadvantage and field size. This indicates a broadly north-west and south-east axis with the former representing Irish agriculture's economic periphery and the latter its core. In Figure 1.1 (Carlier et al., 2021) the capacity of land to produce food is summarized. The broad pattern highlights lowland areas , particularly the east and south of the country, that can be farmed intensively. In the west of Ireland, factors including high rainfall have created a distinct landscape with larger amounts of semi-natural vegetation and natural constraints on farming output than in the rest of the country (Forde, 2021).

FIGURE 1.1 LANDSCAPE CLASSIFICATION MAP OF THE REPUBLIC OF IRELAND

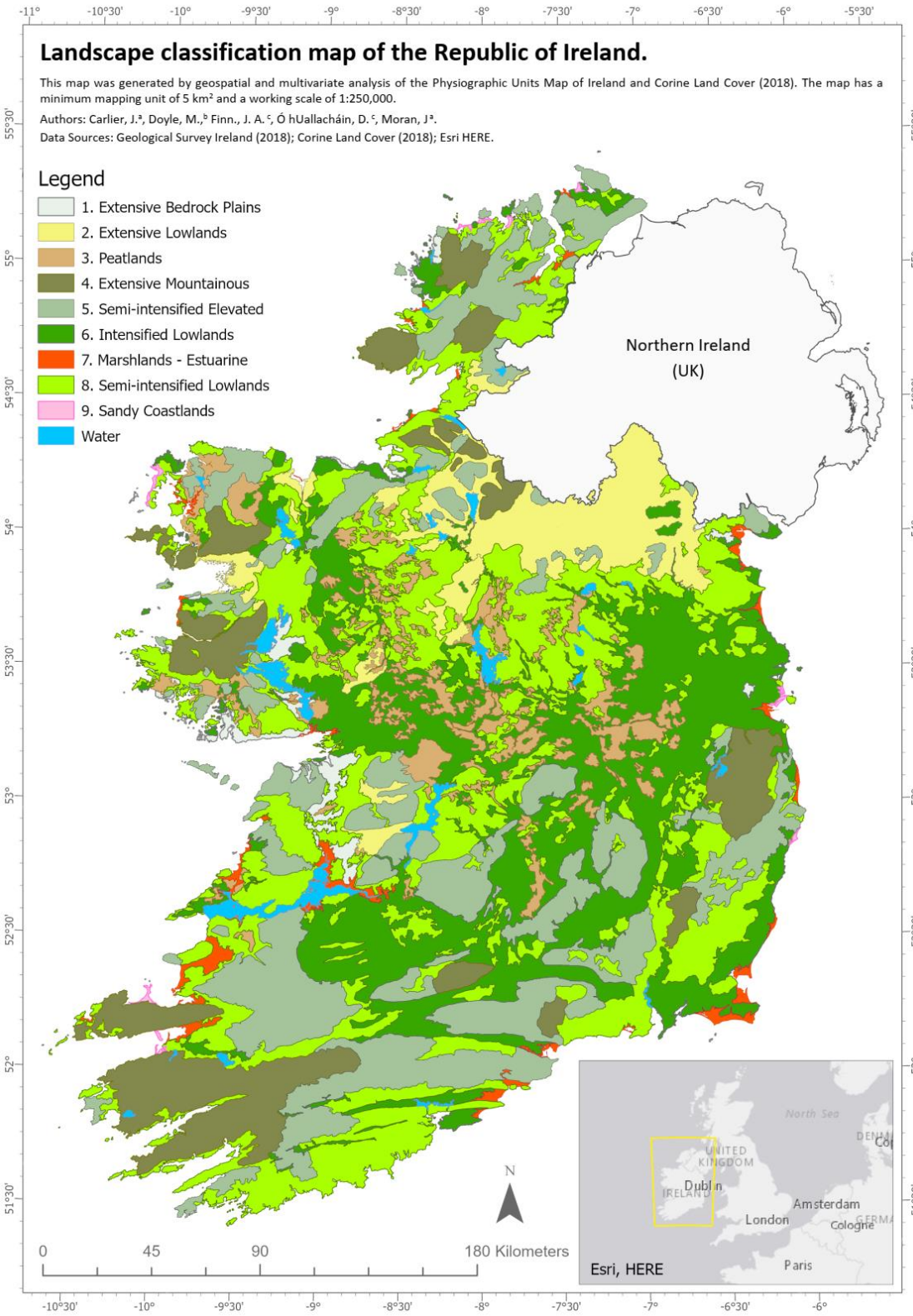


Figure 1.2 shows the division of Irish regions based on the Areas of Natural Constraint Scheme. Disadvantaged agricultural regions are outlined in color and agriculture's economic core regions in white. These regions are determined based on remoteness, poor soil quality and difficult topography (Collins et al., 2018). There is a high level of correspondence between the broad spatial patterns represented in Figure 1.1 and 1.2.

FIGURE 1.2 MSG AND DAS AREAS IN THE REPUBLIC OF IRELAND

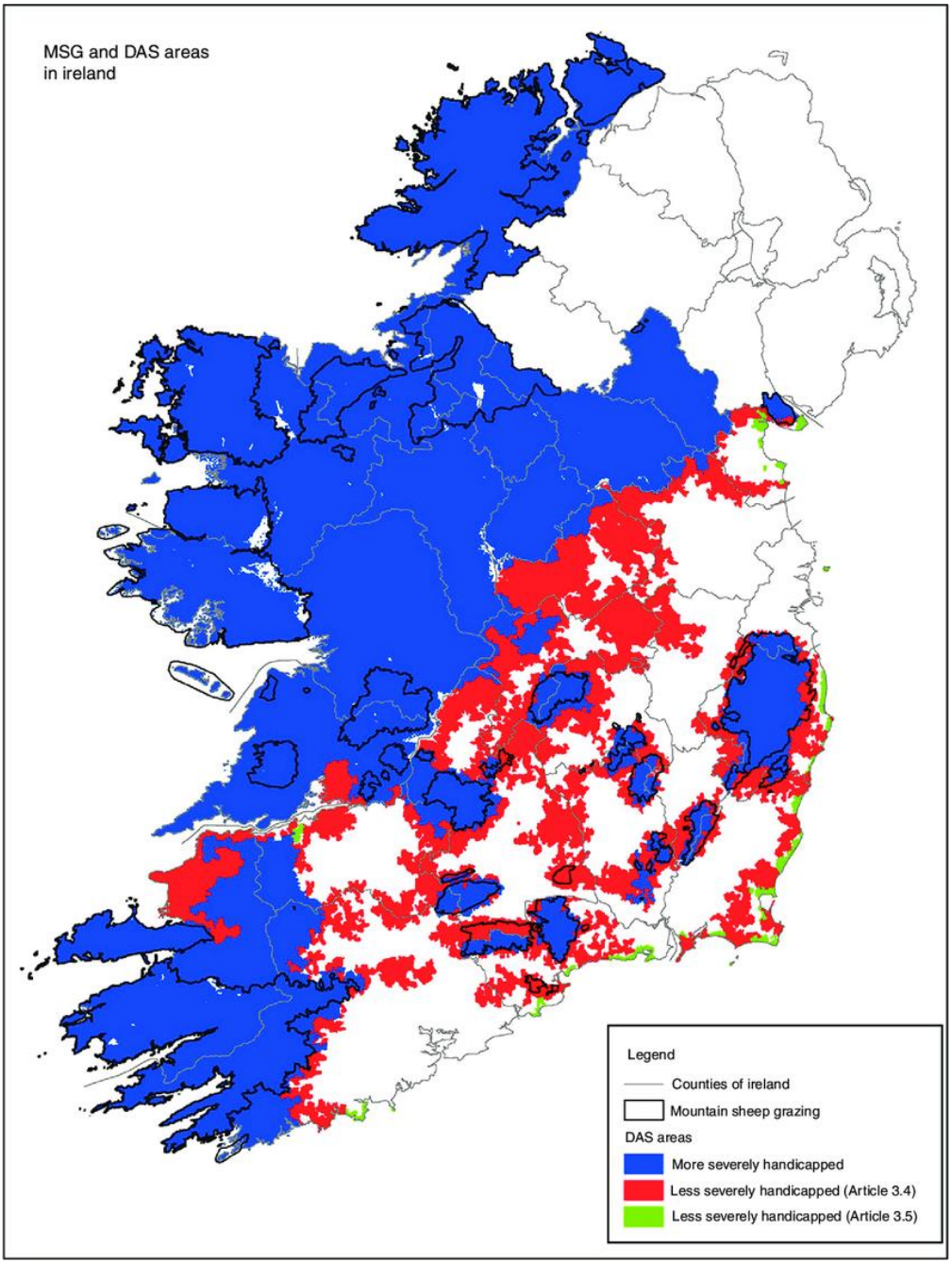
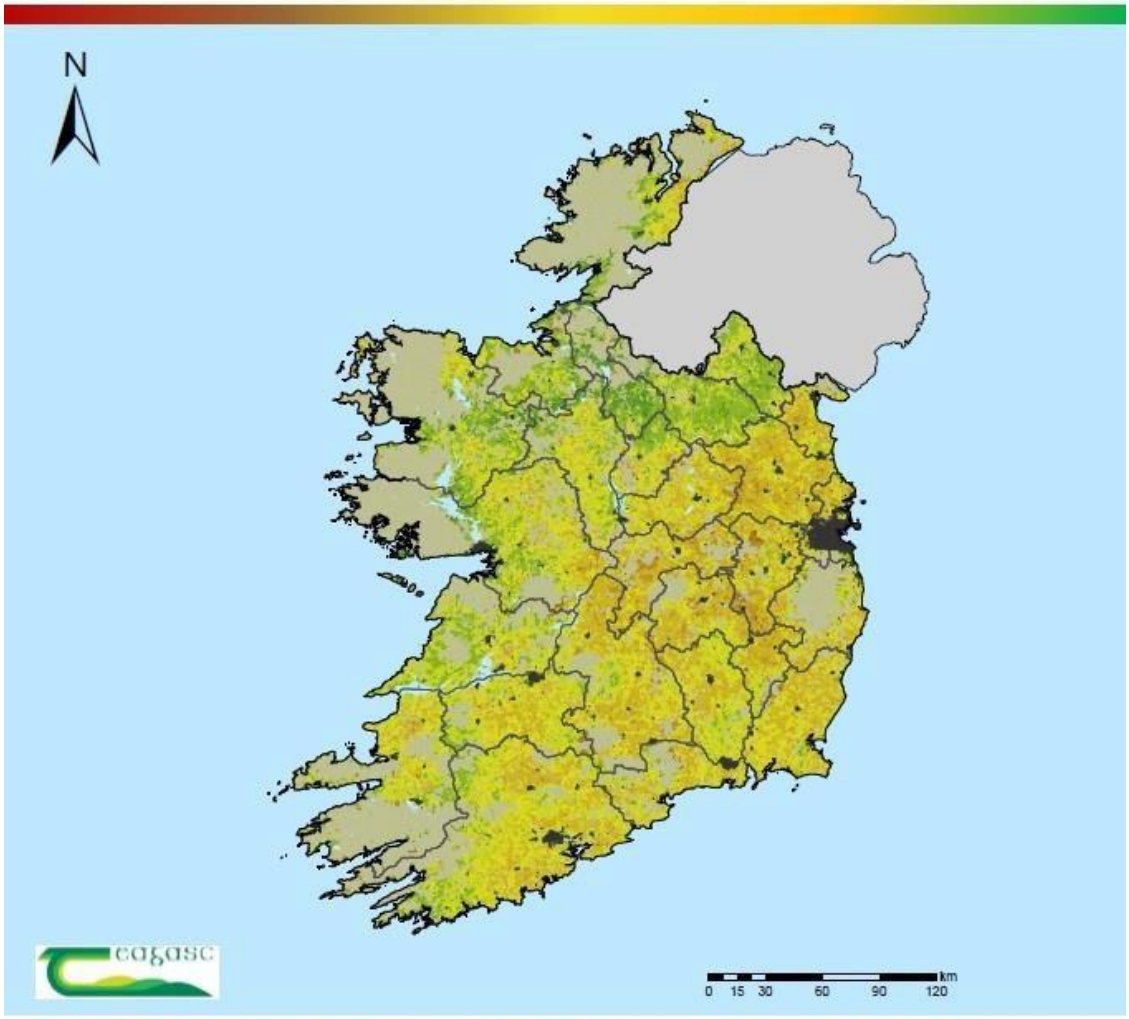


Figure 1.3 maps field sizes in Ireland and this reflects the pattern of a division of Irish agriculture on a northwest-southeast axis. Small farms and unenclosed mountain grazing are more prevalent in the west and north of Ireland. Larger farms are predominant in the south and east of Ireland(Zimmermann, 2012).

FIGURE 1.3 AVERAGE SIZE OF ENCLOSED AGRICULTURAL FIELDS BY TOWNLAND IN THE REPUBLIC OF IRELAND

Average size of enclosed agricultural fields by townland in the Republic of Ireland



The map shows the average size of agricultural fields in townlands calculated from the OSi Prime2 dataset.The analysis was limited to townlands with predominantly enclosed agricultural land as recorded in the CORINE land cover map. This was done to specifically remove large open uplands, blanket bog areas, waterbodies, as well as urban centres.
The national average enclosed field size was 2.5 ha. Generally large average field sizes are an indicator higher agricultural intensity however in some regions indicate large areas of extensive grazing.

Average field area [ha]

- < 0.25
- 0.25 - 0.75
- 0.75 - 1.3
- 1.3 - 1.9
- 1.9 - 2.5
- 2.5 - 5.0
- 5.0 - 12.5
- > 12.5

Other

- Urban area
- Unenclosed area

IRENET95 Irish Transverse Mercator

Datasets used:
EEA CORINE Land Cover 2012
OSi Prime2
OSi Townland Boundaries

Dr Jesko Zimmermann
Department of Agrifood Business and Spatial Analysis

1.3. LITERATURE REVIEW

1.3.1 Geographies of Health and Wellbeing

Research into human health is an important subdiscipline in Geography. This research has drawn from key geographical concepts of space and place as they relate to human health. The initial development of what was called 'medical geography' had two broad strands, one being epidemiology and the spatial patterning and diffusion of disease, whilst the other focused on geographies of health care planning and spatial inequalities in service provision and access (Meade and Earickson, 2000). Research was typically quantitative, investigating objective indicators of 'territorial social indicators' as well as place-specific disease causality (Smith, 1973). In line with shifts in geographical thinking and linked to the cultural 'turn' in the 1980s and 1990s, the subject has moved away from the biomedical and towards a social model of health, and the application of qualitative methodologies to enhance understanding of difference, gender, culture and the structural factors that shape inequalities between places (Kearns and Moon, 2002). The range and scope of topics has evolved since 2000, into what is now often referred to as geographies of health and wellbeing, completing a shift from pathogenic to salutogenic thinking, i.e. a problem-focused that seeks to treat illness, to a salutogenic approach concerned with resource allocation that aims to enhance health and resilience. Contemporary approaches combine these in integrated and multidisciplinary work at both global and micro-geographical levels. The recent COVID-19 pandemic has made the sub-discipline publicly visible, including the mapping of disease diffusion, differing mortality rates shaped by health care system type and response, but also recognising the social and cultural politics and the lived experience of the pandemic that continues to disproportionately affect vulnerable cohorts in society (Bambra et al., 2020; Foley, 2020b). One other general shift in geographies of health and wellbeing has been the embedding of critical relational thinking (Cummins et al., 2007 and discussed in Section 1.3.2.4 below), wherein experiences of illness and wellness are recognised as always complex and mobile, emerging in place through different sets of relations, with families, neighbourhood, social groups as well as through personal behaviours, cultural and economic circumstances and wider shifting care supports across the lifecourse (Brown et al., 2017) all of which have relevance for farmers' mental wellbeing.

Two other debates within geographies of health and wellbeing also shape this thesis. Investigations into the health outcomes of specific locations have considered the relative

importance of individuals who live in a place against the spatial context of the place itself. In so doing there is a focus on the dichotomy of 'context and composition', seeking to understand if a geographical context or the characteristics of a population occupying it are preeminent in determining health (Ross and Mirowsky, 2008). Drawing from theoretical advances in the field of geography including a more relational wellbeing framework, scholars reject a clear distinction between context and composition, seeing these as an interconnected series of processes (Andrews and Moon, 2005; Smith and Easterlow, 2005; Smyth, 2008). Geographies of wellbeing also consider the importance of space, understood as an interwoven and evolving set of economic, social, cultural processes and place, understood as the subjective experience and meaning imbued on locations by individuals, as key concepts in shaping health and wellbeing and this more complex understanding of place and process will inform the thesis. A second strand in the thesis incorporates Gesler's (1992) important concept of 'therapeutic landscapes', identifiable where material and built environments combine with reputation and memory to create an atmosphere of healing in particular places. Conradson (2005) has also integrated these ideas of therapeutic space with a more relational understanding of health benefits in considering the different outcomes for different users, from a rural-based study of a respite care centre in England. A key aspect of that work noted that being in a therapeutic landscape/setting was not, on its own, a guarantee of health or wellbeing benefit, but depended on individual immersions in (called imbrications by Conradson) and responses to that space. Foley (2011) uses holy wells in the rural Irish landscape to demonstrate that such therapeutic landscapes also contain a mix of material (the natural and built settings), metaphorical/symbolic (reputation and curative folklore) and performative (healing rituals and practices) components. The different ways in which people relate to and engage within therapeutic landscapes is a common theme and informs links between place and health across the thesis (more fully discussed in section 1.3.2.5 and across Paper 3).

One final and evolving body of work considering the healing potential of rural spaces and nature more generally, is through conscious health care interventions and recreational engagements within blue and green spaces (Foley, 2020a, Song et al., 2018; White et al., 2020). This interdisciplinary literature focuses on the positives of such environments for visitors and regular users (plus enhanced visiting during COVID-19) though it less often considers the experience of those who materially work in this space and how this shapes their wellbeing (Fornara et al., 2023). Literature on farmers' wellbeing, often in the discipline of psychology and

drawing from psychometric testing, tends to focus on the stresses and dangers of farming (Danghagh Yazd, 2019). It is therefore necessary to integrate the cumulative understanding of these different literatures. This study provides empirical context to discuss these theoretical innovations in wellbeing and give them unique empirical purchase by working with data collected in an occupationally specific (farming), geographically specific (Irish) and time specific (pre, during and post-COVID-19) context. The next sections discuss social ecology, relational geography, and therapeutic landscapes, concepts deployed here to understand the networks and connections in which farmers are situated and how material, cultural and social processes shape farmers' wellbeing.

1.3.2 Theoretical Foundations

To organize the key questions when investigating the mental health and wellbeing of farmers in Ireland it is necessary to consider more fully the theoretical frameworks that will provide insight into the mechanisms underpinning mental wellbeing for farmers. The following section will provide definitions of key concepts of wellbeing and quality of life. It will examine ideas of relational geography, social ecology and therapeutic landscapes and their potential contribution to this field of study. These theoretical models are all about a better understanding of connectivity and relations between farmers and farm spaces. While Chapter 3 has a more quantitative, empirical focus, Chapter 4 draws from relational geography and social ecological models and Chapter 5 draws from a fuller framework of therapeutic landscapes including therapeutic taskscapes. As set out in the sections immediately following, these overlapping theoretical frameworks provide a structure to consider the role of farming's physical, social, and emotional dimensions for farmers' wellbeing. The COVID-19 pandemic broke down connectivity and created opportunities for farmers to re-connect in new ways. The theoretical frameworks also seek to foreground the contingent nature of human health and wellbeing and its connective relationship with non-human elements. This is particularly useful for an understanding of health among people who work in agriculture more generally.

1.3.2.1 Wellbeing, Quality of Life and Social Isolation

Wellbeing is a holistic conception of human health that includes physical and mental health. (Simons & Baldwin. 2021). Wellbeing is an important concept in terms of how broader social relations impact on individuals' health. Wellbeing has a focus on the positive health-enabling aspects of human experience. The components and philosophical underpinnings of wellbeing are inseparable from human interconnectedness and social relations. The philosophical roots of wellbeing are to be found in both hedonic and eudemonic philosophy. Ryan and Deci (2001) identify hedonic and eudemonic as the two major perspectives in wellbeing research. The Hedonic approach sees wellbeing in terms of happiness, avoiding pain and obtaining pleasure. The eudemonic approach sees meaning and self-realization as being key. The promotion of wellbeing as a concept in academia and governmental discourse has been criticized as being integrally tied to the advance of neoliberal, market orientated policy that is inherently harmful to society (Blinkley, 2011; Schwanen and Atkinson, 2015). The emphasis on individuality and consumption, and a growing 'wellbeing industry' has been argued to propel well-being as a concept in academic discourse (Binkley, 2011; Little; 2014; Miller and Rose, 2008). This has been seen to be underpinned philosophically by an emphasis on hedonic ideas with less consideration of a eudemonic approach to understanding wellbeing (Schwanen and Atkinson, 2015). The deployment of wellbeing conceptions in research has been varied with studies of wellbeing also emphasizing the social rather than material context shaping environmental outcomes (Dinnie et al., 2013; Foo et al., 2014). Both hedonic and eudemonic concepts cohere with ecological, relational and therapeutic landscape ideas that see health as being contingent on a number of factors outside of the individual. Hedonic ideas in their later utilitarian expression emphasise a collective idea of wellbeing, the greatest benefit for the largest group of people (Simons & Balwin, 2021). Of key concern in this study of farmers' wellbeing is the role of the broader environment and social contact as critical to wellbeing. Dimensions of wellbeing that have been identified include positive relationships and environmental mastery (Ryff & Singer, 2008). The relationship between social connectedness and health has been well-established in medical literature and pathways between social networks and health include contact with infectious diseases, social support and access to material goods and resources. (Berkman et al., 2000) Considering the impact of COVID-19 on farmers' wellbeing necessitates a focus on the broader context. Has the reordering of social and economic spheres intensified social isolation or feelings of loneliness for farmers? One important component of wellbeing is quality of life (Diener et al.,

2009). Quality of life and wellbeing are conceptually closely related, both seeking a broader theory to encapsulate one's physical and psychological condition as well as one's sense of meaning and purpose (Sirgy, 2012). Quality of life is a multidimensional construct and has been argued to include wellbeing as a subcategory, alongside life satisfaction, physical and mental health (Diener et al., 1998; Mount and Cohen, 1995). The theoretical definitions of quality of life have been argued to have a tenuous relationship with its operational definitions, deployed in psychometric scales (Hill et al., 2017). Operational definitions of quality of life in the literature have been argued to place a varying emphasis on its social, emotional, mental or physical components depending on the aims and objective of the given study (Hill et al., 2017). Physical challenges that accompany ageing often make investigations of older adults' quality of life more difficult (Baernholdt et al., 2012). However, aside from physical health, social relationships, independence, autonomy, and cognitive functioning have all been found to be important to older adult populations (e.g. Bowling et al., 2007; Gobbens and van Assen, 2014). Quality of life in this study is examined in quantitative analysis based on the CASP-12 psychometric scale testing for Control, Autonomy, Self-realization and Pleasure in older adult populations (Sexton et al., 2013).

1.3.2.2 Mental Health, Quality of life and Wellbeing

Mental health, quality of life and wellbeing are conceptually strongly related. Advocates of a wellbeing framework argue that it places emphasis on the positive aspects of health rather than the absence of negative symptoms (Diener et al., 1999; Ryff, 1989). Depite this, the WHO defines mental health as a state “that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community.” (WHO, 2023). Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. Mental disorders have been defined as “clinically significant disturbance in an individual’s cognition, emotional regulation, or behaviour.” (WHO, 2023). Psychometric tests are used in order to screen for clinically significant symptoms and allow health care workers to detect cases. In order to establish the validity of psychometric tests their relationship with other variables (e.g. clinical diagnosis) are assessed (Cook and Beckham, 2006). While a score indicating the presence or absence of symptoms using a psychometric test is not equivalent to a clinical diagnosis, their validity and ease of use and dissemination make them useful in large population studies. The

psychometric tests used in TILDA, their scoring, development and symptoms examined in paper one is discussed further in the methods section.

Wellbeing and quality of life concepts are complementary to our understanding of mental health. This is the case in an analysis of the symptoms of mental disorders using psychometric tests. Life satisfaction, and a positive perception of life are associated with better mental health outcomes (Diener and Seligman, 2002). Poor mental health also has a negative impact on features of wellbeing including sense of fulfilment and life satisfaction (Kessler and Wang, 2008). In might also be argued that when people talk about mental health, what they really mean is mental illness, and it is to the more protective aspects of mental wellbeing that this thesis aims to explore more fully.

1.3.2.3 Social-ecological perspectives on farmers' health

Ecological theory concerns the interrelations between organisms and their environments. The ecological paradigm first developed in the discipline of biology and subsequently informed research in disciplines including sociology, psychology, and public health. Ecology provides a framework for understanding peoples interactions with their physical and sociocultural surroundings (Stokols, 1992).

The social-ecological model of health underscores the relationship between the person and their environment in determining health outcomes. This environment may be physical, social or cultural. In the social ecological approach, an individual's health and wellbeing is not determined singularly by biological or psychological processes sealed within the body but instead as the outcome of a dynamic interaction between the individual and the structures and processes surrounding them. While behavioural models emphasise individual characteristics, skills and intimate social influences such as family and friends the ecological model explicitly considers the broader community, organisational, policy influences on health (Sallis et. al. 2008). A social-ecological model can be understood as part of the determinants of health model first advanced by Dahlgren and Whitehead (1991). Factors scaled from the individual to the general and environmental, often explained visually in terms of concentric circles, exist as multiple layers of health determinants (Dahlgren and Whitehead, 2021).

Bronfenbrenner advanced the theory of social ecology in the field of developmental psychology. It has been used in guiding public mental health interventions and in the field of mental health

research (Eriksson et al., 2018). In an evolving body of work, Bronfenbrenner's theory has been identified as developing over time. In the later phase of his work, he places emphasis on what he terms "proximal processes" meaning the reciprocal interaction between the individual and his/ her environment. Accounting for person means analysing how individual characteristics, such as age and gender influence activities and interaction. This places a focus on proximal processes, showing how they are influenced both by characteristics of the individual and by the context in which they occur (Eriksson et al., 2018). It is in the proximal processes that the dynamic interplay of contextual and compositional factors is unified. The social-ecological model also foregrounds the interrelationship between immediate and distal environments (Stokols,1992). Understanding farmers' wellbeing from the social-ecological perspective means considering the interplay of factors that are both personal and contextual in farming. The specific demographics of the farmer are important as are consideration of the scale and system of the farm. It is these factors that will shape the impact of broader economic and ecological processes.

1.3.2.4 Rural space and farming: A relational perspective

Relational theory has developed in the discipline of geography, in contrast to ecological ideas with roots in biology. Relational theory is complementary to these concepts, as it seeks to broaden the understanding of space and place in geographical research. Cummins (2007) argues for a relational approach towards studies in health geography. Moving from a division of contextual (place) and compositional (personal) factors as independently affecting health outcomes they argue for a relational conception of space that collapses the division between context and composition and recognises space not as a bounded unit but instead a node in a network of intersecting processes each affecting the health of individuals and communities. Massey wrote of a momentary glimpse of the countryside, from a train window:.

"That tree which blows now in the wind out there beyond the train window was once an acorn on another tree, will one day hence be gone. That field of yellow oil-seed flower, product of fertiliser and European subsidy, is a moment- significant but passing- in a chain of industrialised agricultural production" (Massey, 2005: 199).

Thinking relationally about the rural and farming as contexts of human health means considering the role of a multiplicity of processes in flux and under construction affecting a diversity of actors unevenly. Farming is shaped by and shapes a set of processes at local, national and international levels. Climatic conditions essential for production are increasingly unpredictable and subject to

extreme weather events. Farming exists within a legal and regulatory framework that is subject to change on a national and European level and must be acted upon by the individual farmer. Farm products are marketed in a national, European, and international context and are subject to fluctuation in value. Farm production requires the input of human labour and increasingly complex and expensive machinery. Livestock and crops are comprised of a set of biological processes susceptible to disease, contagion and epidemic. Many of these processes, and their inherent contingencies have been cited in the literature as potential stressors for farmers (Deary, et. al.,1997).

Examining rural space in Ireland as a context for health and wellbeing, it is necessary to consider the multiple processes impacting on the health of people in rural Ireland and how the same rural contexts may be experienced in diverse ways by people in the same time and space. Isolation is also cited as a potential health risk for those living in rural Ireland, likely affecting different segments of the rural community with varying severity (Bantry-White et al., 2018). While farmers are subject to many of the processes affecting health in the rural Irish context, it may be hypothesised that their work in the farming context exposes them to a distinct combination of stressors and health hazards that may mean they are in a unique position of risk in terms of suffering poor health. In order to understand the processes that are primarily affecting farmers' wellbeing it is necessary to examine farmers' health outcomes in relation to other workers in rural regions. This may allow for a disaggregation of factors playing a role in health outcomes.

1.3.2.5 Therapeutic Landscapes

Therapeutic landscapes encompass the physical environment, its social dynamics and cultural context in shaping wellbeing (Gesler, 1992). The framework of therapeutic landscapes was originally developed to have a focus on 'special places', such as spas or pilgrimage sites, but has shifted to a concern with more everyday spaces, albeit with an ongoing concern for how these places work to enable health (Bell et al., 2018). That everyday shift has been used to investigate 'green' spaces and wellbeing, often engaged with for recreation, but with wider value as healthy 'spaces' (Milligan and Bingley, 2007; Plane and Klodawsky, 2013). This work on the therapeutic potential of outdoor environments has also considered a range of engagements – health-enabling practices –within those settings (Bell et al., 2022; Duff, 2012; Finlay et al., 2015; Völker and Kistemann, 2015; Butterfield and Martin, 2016; Jellard and Bell, 2021; Chen and Wang, 2022;

Doughty et al., 2022). A particular focus on how different natural environments – woods, gardens, and open spaces —are used in different ways for different cohorts has also informed perspectives on therapeutic landscapes (Milligan and Bingley, 2007; Duff, 2012; Cheesbrough et al., 2019).

Most recently there has been an extension from green to blue and other palettes of natural spaces, and how these spaces may sustain health and wellbeing (Foley et al, 2019). But despite this shift, the focus is still on everyday leisure and there has been relatively little research into the therapeutic potential of everyday lived and worked landscapes (Baer and Gesler, 2004; Emmerson, 2019; English et al., 2008). A growing area of research concerns 'therapeutic taskscapes', investigating what activity and practice in a natural environment may mean for the cultivation of wellbeing (Bell et al., 2023). This has been examined particularly around the healing potential of gardening in different types of spaces, though often urban in focus (Marsh and Williams, 2020). A separate body of research has used the framework of therapeutic taskscapes to study care farming and social farming, with short periods of farm work used as a therapeutic intervention to foster wellbeing, but again without an everyday and more permanent occupational focus (Gorman, 2017; Keley et al., 2019; Russell et al., 2021).

1.3.2.6 Social Farming

Social farming involves the use of farming as a therapeutic intervention to support people with a range of needs including mental health, learning disabilities, substance misuse or social exclusion (Murray et al., 2019). Diverse terminology is used to describe farming deployed as a therapeutic practice. This includes social farming, care farming, green care and nature-based solutions (García-Llorente et al., 2019). While social farming and care farming have also been considered a subset of a broader set of 'green care' practices (Murray et al., 2019). This includes gardening and nature assisted therapy (Annerstedt and Währborg., 2011). The most common activities used in social farms studied are horticulture, animal husbandry and working with stables, outdoor activities such as forest walks followed by cooking and preparing farm products for sale (Garcia-Llorente et al., 2019).

There is a wide range of applications for social farming. Social farming interventions have been found to be positive for assisting those with clinical depression (Pedersen et al., 2012); supporting those with a range of needs including learning disabilities (Elings, 2004; Kayley, 2015);

children who are on the autism spectrum (Ferwerda-van Zonneveld et al., 2012); people with personality disorders (Granerud and Eriksson, 2014); psychiatric disorders (Elings and Beerens., 2012; Elings and Hassink., 2008, 2010); schizophrenia (Javed et al.,1993); and for helping to address substance misuse (Granerud and Eriksson, 2014). Care farms have also been advanced as a support for disadvantaged youth (Hassink et al., 2011; Suprise, 2013), for socially isolated older people (Hassink et al., 2009; 2010), and for those with dementia (De Bruin et al., 2015). Interest in this model of care has grown rapidly in the last 20 years, with a significant increase in the past 10 years (García-Llorente et al., 2018).

Key systematic reviews published on social farming include Murray et al. (2019) examining the use of social farming in supporting those with depression, anxiety and in improving quality of life. Garcia-Llorente et al. (2019) provide an important overview of the social farming literature, mapping this research in terms of academic discipline, geographical spread and the outcome of care farms both in therapeutic results and their economic impact on diversification of farming. Nazzaro et al. (2021) systematally reviews social farming literature and examines from an economic and regulatory perspective the potential for an expansion in social farming. Jarábková et al. (2022) systematic review considers definitions of social farming and the context of research into care farming including its health, social, educational and economic motivation.

Interest in social farming and its particular character has varied geographically. Social farming projects have been particularly advancing in Europe (Murray et al., 2019). Researchers in the Netherlands, the UK, Norway and Sweden followed by Italy have produced the greatest number of studies on this subject (Garcia-Llorente et al., 2018). Social farming has been characterized in central and northern Europe by a greater support from the state and healthcare services and in southern Europe by greater involvement of civil society and non-profit organizations (Nazzara et al., 2021). This emerging research has varied in discipline and in motivation across different national contexts, with the involvement of the health sectors in social farming research most prominent in the U.K. (Garcia-Llorente et al., 2018). However social farming is still an uncommon treatment when compared to traditional approaches to mental health care (Bragg & Leck, 2016)

Measuring outcomes of care farming on wellbeing has been limited by the lack of larger studies, studies that use validated psychometric instruments and studies focused on specific population groups (Murray et al., 2019). Despite this evidence indicates that they are a positive intervention for those with depression and anxiety (Murray et al., 2019). Annerstedt and Währborg (2011) reviewing nature assisted therapy concluded that a small but reliable evidence base exists for

nature assisted therapy, with high quality studies generally reporting nature assisted therapy as a positive intervention. Care farming has been found to assist in mental health recovery (Lancu et al., 2014). While a review of care farming research in Norway has found that this intervention has positively impacted participants in terms of depression, anxiety, perceived stress, positive affect, and self-efficacy (Pedersen et al., 2015). Care farms may also be positive for the wellbeing of those farmers operating them and their staff, alongside being positive for the wellbeing of clients (Hemingway et al., 2016) Social farming has also been seen to have potential for commercial success in that their products are seen to be ethical (Carbone et al., 2009). Social farming initiatives have grown in Ireland, with these typically operating as working family farms with the participation of visiting clients in need of support (*Care farming in the UK and Ireland: State of play 2015,* 2016).

In considering the relationship between farming, wellbeing and illbeing, it is important to consider the two contrasting bodies of work in this field. Literature on farming and mental health is concerned primarily with stresses in farming and potential wellbeing of farmers (Hagen et al., 2019). The growing interest in social farming as a non-clinical therapeutic intervention points to the need for a rounded perspective on farming life, whichcan consider the positive role of occupation for farmers' wellbeing.

1.3.3 Farmers' Health: General Introduction

In moving to look at the specific cohort studied in this thesis, there has been a rapid growth in literature concerning farmers' health, including mental health in recent years. Key literature reviews in the field of farmers' mental health, suicidal ideation and mortality include Hagen et al. (2019), Daghagh Yazd et al. (2019) and Santos et al. (2021), and Hagen (2020). In addition, a review by Reed and Claunch (2020) has a more limited geographic scope, focusing exclusively on studies published in the U.S.A.

Hagen et al. (2019) in their scoping review of studies on farmers' mental health outcomes and interventions from 27 countries, found that 80.9% had been published since the year 2000 and 48.1% had been published between 2010 and 2017. This is consistent with Hagen et al.'s (2020) meta-analysis of depression among farmers globally which found that 31.4% were conducted prior to 2000, 37.1% were from the period between 2001 and 2012 and 31.4% were conducted after 2010.

This literature on farmers' mental health must be understood in the broader context of structural changes taking place in farming internationally including structural changes in the global economy with the onset of neo-liberalism and the increasing frequency of extreme climate events (Harvey, 2007; Singh Malhi et al. 2021). This literature originated in what came to be known as the 1980s farm crisis, related to an economic crisis fuelled by high interest rates. This was connected to the monetarist policies adopted by the United States from 1979. The advent of the farm crisis spurned an interest in supporting those working in agriculture (Barnett et al., 2000; Reed and Claunch, 2020). Daghagh Yazd et al. (2019) in their systematic review of factors affecting farmers' mental health confirmed that this increased interest in research on mental health in recent decades and identified its acceleration from the mid-2000 which was driven by a new body of work in Australia which examined the impact of the Millennium Drought.

1.3.4 Factors in Farmers' Mental Health

While the broad contours of the research on farmers' mental health can be summarized in terms of the twin economic and ecological shifts globally, it is necessary to look deeper at the way in which these factors, and those more intrinsic and constant to agriculture, are articulated in farmers' day to day lives.

1.3.4.1 Pesticide exposure and poisoning

Pesticide exposure has been identified as a factor in farmers' mental health in 19% of studies (Daghagh Yazd et al., 2019). Organophosphates are cited as a source of poisoning and consequent mental health problems among farmers (Wesseling et al., 2010; Koh et al., 2017). Studies of agricultural labourers with organophosphate poisoning have found rates of major depression and suicidal ideation to be 25% (Serrano-Medina et al., 2019). This literature is more prevalent in developing countries whereas developed countries have conducted more research generally on farmers' mental health (Daghagh Yazd, et al., 2019). Organophosphates are used for insect control and is a feature of crop farming rather than livestock (Science Direct, *Organophosphate pesticide: An Overview.* Accessed 20/11/23). It is also important to note that Irish farmers who use Organophosphates will have greater access to equipment to protect them from direct exposure to it, in comparison to farmers in the global south and that chlorpyrifos-methyl is banned in the European Union (Health and Environmental Alliance, 2023)

1.3.4.2 Financial factors

Farm finances have been studied as a factor in mental health in 18% of studies and have been found to be particularly relevant where farming is the sole source of income (Daghagh Yazd et al., 2019). Farm finances have been found to impact on farmers' wellbeing in terms of psychological distress, depression, lower life satisfaction, alcoholism and suicide (Bultena et al., 1986). It has also been found to impact on farmers' family units (Welke, 2004). This may be less relevant to Irish agriculture as 46% of farmers in Ireland have an alternative source of income (CSO, 2022). The years 2020-2022 have also seen a growth in profitability in Irish agriculture despite higher input costs. The average family farm income rose 9% in 2020, 26% in 2021 and 32% in 2022. It is also important to note that this growth was unevenly distributed across farm sectors with the dairy and tillage sectors accounting for much of this growth (Teagasc News, 2021; 2022; 2023).

1.3.4.3 Climatic factors and drought

Eco-anxiety is a growing area of research and relates to the feelings of uncertainty and fear due to environmental destruction and climate change (Pikhala, 2020). Studies of farmers' wellbeing in the context of climate change can be seen as connected to broader investigations on trauma and grief stemming from ecological destruction. Systematic analysis of the literature on the mental health impact of drought has found the agricultural sector to be hit hardest (Vins et al., 2015). Climate variability is a key stress for farmers and has been cited as a factor in 11% of studies globally and 40% of Australian studies (Daghagh Yazd et al., 2019). Climate crisis also intersects with other factors including region and farm enterprise/ farm system, for example, Australian farmers in irrigated regions have been found to suffer a greater psychological toll from droughts compared to those in dryland regions of Australia (Wheeler et al., 2018). Austin et al., (2018) found living on the farm, financial pressures and being a younger farmer to make drought related stress more severe. Stress as a result of climate variability has been found to contribute to senses of shame and humiliation and to contribute to social isolation (Anderson, 2009). It has been found to have a severe effect on farm households also (Alston, 2012). The most acute manifestation of the climate crisis for Irish farmers has been in terms of a 'fodder crisis' as Ireland's farming land is for the most part used for pasture, hay and grass silage (European Commission-Ireland, 2018). In 2018 abnormally dry weather in spring and high rainfall in June created a crisis for Irish agriculture (Dennehy, 2018). The fodder crisis of 2018 was the subject of much media coverage in terms of its impact on Irish farmers' mental health (Kelleher, 2018; O'Reagan, 2018). Interviews conducted with Irish farm advisors in 2018 found the fodder crisis

to be the most significant stress cited by farmers (Mc Auliffe, 2018). There is need for further research in this area in the Irish context. Farmers are placed in a highly precarious position in being vulnerable to the effects of climate change and operating in an industry that must be radically reconfigured in order to prevent further environmental damage. This is particularly acute in Ireland with an average of 1.3 livestock per hectare as against a European average of 0.7. While the vast majority of EU countries have reduced livestock since 2010 Ireland has increased this by 12.4% (Eurostat, 2023).

1.3.4.4 Farm accidents

The physical conditions of farming including injury and animal attacks, alongside concerns about animal disease and machine breakdown, are all important factors in farm stress identifiable in the farmers' mental health literature (Daghagh Yazd et al., 2019). Farming has among the highest rates of occupational injuries of all industries and its contribution to workplace injuries is argued to be greatly underestimated (Leigh et al., 2001) Farm workers reporting neck, shoulder, back pain as well as farmers' cardiovascular disease also have poorer wellbeing (Brumby et al., 2012; Tribble et al., 2016). It has also been argued that mental illness and medications used to treat mental illness can put farmers at a greater risk of suffering farm accidents (Crandall et al., 1997).

1.3.4.5 Gender: Farming culture and masculinities

Roy et al. (2013) have pointed to the critical role of gender in shaping the wellbeing of male farmers. Farming is interwoven in cultures with gendered norms, including a farming masculinity that is represented in familial responsibility, stoicism and self-reliance. This can represent an added pressure on male farmers (Ní Laoire, 2005). Gendered norms are seen to limit help-seeking for male farmers suffering from occupational stress (Alston, 2008). Women farmers have been found to be more likely to seek emotional support to cope with distress (Gunn et al., 2012). This has been seen to increase the risk of suicide for male farmers' experiencing distress (Alston, 2008). Changes in Agri-governance include a shift from productivist intensive farming to state sponsorship of farmers environmental upkeep and animal welfare. These shifts are also reshaping what it means to be a 'good farmer', creating a tension with traditional identities and masculinities (Hammersley et al., 2022). However, it is also important to note cultural shifts taking place among younger farmers and that traditional masculinities among older farmers do not necessarily equate to toxic masculinities (Roy et al., 2014).

1.3.4.6 Gender: Experience of women

The farming mental health literature has focused primarily on male farmers and comparatively, female farmers' wellbeing is understudied (Danghagh Yazd, 2019). Most studies have found that female farmers' experience more distress than male farmers (Danghagh Yazd, 2019). A large work burden with domestic labour and farm work has been found to be risk factors (Berkowitz and Perkins, 1985). Women farmers have traditionally been burdened with a large domestic workload and the decreasing probability of farming has meant that women farmers are increasingly having to take time off farm jobs to supplement a dwindling farm income (Gallagher & Delworth, 2003). Konstantinos et al. (2013) found that the greater the hours worked by spouses the greater the frequency of depressive symptoms among female farmers. Alston et al. (2018) mixed methods study in the context of drought has also found that female farmers greater workload was associated with greater emotional distress. This points to the need to understand how gender is a factor in farmers' wellbeing and that it can become more pronounced in the context of a crisis.

1.3.4.7 Isolation

There is a well-developed broader literature on rural isolation and mental health in which farming is situated (Hoyt et al, 1995, 1997; Lobey et al., 2004; O'Brien et al., 1994). In this literature, however, rural isolation is often conflated with the experience of farmers and there is insufficient delineation of the particular role of isolation in farmers' wellbeing (Lobey et al., 2004). Read (1995) identified isolation as a particular issue for the mental health of rural residents and of farmers in particular. Read (1995) argued that an 'iceberg' model explained a high rate of farmer suicide, this being a manifestation of stress and poor wellbeing that is normally hidden publicly.

The role of isolation in farmers' wellbeing is contested and there is no clear consensus on the significance of this factor in farmers' wellbeing. This is due in part to a limited amount of research exploring this question. Daghagh Yazd et al. (2019) have identified 3% of studies on farmers' mental health examining isolation as a factor. Greagory (2002) cites geographic isolation as a concern for the mental health of farmers in limiting help seeking and access to healthcare services. Deary et al. (1997) developed and tested the Edinburgh farm stress inventory and considered isolation as a factor in farm stress. They found that, while isolation is one of the six major domains of stress in farming, which included bureaucracy, finance, uncontrollable natural forces, personal hazards and time pressure, it contributed relatively less to stress in farmers and that other factors are more important. Doyle (2000) researching farming stress in Australia also

found isolation to be the least important factor in farm stress.

Roy et al. (2013) in their scoping review of male farmers' mental health outlined that that isolation may exist in relation to rural culture and norms with respect to gender. If stoicism and self-reliance are an important part of how rural and farming masculinity is constructed, then struggles with stress and mental health can lead to a social withdrawal and self-isolation. Isolation therefore must be considered as intersecting and being compounded by other factors in farmers' wellbeing and mental health. It is necessary to see isolation as not strictly determined but as shifting in the evolving context of farming. This supports the findings of Jones et al. (1994) who have pointed to changes in farming that may increase the severity of isolation as a stressor.

The most extensive research on the role of isolation in farmers' mental health has been conducted by Alison Monk (Monk and Thorogood, 1996; Monk and Robson 1999; Monk *Undated;* Monk 1997). While Monk's work is primarily an investigation of farmers' stress it has been challenged on the basis of its methodology with participants not clearly categorized as farmers, farmers' families or other rural dwellers (Lobey et al., 2004). There is limited demographic information such as the household structure or farm type (Lobey et al., 2004). This makes it difficult to consider the role of isolation in farmers' wellbeing relative to other urban and rural populations and to understand what farmers may be particularly at risk. Monk's model of social, emotional and cultural loneliness is nevertheless, an important innovation and has been further advanced by Wheeler et al. (2023). The multitudinous role of isolation in farmers' mental wellbeing needs to be investigated further by researchers as well as the heterogeneity of farmers and the evolving contests in which they operate. Monk (2000) considering rural isolation in Britian and Ireland argued that the smaller farm size's in the Republic of Ireland may mean that social isolation may be less of an issue while a critical mass of farmers and lesser urban to rural migration may have placed Irish farmers at a lesser risk of cultural isolation, with a broader rural population that is integrated in farming community and culture. Developments in Irish farming and the broader COVID-19 crisis have made more pertinent the issue of isolation

for farmers in Ireland and it is necessary that this question be further considered. It will be necessary also to investigate which farmers may be most affected by features of isolation and how isolation can relate to or compound other factors in farm stress and mental health.

1.3.5 Farmers' mental health research in the Irish context

A small and diverse literature has been published on the specific question of farmers' mental health in Ireland. This has included qualitative and quantitative research that examined factors in occupational stress as well as mental illness.

Ireland was noted in 1965 to have the highest rate of incidence of inpatient psychiatric treatment in the world with 6.5 beds per 1000 of the population (Williamson, 1970). Higher rates of institutionalization in twentieth century rural Ireland do not however necessarily equate to a higher rate of mental illness. O'Sullivan and O'Donnell (2007, 2020) writing on Ireland's 'carceral archipelago' identified the high rate of incarceration in Ireland in a series of institutions of coercive confinement of which mental hospitals formed one segment. They identified these as being a means to contain an urban poor and those 'surplus to the requirements of the agrarian economy' (2020). The attenuation of the rate of coercive confinement was concomitant with the growth of the Irish economy, urbanization and industrial growth (2007, 2020).

Furey et al.'s (2016) study of farmers in Ireland found that experiencing farm stress increased mental distress among farmers as did financial stresses while social support served to reduce distress. This highlights the importance of considering occupational and social factors in farmers' wellbeing. The key occupational stresses for Irish farmers have been found to be poor weather, workload and financial concerns (Brennan et al., 2022). This confirms the findings of Hope et al. (1999) that pressure at work was an important cause of stress for farmers in Ireland and that a significantly larger number of farmers compared to other Irish workers, considered loneliness a source of stress. Demographic factors are important to consider also as Brennan et al. (2022) found that age is an important factor in occupational stress for Irish farmers, as farmers are more likely to experience stress as they get older but at a declining rate. While this provides an important insight into the occupational stress experienced by Irish farmers, echoing findings in the literature internationally, there are several key questions to be established. Do stresses particular to farming have a negative impact on mental wellbeing of farmers? Story et al. (2014) found 12% of farmers in Ireland reported mental health issues. However, without a non-farmer comparative it is impossible to know what the status of farmers' mental wellbeing is. Could it be

that factors promoting resilience, coping and positive wellbeing are also inherent in farming and create a counterbalance to its stresses and dangers?

1.3.6 COVID-19: Implications for Research on Farmers' Wellbeing

The advent of the COVID-19 pandemic created a new context for considering the mental wellbeing of farmers in Ireland. There is a body of research examining the impact of the COVID-19 pandemic on workers more broadly, finding that it exacerbated existing inequalities in wellbeing and found self-employed workers to be particularly affected (Nieuwenhuis and Yerkes, 2021). A global survey conducted in the context of the COVID-19 pandemic has found the greater physical distancing was associated with increased social isolation and in turn psychological distress (Kim and Jung, 2021). It was also found that the connection between social isolation and psychological distress was amplified by the number of deaths due to COVID-19 in each country, this was seen to create an 'anticipatory stressor' increasing fear of contagion and compounding the negative effect of isolation on mental health (Kim and Jung, 2021). This raises important considerations for considering farmers' wellbeing in the context of the COVID-19 pandemic. The greater physical distancing in the context of the COVID-19 pandemic may have increased the physical isolation of farmers in Ireland. This in turn may have increased social isolation and distress. The context of farming in Ireland, in which only 12% of those who work on farms are non-family farm workers (CSO, 2012), is also an important consideration. Can it be that the 'anticipatory stressor' of contagion is attenuated in this context, that farmers will feel comparatively more secure during the COVID-19 pandemic and that their greater physical isolation my limit fears of contracting the virus, limiting the impact of the pandemic on their wellbeing?

The changing nature of work during the COVID-19 pandemic has been found to have created new stresses with a negative impact on wellbeing (Prasad et al., 2020). Family work conflict and social isolation have been found to cause stress for workers transitioning to remote working during the COVID-19 pandemic (Galanti et al., 2021). The shift to remote working in the context of the COVID-19 pandemic has also been found to impact negatively on wellbeing because of 'technostress' (Molino, 2020); that is stress experienced as a result of engagement with information communication technology. Technostressors were found to increase workers' wellbeing due to the impact on work-family conflict and behavioural stressors (Molino, 2020). Complying with government regulations, completing paperwork and navigating bureaucracy

have been identified as important sources of stress for farmers (Daghagh Yazd et al., 2019; Deary et al., 1998). A rapid adaptation to communication information technology was necessary for farmers to operate in the context of the COVID-19 pandemic. To buy and sell livestock, order farm supplies and submit necessary paperwork it was necessary to increasingly use information technology. Yet, Ireland has been found to have a digital divide (Pirhonen et al., 2020). Until recently many older Irish people did not use information technology to complete daily tasks (Pirhonen et al., 2020). Farmers in Ireland are an older population (CSO, 2022). The persistence of a digital divide in Ireland and the need to rapidly adapt to technology to continue operating farms may create challenges for farmers and have a negative impact on wellbeing akin to the technostressors experienced by other workers adapting to the pandemic.

2. METHODOLOGY

This chapter provides an overview of methodology used in this study across the three constituent papers. First is an introduction to The Irish Longitudinal Study on Ageing (TILDA), Its design, recruitment, methods. Following is an explanation of the utility of TILDA in giving an overview of psychological symptomatology of farmers, longitudinally, as well as its utility as a cross-sectional study allowing comparison with a non-farming rural sample. The psychometric tests used in TILDA are introduced and an overview of the demographic of farmers participating in TILDA, including their gender, age, farm systems, farm size and a discussion of how this cohort compares to Irish farmers generally. Demographic data on farmers in TILDA and psychometric scores of farmers and other rural workers across six waves (wave one to COVID-19 wave) of TILDA are presented as a background to paper one which examines psychometric outcomes in Wave 5 and the COVID-19 wave.

These findings are presented as preliminary work carried out in advance of the research presented in Paper One. The advent of the COVID-19 pandemic created a new set of questions for research in health geography and the decision was made to shift the focus of this study to a more limited timeframe (2018-2020). This allows for a depth to the research considering how older farmers' wellbeing was affected at a time of heightened stresses because of the dangers of the virus and increased physical isolation. Paper One focuses on Wave 5 and the COVID-19 wave of TILDA to answer the research question How has the COVID-19 pandemic impacted on the mental wellbeing of farmers in Ireland, relative to a comparative population of older, rural workers. Multivariable regression was selected as the optimum statistical model for this component of the research, due to its utility in measuring and controlling for multiple independent variables.

The qualitative research component of this thesis comprises of papers two and three. Qualitative methods were selected in order to investigate the subjective experience of farmers during the COVID-19 pandemic and post-pandemic period. A key intent was to consider the unique social, cultural and material features of farming life that might have a bearing on wellbeing, as well as what challenges farmers feel have a bearing on their mental wellbeing and what psychological resources they feel are key to ensuring maintaining resilience in the face of these challenges.

This section also provides an overview of the research ethics approval process. The preparation of the questions in the semi-structured interviews, their adaption through an iterative process of reflecting from ongoing interviews as well as recruitment, and a table documenting the farmers and stakeholders interviewed are also outlined in later sections of the chapter.

2.1 THE IRISH LONGITUDINAL STUDY ON AGEING (TILDA): GEOGRAPHY AND STUDY DESIGN (PAPER ONE)

TILDA is a representative longitudinal study of the population of Ireland aged 50 and above. Its aim is to assess the health, social and financial circumstances of the older Irish population. TILDA's sample frame are all those who live in Ireland, are over 50 and who live in the community. TILDA provides access to the datasets for research use through pseudonymised publicly accessible dataset files, and through an on-site Hot Desk Facility. Researchers wishing to access the publicly accessible dataset files must complete a request form, available on either the Irish Social Science Data Archive or Interuniversity Consortium for Political and Social Research website. The analysis for this article was conducted at the TILDA hotdesk in Trinity College Dublin where more detailed data is accessible. A data access form available at tilda.tcd.ie must be completed explaining the research's purpose and variables of interest to the researcher and this must be sent to the TILDA Data Access Committee pending approval. A copy of this documentation is provided in Appendix B.

RANSAM system is the sampling method used by TILDA. It is based on the Geo-directory and was developed by the ERSI (Whelan, 1979). The national population of residential addresses on the electoral register are divided into 3,155 first stage units or clusters, subdivisions of the District Electoral Divisions that contain between 50-1,180 addresses. Of these 3,155 different clusters, 640 were selected, the stratification process involved three different characterizations; percentage of the population in professional/managerial occupations, percentage of the population in the cluster 50 years old or younger and according to geographic location. These characteristics were inferred from the Small Area Population Statistics compiled by the Central Statistics Office (CSO) on the Direct Electoral Division of which they are part (Kenny et al., 2010).

From each of the 640 clusters identified, 40 households were selected. Each of the addresses was visited by an interviewer who established the eligibility of the address, to determine if there was anyone aged 50 or older at the address. All aged 50 or older were invited to participate. All partners of participants, regardless of age, were also asked to participate. Successful interviews

were obtained at 6,279 households, a response rate of 62%. 8,175 interviews were conducted with respondents aged 50 and older from 6,279 households. In addition, 329 interviews were conducted with younger partners of eligible individuals. Wave one was conducted between October 2009 and February 2011 (Kenny et al., 2010).

2.2 TILDA Methodology

TILDA's assessment process included a Computer Aided Personal Interview (CAPI), a self-completion questionnaire (SCQ) and a health assessment. This article makes use of data collected as part of the CAPI and self-completion questionnaire.

CAPI included questions about demographics, social circumstances, health and health care, employment and education, income, assets and life history. The Self-Completion Questionnaire may have been completed while the interviewer was still at home or completed after and sent away by post. This asked respondents about Social Connectedness (Participation in Social / Recreational Activities, Relationship Quality), Loneliness, Perceived Stress, Stressful Life Events, Anxiety, Worry, Quality of Life, Ageing Perceptions, Alcohol (Kenny et al., 2010).

Interview respondents were invited to complete a health assessment either at one of 2 health centres (Dublin, Cork) or to complete a partial health assessment at home. The focus of the TILDA health assessments is on neuro-cardiovascular instability, gait and balance disorders and age-related macular degeneration. TILDA design report states that health assessments at dedicated centres and at homes had to be offered as those who completed home assessment are older, with lower levels of education and self-reported physical and emotional health (Kenny et al., 2010).

2.2.1 Timeline of TILDA

Below is a timeline of TILDA, useful for thinking about the change over time in health outcomes. Waves 1 and 3 included a health assessment carried out in dedicated centres in Dublin and Cork or in participants' homes. This was not carried out for the COVID-19 wave of TILDA. While each wave of TILDA included a self-completion questionnaire this questionnaire was changed for the COVID-19 wave. This was informed by the World Health Organisation's COSMO (COVID-19 Snapshot Monitoring) toolkit which provides information on how to gather health data during the COVID-19 pandemic (Ward et al, 2021).

TABLE 2.1 TIMELINE OF TILDA: DATA COLLECTION

Wave 1	**2009-2011**
Wave 2	2012
Wave 3	2014-2015
Wave 4	2016
Wave 5	2018
COVID-19 Wave	2020

2.2.2 Sample frame: Farmers

To compare farmers and non-farmers in TILDA, new binary variables were created for the purposes of this study, one for each wave, based on WE301. In TILDA's Computer Aided Personal Interview (CAPI) those who stated that they were self-employed were asked the nature of their business or occupation. If they answered farming, they were directed to question WE301:

"Do you own, or have you owned a farm at any time during the last 12 months?"

This is not included in the COVID-19 Wave so the farmer/non-farmer variable for Wave 5 was used instead. A split file function was used to compare farmers and non-farmers. Frequency analysis was used to determine a mean score for both farmers and non-farmers in gender, age, and psychometric tests. For the analysis of farm size, single farm payment and farm system, that I have used to compare TILDA's farmers to a national average, the select cases function in SPSS was used. This was done to limit this analysis to those coded as farmers under the WE301 variable. Psychometric tests used to measure anxiety are different in the COVID-19 Wave compared to Waves 1-4.

The use of the WE301 variable to identify farmers in the study narrows the definition of farmer and does not include those who may labour on a farm for a wage or work alongside a member of their household. While this will exclude participants who do farm work it is important that a distinction be made in analysing health data as both groups may be subject to different stressors as well as factors positive for health. Hagen et al. (2020) conducted a systematic literature review comparing CES-D scores of farmers and migrant farm workers found significantly higher symptoms of depression among the migrant farm worker populations. This points towards a study of farmer labourers and farm owners/operators (referred to here as 'farmers') as distinct occupational cohorts.

2.2.3 Sample frame: Rural

Drawing from the CSO definition, rural areas in TILDA are those with a population of less than 1,500. While small areas are delineated into 6 subdivisions' in CSO data, scaled from cities to remote rural areas (Urban and Rural Life in Ireland, 2019). In TILDA this data is not available for the purposes of data analysis instead are coded in 3 subdivisions are rural areas (>1,500) other towns and cities (>1,500) and Dublin City and County. For this study the variable was recoded in SPSS to create a new dichotomous Urban/Rural variable. Dublin City and County were grouped into a single rural category. While this groups rural areas in Dublin into a single variable with urban areas, Dublin is the most urban county in the Republic of Ireland with 98% of its population living in urban areas according to Census 2022 (Urban Boundaries and Built-up Areas- CSO Presentation, 2023)

2.2.4 Sample frame: Employed

A binary 'working' variable was created based on questions WE101 and WE201 of the CAPI questionnaire section 9 this included self-employed as well as unpaid work in family business, temporarily away from work, or participating in apprenticeship or employment programme - such as Community Employment (TILDA, 2017).

2.2.5 Farmers in TILDA

TABLE 2.2 ABSOLUTE NUMBER OF FARMERS IN EACH WAVE OF TILDA AS IDENTIFIED BY WE301.

Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave C
328	289	264	225	191	125

There is a decline in the absolute number of farmers in TILDA across waves. This reflects the attrition of participation in TILDA as waves progress. This may point towards participants in TILDA exiting farming and/or signing over farms to relatives or heirs to operate in their place.

2.2.6 Rural participants in TILDA: Farmers and non-farmers

TABLE 2.3 RURAL PARTICIPANTS IN TILDA: FARMERS AND NON-FARMERS

	Farmers	Non-Farmers
Wave One	311	3791
Wave Two	273	3033
Wave Three	252	2757
Wave Four	207	2597
Wave Five	179	2325
COVID-19 Wave	120	1506

2.2.7 Non farmers: rural working population

Table 2.4 shows the numbers of TILDAs non-farmer rural participants who are not retired, unemployed or on disability payment.

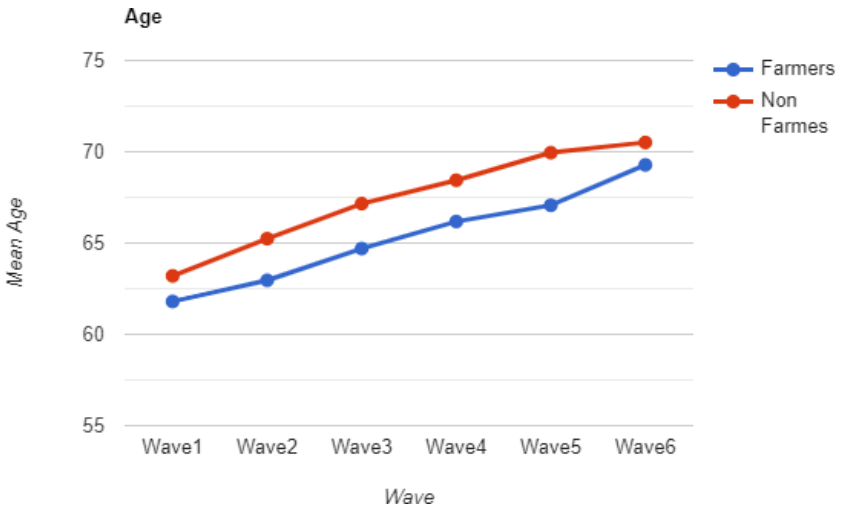
TABLE 2.4 RURAL WORKERS IN TILDA

Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	COVID-19 Wave
1295	777	724	777	725	125

2.2.8 Age

Farmers in TILDA are on average younger than the non-farmers in TILDA and this is consistent across waves. TILDA represents an older cohort of farmers, and this has important implications for examining levels of stress, wellbeing and quality of life. The mean age of both farmers and non-farmers in TILDA increases across Waves. TILDA achieved a response rate of 66% in the COVID-19 Wave and this was higher in the younger age cohort, highest among the female group aged 60-69 years (Pp. 17, Ward et al. 2021). Preliminary results of the census of agriculture 2020 put the mean age of farm holders at 57 (Demographic Profile of Farm Holders, CSO). The average age of farmers in receipt of farm payment, discussed below, is 51 years old (Pp. 7, Department of Agriculture, Food and Marine).

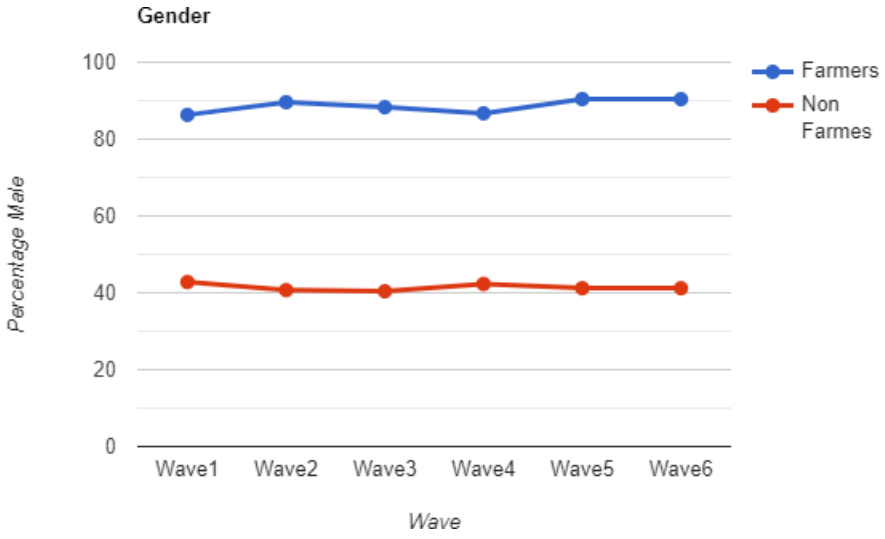
FIGURE 2.1 AGE PROFILE OF FARMERS AND RURAL WORKING NON-FARMERS IN TILDA



2.2.9 Gender

In TILDA's sample frame women predominate in the cohort of non-farmers, in the farmers sample men make up the vast majority. Research using the CES-D short form scale has for women report more symptoms of depression than men (Van de Valde, 2019). Women also score higher on the HADS-A scale measuring anxiety (Langvik et al, 2016). TILDA's Wave 4 report of Quality of Life found women's CASP-12 scores across waves to be higher than men. This indicates a better Quality of Life and contrasts with studies from other countries which have found widowhood and less financial resources to result in older women having a poorer Quality of Life than men (McGarrigle, Ward. 2018). It is also important to consider how studies exclude women farmers due to inequalities in farm ownership. Quinn-Mulligan et al. (2021) have pointed to the lack of recognition of female farmers in Ireland due to patriarchal custom and practice of farm succession.

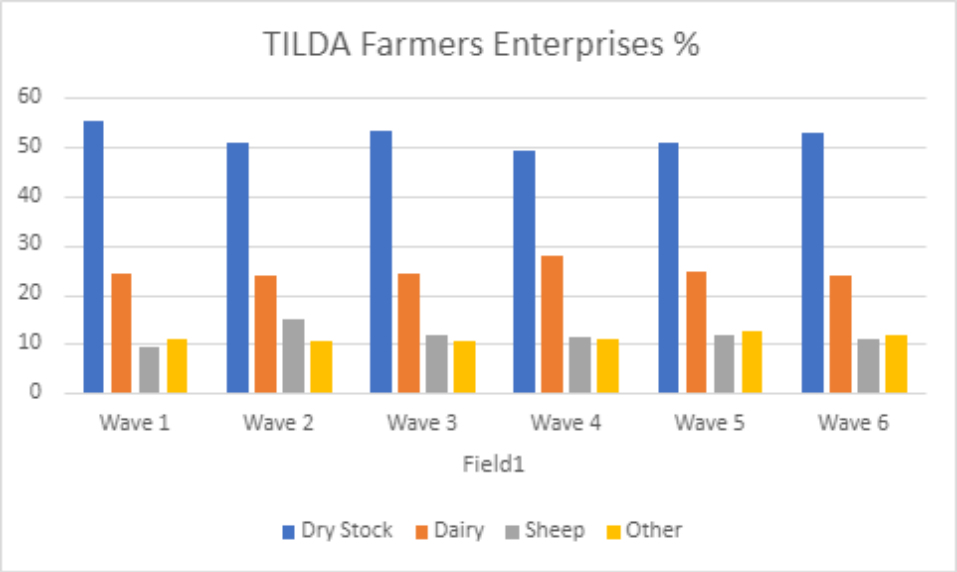
FIGURE 2.2 GENDER OF FARMERS AND RURAL WORKING NON-FARMERS IN TILDA



2.2.10 Farm system

To avoid the inclusion of individual data that may identify a participant, and for the purposes of the preliminary research Variable WE309 recording farm system in 11 categories was recoded into a new variable with 4 categories 1) Dry stock/Beef 2) Dairy 3) Sheep 4) Other. The breakdown farm type is broadly consistent across waves. Compared to the national average, dairy farmers are overrepresented in TILDA. There are proportionally twice as many dairy farmers in TILDA as is the national average. The farm structure survey of 2016 identifies 57% of farmers as being involved in dry stock (beef) production, 11.7% as being involved in dairy and 11% in sheep. Dairy farmers are on average younger at 52 years compared to 57 (Farm Structure Survey-CSO, 2016).

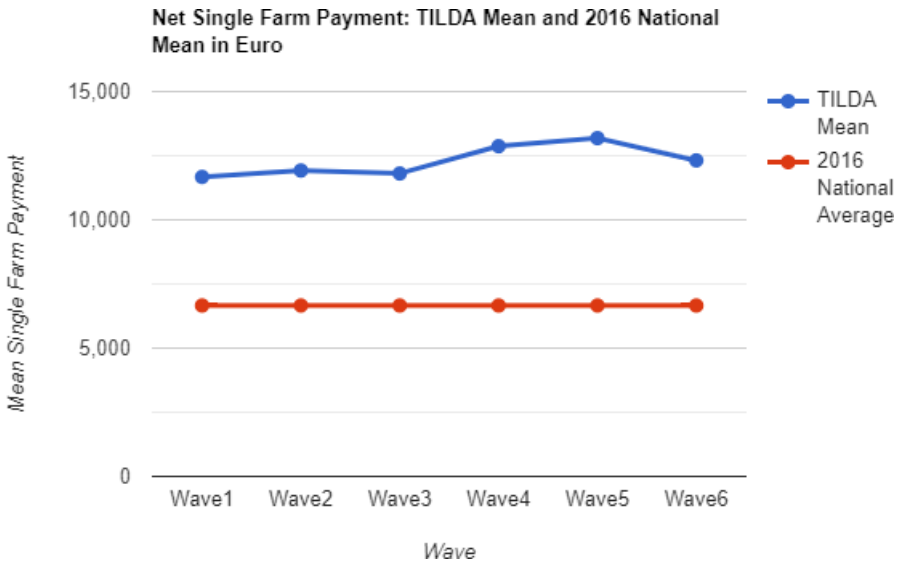
FIGURE 2.3 FARM ENTERPRISES OF FARMERS IN TILDA



2.2.11 Single Farm Payment

The question "How much is your Net Single Farm Payment, i.e., after National Reserve and Modulation reduction?". Is coded in variable WE312. Farmers in TILDA are in receipt of a larger single farm payment than the national average, as recorded in the NFS. There is also an increase in the average single farm payments received by farmers in TILDA after Wave 3 and this corresponds to changes in the scheme after 2015. Single farm payments were broadly consistent in Ireland from the period of 2000/2002-2014 (Pp. 6, Department of Agriculture, Food and Marine). The basic payment scheme replaced the single farm payment in 2015. The purpose of this change is to move towards greater convergence of payments (Pp. 3, Department of Agriculture, Food and Marine). The mean payment in 2016 was €6,662 (Pp. 6, Department of Agriculture, Food and Marine). The average farm size for this cohort was 33.6 hectares (Pp. 6-7, Department of Agriculture, Food and Marine).

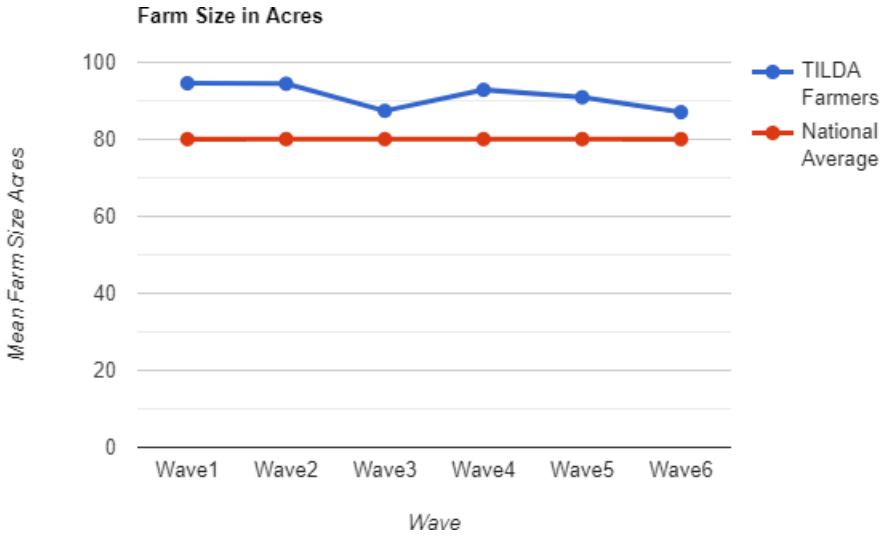
FIGURE 2.4 SINGLE FARM PAYMENT OF FARMERS IN TILDA



2.2.12 Farm Size

Farmers in TILDA own more land than is the national average. More modest than expected, given the divergence in mean single farm payment between farmers in TILDA and those in the general population. A high number of TILDA participants refusing to answer question WE312 may be the cause of this. It can also be due to a greater number of dairy farmers in TILDA's sample which is outlined above. Farm size in TILDA is recorded in acres. This is collected in CAPI. The census of Agriculture 2016 determined the average farm size to be 32.4 hectares, just over 80 acres. The graph below shows the mean farm size among farmers in TILDA across waves compared to the national mean farm size in the 2016 census of agriculture (2016).

FIGURE 2.5 FARM SIZE OF FARMERS IN TILDA



2.2.13 Psychometric Tests in TILDA

Centre for Epidemiologic Studies Depression Scale (CES-D-8)

The CES-D Scale is a short self-report scale that is designed to measure depressive symptoms in the general population. It is specifically designed for use in studies examining the relationship between depression and other variables across population subgroups.

Its emphasis is on the affective component of depression and anxiety, depressive mood. It was tested both in household surveys and in psychiatric settings. The items on the CES-D scale were selected from other previously validated depression scales. Components of depressive symptomatology that are assessed in CES-D scale were identified in literature are depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance. The validity of the CES-D scale was established by correlations with other self-report measures as well as in correlations with clinical ratings of depression, and by relationships with other variables which support its construct validity. 16 and above diagnostically relevant (Radloff. 1977).

Distinct from other psychometric tests in TILDA the CES-D scale was collected in the initial CAPI stage of the study, rather than through the SCQ that was returned by post. TILDA uses the shorter

CES-D-8 which has also been found to be valid and instrument for screening depression among older adults. The CES-D-8 has a range of scores from 0-24. The higher the score the greater the symptoms of depression (Karim et al., 2015).

Hospital Anxiety and Depression Scale (HADS)

HADS was developed in order to access patients for symptoms of depression and anxiety in a clinical setting. Included in TILDA is the subscale used to test for symptoms of anxiety. A higher score on this scale indicates more symptoms. There are 8 items on the anxiety subscale and items are accessed on a five-point scale. It has been found to be a reliable instrument for screening for significant anxiety and depressive symptoms for patients attending a general medical clinic. It has also been shown to be a valid measure of the severity of disorders. (Zigmond, et al. 1983).

Perceived Stress Scale (PSS-4)

Perceived stress is assessed using a four-item version of the Perceived Stress Scale (PSS-4). The PSS-4 includes four questions about how the participant felt using a five-point scale, ranging from Never (0) to Very Often (4). Responses to the four items are summed to assess stress perception, with a maximum score of 16. The higher the score, the higher the levels of perceived stress. (Cohen et al, 1994).

UCLA Loneliness Scale (Version 3)

TILDA uses an adapted version of the UCLA Loneliness Scale (Version 3) with 5 items scale designed to measure one's subjective feelings of loneliness as well as feelings of social isolation. The total score ranges from 0-10. Higher scores indicate higher loneliness (Russell, 1996). Participants rate each item on a four-point scale: Often, Sometimes, Rarely, Never. Version 3 is an adaptation of the original 20 item scale. (Russel et al, 1978).

CASP-12 Scale

CASP-12 scale is an abbreviated version of the CASP-19 measure of quality of life (QoL) amongst older people. It was developed as other measures focused on measuring (poor) health and did not address positive aspects of ageing. It is designed to record the active and beneficial experiences of later life rather than focus on medical and social care issues. The scale is composed of 4 sub-scales, the initials of which make up the acronym: Control, Autonomy, Self-Realization and Pleasure. (Borrat-Besson et al, 2015).

2.2.14 Statistical model for Paper One

Multivariable or multiple regression was selected for Paper One in this study. Multivariable regression has been used by epidemiologists for assessing individual and population level risk (Holford, 2002). Multivariable regression concern correlation and allows for a sophisticated exploration of the interrelationship among a set of variables (Pallant, 2020). Psychometric test provide a score, that as outlined above can inform us of farmers' wellbeing and mental health symptomology relative to a similar (rural, working) cohort of non-farmers. This dependent outcome can be explored using multivariable regression in relation to the independent binary variable created based on TILDA's question WE301, a farmer/non-farmer variable.

Multiple regression allowed for us to control for age and gender as outlined above farmers in TILDA are more predominantly male and older than the population of non-farming rural workers in TILDA. Multivariable regression allows for considering a set of variables (age, gender, farmer/nonfarmer) alongside which variable is the strongest predictor of outcome and whether a variable (e.g., farmer/nonfarmer) can predict an outcome (psychometric score) when the effect of other variables (age and gender) are controlled for (Pallant, 2020). This allowed for the specific impact of farming on wellbeing and mental health outcomes for an older Irish rural cohort to be determined.

2.3 QUALITATIVE METHODS (PAPERS TWO AND THREE)

To explore the unique features of farming that have a bearing on the wellbeing it was necessary to develop on the analysis carried out using the TILDA dataset. To best address this research questions a qualitative methodology was necessary. Paper One outlines the findings based on analysis of Wave 5 and 6 concluding that the COVID-19 pandemic had a negative impact on the wellbeing and mental health of farmers and non-farmers alike. In contrast to other studies, analysis of TILDA did not find farmers to have a worse mental health than non-farmers. This is despite the various stressors that farmers are subject to and the increasing isolation and dangers of the COVID-19 pandemic. With an understanding of farmers' wellbeing and mental health in relation to a comparable population it was also necessary to investigate what potential protective factors are inherent in farming, acting as positive psychological resources or promoting wellbeing.

2.3.1 Semi-Structured Interviews

As Sandelowski (2000) notes, quantitative research confines the conversation possible and sets predefined limits on the variables that can be discussed. Qualitative research by contrast allows for the introduction of unexpected variables during interviews and for research participants to provide their own interpretation of events. In this sense it centres the participant interviewed and, in this study, allowed for farmers to discuss what factors they defined as being key for wellbeing.

The use of semi-structured interviews rather than rigidly following a predetermined set of questions allowed for greater flexibility. It was possible to introduce follow-up questions based on information provided by farmers interviewed. As wellbeing is a complex concept and this interview method allowed for a nuanced and detailed discussion). As Roulston (2010) notes it is possible to change the sequence of questions in the interview so as to make conversation flow more naturally and to tailor questions to individuals as is relevant. This was particularly useful in my study as the farmers were varied with contrasting farm systems bringing separate concerns and challenges alongside benefits in terms of wellbeing. Some farmers supplemented income with off farm employment and farmers interviewed had a variety of circumstances in terms of household structure that changed individual experience both during the COVID-19 pandemic and more generally.

2.3.2 Semi-Structured interview questions

The interview questions were developed based on the literature review. This included literature pertaining to farmers' wellbeing specifically as well as factors examined in cross sectional studies internationally concerning mental health during the COVID-19 crisis. The questions concerned farming as an occupation, health and wellbeing, social and personal experience in the context of the COVID-19 pandemic. The questionnaire is included in Appendix A.

2.3.3 Recruitment process: snowball methodology

The methodology of this study, using a snowballing technique of recruitment and semi-structured interviews advantage of snowballing technique employed is that it can help to reach those other methods cannot reach (Platzer and James, 1997). Noy (2008) also pointed to the utility in snowball sampling in accessing hard to reach populations. Farmers by nature are geographically dispersed and in Ireland operate typically as self-employed people on the site of their farm and home. While farmers have been recruited at live auction marts in studies of heart health in Ireland (see van Doorn et al., 2017) this would not be suitable for a study of this nature where it was necessary to have lengthy and detailed conversations about the nature of farm work and lifestyle and its relationship with wellbeing.

Farmers participating in this study were well placed to identify others with an interest in this research and who could articulate a perspective on their experience of the COVID-19 crisis. Noy (2008) also points to this capacity for the snowball recruitment method to identify connections and networks among research participants. While the exact nature farmers' connections to one another were not of key interest in this study, farmers interviewed tended to be highly motivated and conscious of the potential positive polity impact that research of this nature may have. Several were engaged in farmer organizations and had a keen interest in mental wellbeing, as well as a concern for farmers suffering isolation and stress that was a motivating factor in their participation. Only on one occasion was a farmer who was approached for interview unwilling to participate.

A potential limitation of the use of a snowball is the risk of a data bias in the sample related to the snowballing recruitment technique as participants may be unlikely to refer researchers to those who have suffered greatly during the pandemic. The use of familial and social networks to identify new participants may result in fewer disclosures of distress as participants may feel greater concerns over anonymity. On one occasion a farmer interviewed referred to a neighbour suggesting that this individual (also a farmer) would be of interest for the study. During the interview, however, the farmer corrected themselves stating that this would not be recommended as the person in question had suffered a period of poor mental health and had been institutionalized. Concern was expressed that the interview process would be distressing. This was in keeping with the stated ethical intensions of the study which were to not purposefully seek out people who were distressed for interviews. This distinguishes this work form that of

Cleary et al. (2012) their research presented in the report 'Pain and distress in Rural Ireland' which draws from data collected as part of a series of semi-structured interviews with rural men who are engaged with the healthcare services as part of a psychiatric problem they experience. The concern of this research was with the experiences of farmers generally and not those who suffered a particular mental health crisis. The purpose of this research was to understand their subjective experience and the role of diverse factors inherent in their occupation as farmers and wider place context in wellbeing. The snowball recruitment method employed allowed for the collecting of rich and detailed data on this subject.

While the earlies cohort of interviews was concerned exclusively with the experience of farmers during the COVID-19 pandemic this focus shifted after all restrictions were lifted in January of 2022 and it became increasingly difficult for farmers to speak about their experiences of the pandemic confidently. When asked what they felt the difference between the 3 waves of the COVID-19 pandemic and concomitant lockdowns, people interviewed struggled to distinguish between them. Some stated that the pandemic period had 'become a blur'. This engendered a shift in the emphasis of the research and of key questions. Reflected in this shift was a change in the characteristics of the farmers and non-farmers interviewed. A geographical shift took place as the first cohort were drawn from the border region of Ireland which was severely affected by the COVID-19 pandemic. The unique experience in this region during the COVID-19 pandemic, including additional localized lockdowns, is outlined in paper two.

The interviews that followed are not exhaustive of the key regions in Irelands rural geography however a more conscious effort was made to include farmers in the study who live and work in the Eastern, Western and Southern region. The demographics of farmers interviewed in this study are not proportional or representative of farmers in Ireland as a whole. Only one farmer from the Southern region, alongside the East of Ireland economically core in terms of agriculture, was interviewed. Only one farmer interviewed operates a tillage farm and the barley she grows is insignificant economically (3 acres) and was motivated by a desire to keep a tradition alive, using a vintage combine harvester and gather her family and neighbours at harvest time to collaborate and connect socially. The distinct experiences of tillage and vegetable farmers in Ireland could not be explored in this study because of the sample frame. Livestock farmers interviewed had distinct concerns connected to animal disease, fear of injury and death as a result of animal attacks and high workload and little sleep at key times of calving and lambing in the farming calendar. Dairy farmers, in particular relatively small scale but intensive dairy farms

in the border region, are also overrepresented in the study. While dairy farmers represent a minority of farmers in Ireland their numbers are rapidly growing as smaller unviable beef cattle farms are increasingly sold and consolidated as capital-intensive dairy enterprises. The number of dairy farms have increased by 34.8% in the period 2013 to 2020 (Dairy farming- CSO, 2021).

2.3.4 Female farmers interviewed.

A conscious effort was also made to achieve a greater portion of female farmers in the study. Of the farming cohort interviewed (as distinct from stakeholders interviewed on the basis of other expertise and experience) 4 of 7 were interviewed in the final months of the study. This represents a minority of farmers interviewed. The interviews with female farmers were particularly valuable and a disproportionate (relative to number interviewed) of qualitative data included in papers 1 and 2 were drawn from these interviews. This reflects a gendered difference in data gathered with female farmers disclosing more experiential data and speaking more frankly about manifestations of occupational stress in farming and distress present during the COVID-19 pandemic. This can be understood in the context of gendered norms which have been examined in rural and farming communities by researchers. Bryant and Garnham (2014) examined the ways in which male farmers' sense of pride is bound up with and identity of stoicism and self-reliance. When experience of adversity in farming challenged this identity, the result is a sense of shame and stigma. The interviews with female farmers also provided important data on the gendered division of labour in farming the stresses arising from a large burden of domestic labour alongside the constant demands of farm work. While family was cited as key support by farmers interviewed, in particular during the COVID-19 pandemic, it was also the case that pressures of farm work coupled with responsibility for childcare placed a psychological burden on female farmers. Female farmers are frequently overlooked in official statistics. Farm succession typically takes place on the basis of patrilineal inheritance and farmers as defined in official statistics are those who own land. Heard numbers are granted on this basis and official statistics have no category for spouses who work on farms but are not the farm holder or name attached to the heard number. Farm spouses are not counted in the census or counted as 'relatives assisting' (Shorthall, 1991). This has led to a dearth of data on female farmers in Ireland.

2.3.5 Research Ethics

Ethical approval for the qualitative and interview-based component of this research was granted by Maynooth University Social Science research ethics sub-committee. Ethical approval was sought on March 31st, 2021, and resubmitted June 25th, 2021. The process for conducting interviews both online and in person was explained in documents submitted. Interviews conducted in person were to be done with all necessary precautions against the COVID-19 virus. This included wearing a KN95 facemask, keeping a 2-meter distance at all time and sanitizing hands. Interviews were recorded by me for the purposes of transcribing and were stored securely using encryption. Information sheets and a consent form was included explaining the purposes of the study and all key questions to be explored (see Appendix A). It was explained that they were participating on the basis of anonymity and that they had the right to end the interview at any point and could request their data be destroyed. A list of support was kept on hand and available for any participant who requested them or who expressed distress during the interview process. Signs indicating that a participant may be distressed include speaking about trouble sleeping, excessive worries, feelings of hopelessness, trouble concentrating or loss of interest or motivation for things they normally enjoy (Mental Health–Helping Someone Else, 2022). A print and digital copy was made available. Participants were not offered any financial incentive for participating in the study.

2.3.6 Reflecting on the interview process

After the interviews were completed, I listened back to them and wrote reflective pieces based on the interviews. This was particularly of use in the earlier stages in the interview process where a more detailed assessment of the interviews could be forwarded to the supervisors in this study. This helped to develop discussion on the on the qualitative side to this study, giving an insight into how the interviews were progressing and discussing challenges faced. This process served as a preliminary coding process before NVivo was used. It allowed reflection on the demographics of the farmer in question, their off-farm employment rather they lived alone or not and what bearing this may have on their answers or on their perspective. This encouraged the broadening of farmers interviewed and seeking new interviews with farmers who differed in important way.

Contrasting the perspectives of various farmers became possible. It allowed for me to reflect also on my own position as the interviewer, considering that individuals who knew me previously

and were keen to help with my study may also be less likely to end the interview or decline to answer questions when they felt they wanted to do this. I was able to reflect on concerns that a line must be walked between getting valuable information on the effects of COVID-19 pandemic, rural isolation and occupational stress while not being unnecessarily invasive in my line of questioning or causing distress. Reflecting on the interviews, I reconsidered how questions were framed so as to allow the participants to identify their own practices. For example, my asking 'Would you use the phone?' rather than asking 'How do you keep in contact with people?'. I found it necessary also to ask participants more questions about their own subjective experience of the COVID-19 pandemic as interviews progressed, to avoid too much detail about the specific changes in practices they used to limit the spread of the virus as this was not of key interest for the study.

Reflecting on answers to questions related to farmers as essential workers, I understood that this was leading to analytical answers related to the chain of production rather than farmers' sense of pride in their work and self-esteem. I learned through this process also the need to avoid leading questions that farmers interviewed would be tempted to answer in the affirmative without greater reflection, for example asking, "So would you be used to the (COVID-19) restrictions now?". This formation I found on reflection may have guided the answer of a farmer interviewed. I was able to understand themes arising in the interviews in a new light reflecting on them on a second listening. This included the role of social media, but also how news media is consumed and concerns around alienation and social atomization that extended beyond the specific impact of the COVID-19 restriction.

The role of religion in the social cohesion of rural communities and the shifts taking place in these arose in interviews at an early stage and were explored further as focus shifted from the effects of the COVID-19 pandemic to farmers' wellbeing more generally. In the context of the COVID-19 pandemic changes to funerals and wakes emerged as an important theme.

I was able to reflect on potential avenues of questioning that were missed in the course of the interviews. One farmer spoke about TB and foot and mouth disease, and this may have provided an opportunity to discuss the potential preparedness of farmers for the COVID-19 pandemic with experience in dealing with infectious diseases. In one interview I was unaware of a farmer off farm job which brought her into contact with many older and isolated farmers during the pandemic. I was able after the interview to reflect further on potential questions for a worker in

her role. The reflective process allowed me to collect richer data in following interviews and further explore themes overlooked previously.

2.3.7 Transcribing and Coding the data

NVivo software was used to code data once it was transcribed. Key themes emerged in the course of coding and quotes were organized under (often multiple per quote) codes. NVivo software allowed for data to be organized and filed under the codes created e.g. 'Animal disease' and when selected all quotes coded as relating to animal disease, from all relevant interviews, emerged. Each transcribed interview could also be examined with all quotes coded emerging highlighted and the code attached visible. 35 separate codes emerged each representing separate themes identified in the interview data over the course of the coding process.

TABLE 2.5 FARMERS INTERVIEWED

Name	Gender	Age	Region	Farm System	Off farm job	Date interviewed
James	Male	70-80	Border	Dairy	No	16/04/2021
Brian	Male	50-60	Border	Beef	No	21/04/2021
Sorcha	Female	40-50	Border	Sheep and Beef	Yes	23/05/2021
Conor	Male	50-60	Border	Dairy	No	11/05/2021
Dáire	Male	70-80	Border	Dairy	No	10/07/2021
Una	Female	50-60	East	Dairy	No	21/07/2021
Eoghan	Male	60-70	West	Sheep and Beef	No	18/09/2021
Brendan	Male	20-30	West	Sheep	Yes	18/09/2021
Nuala	Female	60-70	Border	Beef	No	07/09/2021
Cormac	Male	60-70	Border	Beef	Yes	31/01/2022
Stephen	Male	40-50	Border	Dairy	No	31/01/2022
Brendan	Male	60-70	Border	Beef	Yes	02/02/2022
Christopher	Male	60-70	Border	Dairy	No	02/02/2022
Nicolas	Male	50-60	Border	Dairy	No	10/02/2022
Seamus	Male	40-50	West	Sheep and Beef	No	13/10/2022
William	Male	30-40	West	Sheep and Beef	No	13/10/2022
Mairtín	Male	60-70	West	Beef	No	14/10/2022
Christine	Female	50-60	South	Dairy	No	21/02/2023
Jacinta	Female	50-60	East	Dairy and Tillage	No	22/02/2023
Rosa	Female	50-60	East	Sheep and Beef	Yes	22/02/2023
Mairéad	Female	40-50	East	Sheep and Beef	No	23/02/2023

TABLE 2.6 RURAL STAKEHOLDERS INTERVIEWED

Name	Gender	Occupation	Date interviewed	Relationship to farming
Fiona	Female	Clinical contact tracer	24/06/2021	Interfacing with range of clients, including farmers, during COVID-19 pandemic.
Sinéad	Female	Public health nurse	20/09/2022	Working in a rural community. From farming background.
Ciara	Female	Mart manager	14/10/2022	Insight into business and social practices at marts. Marts adapting to COVID-19.
Thomas	Male	Anglican minister	20/02/2023	Ministers to rural community.
Keith	Male	Presbyterian minister	21/02/2023	Ministers to rural community.
Theo	Male	Catholic priest	23/02/2023	Ministers to rural community.
Rory	Male	Bar manager	27/02/2023	Bar located in a rural community. Important node of rural community life.

2.4 CONCLUSION AND CONTRIBUTION TO KNOWLEDGE

The three papers that comprise the core of this PhD thesis explore the question of farmers' mental wellbeing in Ireland. They first paper, which forms Chapter 4, is distinguished by its use of secondary data that is quantitative and representative of older people in Ireland. The objective of this paper is to provide an overview of older farmers' wellbeing, quality of life, stress and mental health and that of a comparable older rural cohort. Given the literature internationally on farming as an adverse material, social and cultural environment conducive to poor wellbeing, it might be expected that older Irish farmers will have poorer mental wellbeing than their non-farming rural counterparts. It might also be expected that this difference would be made more pronounced due to the COVID-19 pandemic which lessened social contact. Both hypotheses were found to be false. Following on from this key finding, Papers two and three can be understood to investigate the causal dimension to this question. What features of farming work and farming life are key in determining mental wellbeing?

This question is explored in a more specific space and time context in paper two, which forms Chapter 5, AND which is concerned with the experience of a sub-set of farmers in a rural Irish region that suffered acutely during the COVID-19 pandemic. These interviews took place in spring of 2021. These interviews revealed that farmers' experienced important continuities in their

work and lives that fostered a positive wellbeing in the context of crisis. The ruptures in pre-existing life were disruptive for the social world of farming and a discontinuity in rituals of death and mourning in particular were a source of distress. The older age profile of farmers and existing digital divide in Ireland could be expected to create acute technostressors for farmers and a negative impact on wellbeing. These technostressors were found to not represent a prominent source of stress and farmers utilized their resilient familial and social networks to adapt to technological change. This often took place through a remaking in the division of labour in the family farm unit. The closure of live auction marts was found to be positive for some farmers, more coinvent and increasing livestock prices. There is a concern that for older and isolated farmers these life auction marts represented an important social outlet that was not replaced. Technology was found to be functional in terms of a continuity in trade but to be limited as a social device. The question of COVID-19 accelerating a longer-term attenuation in social bonds in rural communities arose from interviews and is a key consideration in future research.

Paper three, which forms Chapter 6, draws data from all of the qualitative interviews conducted between 2021 and 2023. It argues that the wellbeing of farmers in Ireland can be understood through a framework of physical, social and emotional landscapes. These categories are not contained but interdependent. The physicality of farmers working outdoors and with animals creates physical dangers but also situates farmers in green space which they valued as therapeutic. The variability and incessant demands of farm work was seen to create the potential for burnout and acute stress but also to promote behavioural activation. The social form that farming takes in Ireland creates a large burden of work for women in farm families. Familial conflict is also seen to be a greater potential source of stress with farm consolidation and high land prices. It was also found that farmers often had close family units and that social bonds were unified and forged practically in collaboration in farm labour. The connection with animals was seen to be developmentally important for children and to cultivate a greater sensitivity. This connection with a farming landscape and a concomitant social realm found expression in its symbolic and emotional features. Rural institutions, rituals and traditions are an overlooked factor in farmers' wellbeing. Rural culture has been examined as a negative in health literature, while this is reflected in data gathered this study also found that farmers construct meaning and articulate their connection with their environment and social world through a landscape. At key points in the farming calendar where farmers are under acute demands farmers draw from religious ritual as a resource in wellbeing. Non institutional religious and spiritual practices in

rural Ireland also connected farmers with their landscape and helped to structure feels of uncertainty for farmers and create a deeper sense of coherence and control.

3. ASSESSING THE IMPACT OF THE COVID-19 PANDEMIC ON OLDER ADULT RURAL WELLBEING: A COMPARATIVE ANALYSIS OF FARMER AND NON-FARMER RURAL POPULATIONS

3.1. ABSTRACT

Objectives: Internationally, there is growing interest in the issue of farmer mental health. Research into this issue highlights the prevalence of low levels of mental health or wellbeing amongst farmers. There is relatively little literature that compares the wellbeing of farmers to other occupational groups or how this may change in response to socially or economically disruptive events. The aim of this study is to assess the wellbeing of older adult famers in rural Ireland, compared to rural dwellers working in other occupations, before and during the COVID-19 pandemic.

Methods: This study analyses data collected using validated instruments as part of The Irish Longitudinal Study on Aging (TILDA) to compare farmers' and non-farmers' scores on The Centre for Epidemiological Studies Depression Scale (CES-D8), Perceived Stress Scale (PSS-4), UCLA Loneliness Scale (Version 3), The Quality-of-Life Scale (CASP-12) and The Generalised Anxiety Disorder Questionnaire (GAD-7). Multivariable regression was used to control for age and gender.

Results: Results indicated a decline in wellbeing for both farmers and non-farmers between Wave 5 (2018) and COVID-19 Wave (2020), which was carried out during the COVID-19 pandemic. This is reflected in all tests apart from CASP-12. Using multivariable regression to control for age, gender and marital status we found that there is no statistically significant difference between farmers and non-farmers.

Conclusions: This research indicates that, during the time period under consideration, there is no difference in wellbeing of rural working farmers and non-farmers that participated in the TILDA study. The results established that the COVID-19 pandemic had a negative impact on the wellbeing of older rural workers, both farmers and non-farmers. These results highlight the benefit of and need for more comparative health studies of farmers with other occupational groups. They also point to future avenues of research into how loneliness and stress is experienced by and affects farmers and non-farmers.

Keywords: Wellbeing, farmers, Psychometric test results, COVID-19 Ireland, Rural

3.2 INTRODUCTION

COVID-19 has precipitated a crisis of mental health globally (Shelvin et al., 2020; Twenge and Joiner, 2020; Wang et al., 2020). Cross sectional studies have found that the impact has varied according to demographic factors such as age, gender, and income (Anon, 2020; Banks and Xu, 2020; Hyland et al., 2020). They also varied spatially with research in China finding symptoms of depression and anxiety to be more common in urban areas and less common in rural areas during the COVID-19 pandemic (Zhang et al., 2021). Relatively little research has been published to date exploring the impact of the pandemic on sub-groups within rural areas. This is significant as farmers, who predominantly live in rural areas, have been identified as being particularly at risk of poor health and wellbeing (Bordi et al., 2021). A substantial body of research has established that farmers face a large number of occupational stressors including dangerous workplace conditions, financial difficulties, and extreme weather events (Daghagh Yazd et al., 2019; Hagen et al., 2019). Daghagh Yazd et al. (2019) reviewed this literature on farmers' mental health and found that while studies comparing the mental health of farmers to other occupations showed mixed results, a majority found farmers to have worse mental health. This stands in contrast to Chiswell (2023) who found most studies concluded that farmers' mental health was the same as or better than non farmers, and that factors other than mental health

result in a higher rate of suicide among farmers. The COVID-19 pandemic has been found to have had a negative impact on farmers' mental health. Research in the U.K. has found loneliness and isolation to be the key factors affecting farmers' mental health in the COVID-19 pandemic while in the U.S this was found to be financial strains and fear of illness (Rose et al., 2023; Scheyett et al., 2023). These studies have considered farmers exclusively and not considered farmers' mental health relative to a similar group on non-farmers. There is also no research in the Irish context on the mental health impact of the COVID-19 pandemic on Irish farmers, and little research generally on farmers' mental health outcomes compared to non-farmers. The analysis presented in this paper seeks to address this gap by comparing stress, symptoms of anxiety and depression for farmers and other rural workers. Our analysis allows for consideration of the impact of the COVID-19 pandemic on the rural population as a whole and a cross-sectional assessment of farmers' wellbeing compared to other workers in rural areas.

We subsequently assess the impact of the COVID-19 pandemic on the wellbeing of these populations. In the next section we outline the data and methods before presenting the results and a short discussion before considering some of the limitations of the study and, finally, presenting conclusions. We draw on a representative health survey of older adults in Ireland; The Irish Longitudinal Study on Ageing (TILDA). To assess the impact of the pandemic on the wellbeing of these populations, we use data collected through Waves 5 (2018-2019) and COVID-19 Wave (2020).

3.3 METHODS

3.3.1 Data Source

TILDA is a nationally representative longitudinal study of the population of Ireland aged 50 and above that seeks to assess the health, social and financial circumstances of the older Irish population over time. The study commenced in 2009 and there have been 6 waves of data collection. The data used in this study are taken from Waves 5 (2018 - 2019) and the COVID-19 Wave (June to November 2020). In Wave 5 interview data was successfully collected from 4,980 participants and in the COVID-19 study from 3,677.

TILDA's sample frame are all those who live in Ireland, are over 50 and who live in the community (not in long term residential care). The dependent variable in this analysis was workers, 'farmer' or 'non-farmer', living in rural areas. To identify rural workers, we used the TILDA residential location which distinguishes between 'rural' and urban' participants. People were enrolled in TILDA as part of a randomly controlled sample. The sampling methods used by TILDA are based on the Geo-directory, the national residential address database, further divided into 3,155 clusters, and then stratified based on Central Statistics Office data according to the population's age, occupation, and geographic location. There are 640 representative clusters selected for the recruitment process (McGarrigle et al., 2018). Residential location of the respondent is grouped into 'rural' and 'urban' area based on Central Statistics Office definitions of rural and urban Electoral Divisions; i.e. small geographic areas used for reporting census data. Rural regions in County Dublin, the location of Ireland's capital, are not included in the 'rural' sample and are coded as 'Dublin City and County'. This research has not used the 640 clusters as a basis for analysis as it is concerned with a small cohort of TILDAs sample frame, exclusively the working rural population. It is not intended to be generalisable, not looking at prevalence or national estimates, but instead to examine what role farming as an occupation may have in psychometric test scores as an indicator of mental health and wellbeing.

In TILDA's Computer Aided Personal Interview (CAPI) those who stated that they were self-employed were asked the nature of their business or occupation. If they answered farming, they were asked if they own, or have owned a farm at any time during the last 2 years? Identifying farmers in this way narrows the definition of farmer and does not include those who may labour on a farm for a wage or work alongside a member of their household. However, farm workers are a distinct occupational group and have been found to have different health outcomes to farm owners and operators (Hagen et al., 2020). For this reason, the 'farmer' sample referred to in this study refers to farm owners rather than farm workers. The 'non-farmer' sample is defined as those who indicated they do not own a farm but were in employment and live in a rural area. The independent variables included age and gender.

Independent variables included in the analysis include age, gender, marital status (married, never married, separated/divorced and widowed). and measures of wellbeing that were drawn from the Wave 5 Computer Aided Personal Interview (CAPI) and a COVID-19 Wave self-completed questionnaire (SCQ) that are completed as part of the TILDA data collection process.

In the absence of one-to-one data collection during the COVID-19 pandemic, a SCQ was sent by post to all participants, while in Wave 5 this was handed over in person and returned by post. New questions were added to the SCQ capturing information on aspects of people's lives during the COVID-19 pandemic including, changes in behaviour and social interactions, physical health and psychological wellbeing, healthcare utilization, and exposure to SARS-CoV-2. For both Waves 5 and the COVID-19 study, psychometric scales relating to wellbeing included the Centre for Epidemiological Studies Depression Scale (CES-D8), Perceived Stress Scale (PSS-4), UCLA Loneliness Scale (Version 3), and the Quality-of-Life Scale (CASP-12). An additional measure was included in COVID-19 Wave, the Generalised Anxiety Disorder Questionnaire (GAD-7) to assess levels of anxiety within the population over 50 at that time (Ward et al., 2021). The CES-D-8 scale is a short self-report scale that is designed to measure depressive symptoms in the general population, it has eight items and the range of scores is from 0-24. The higher the score the more prominent the symptoms (Briggs., 2018). The PSS-4 is used to assess stress perception, with a maximum score of 16. Once again, the higher the score, the higher the levels of perceived stress (Cohen and Mermelstein, 1994). TILDA uses an adapted version of the UCLA Loneliness Scale (Version 3) with a five-item scale designed to measure subjective feelings of loneliness and feelings of social isolation. The total score ranges from 0-10. Higher scores indicate higher levels of loneliness (Russell, 1996). The CASP-12 scale is a measure of quality of life (QoL) amongst older people. It is designed to record the active and beneficial experiences of later life rather than focus on medical and social care issues. The scale is composed of four sub-scales, the initials of which make up the acronym: Control, Autonomy, Self-Realization and Pleasure. CASP-12 has an overall summary measure on a 0–36 scale: high scores correspond to greater QoL (Ward et al., 2021). GAD-7 assesses how worried, tense or anxious an individual felt over the preceding week. Responses to the items are summed to a maximum score of 21. The higher the score, the higher the anxiety levels (Löwe et al., 2008).

Means and standard deviations were calculated for each psychometric scale and paired t-tests were used for univariate comparisons. Multivariable regression was used to control for age and gender and marital status to assess the level of difference in wellbeing, if any, between farmers and non-farmers in rural areas for Wave 5 and the COVID-19 study. 'It was not possible to control for economic variables as there is too much missing data. Too few farmers reported their income or farm size. Table 3.1 shows national average farm size and family farm income (Dillon, 2021). A complete case analysis was conducted. Psychometric test results were tested by TILDA

researchers in order to confirm the normality of residuals. The internal consistency of all the tests in Wave 5 were established and Cronbach alpha results are 0.88 for CASP-12, 0.96 for CES-D8, 0.85 for UCLA Loneliness Scale and 0.90 for the PSS. For the GAD in the COVID-19 wave this is 0.92.

TABLE 3.1 IRELAND FARM SYSTEMS: MEAN FARM SIZE AND FAMILY FARM INCOME NATIONALLY

	Cattle Rearing	Dairy	Sheep	Tillage
Mean Land Owned (ha)	30.2	50.2	40.1	55.9
Mean Family Farm Income	€10,865	€98,745	€20,794	€57,939

3.4 RESULTS

In Wave 5, 574 TILDA participants lived in a rural area and were classified as working. Of these 120 were identified as farmers and 454 non-farmers. The mean age of these populations was 68 (standard deviation (sd) 6.98) and 62 (sd 5.34 respectively. Whilst most non-farmers included in the study were female (58%), the vast majority of farmers were male (90%); this is reflective of the national population of farmers (CSO, 2020). In the COVID-19 Wave there were 573 rural participants who were classified as working, 453 non-farmers and 120 farmers. The mean age was 69 (sd 7.13) for farmers and 64 for non-farmers (sd 4.98). The gendered composition of these populations was unchanged. The increase in average age reflects the time span between Waves 5 and the COVID-19 Wave. Due to the small cohort of female farmers a separate analysis of female farmers could not be conducted.

Mean scores associated with each of the wellbeing indicators for Wave 5 and COVID-19 study are presented in Table 3.2. The results of the paired t-test assessing whether the observed changes in the scores of farmers and non-farmers are statistically significant are presented in Table 3.3.

3.4.1 Symptoms of Depression and Anxiety

The results establish that the mean score of depression (CES-D8) symptoms reported by farmers increased significantly ($p<0.001$) from 1.76 to 4.18 and that the median score increased from 1 to 3 for farmers. A similar pattern was observed for non-farmers with a statistically significant increase in the average score and increase in the median score to 3. It is notable that whilst

farmers recorded a lower score for depressive symptoms at Wave 5, they were broadly similar to their non-farming counterparts when the COVID-19 study was conducted. When Age, Gender and Marital status are controlled for (as presented in Table 3.3 the CES-D-8), score increased between Wave 5 and COVID-19 Wave, and this increase was similar for both farmers and non-farmers. TILDA included the GAD-7 instrument to assess symptoms of anxiety during the COVID-19 Wave, i.e. this data is not available for Wave 5 and hence comparisons of changes over time are not possible. GAD scores were higher in non-farmers than farmers.

3.4.2 Perceived Stress

In contrast with the CES-D8 results, farmers reported a higher average score for PSS (3.84) compared to their non-farming counterparts (3.41) in 2018 (Wave 5). Non-farmers, however, had a higher score in the COVID-19 Wave. Data established that, on average, perceived stress increased for farmers but this change was not statistically significant. This is reflected in no change to the median perceived stress score of 4. Non-farmers, however, experienced a statistically significant increase ($p<0.001$) in stress and, reflecting this, the median score increased from 3 to 4. Table 3.3 shows that following adjustment for socio-demographic variables, a similar increase in stress was seen for both farmers and non-farmers.

3.4.3 Loneliness

Average loneliness scores for both farmers and non-farmers were largely similar at Wave 5; 1.33 and 1.28 respectively. Unsurprisingly, given public health restrictions and physical distancing requirements, the average UCLA loneliness scores for both populations increased substantially and significantly ($p<0.001$) during the pandemic. This increase remained when age, gender and marital status are controlled for as shown in Table 3.3. This is reflected in the change in the median scores from 1 to 4 for farmers and from 0 to 4 for non-farmers.

3.4.4 Quality of Life

The assessment of CASP-19 QoL suggests that there was little difference in the average scores for the two populations at Wave 5 and this remained the case at the time of COVID-19 Wave data collection. Whilst there was a small decline in the average score for farmers, which corresponds to a fall in the median value from 29 to 28, this was not statistically significant. No

change was observed amongst the population of non-farmers. This is also the case following adjustment for age, gender and marital status.

TABLE 3.2. CHANGE IN THE MEAN MENTAL HEALTH AND WELLBEING SCORES OF BETWEEN WAVE 5 AND THE COVID-19 STUDY.

	Farmers			**Non Farmers**		
	Wave 5	COVID-19 study	p-value	Wave 5	COVID-19 study	p-value
CES-D8						
Mean (sd)	1.76 (2.7)	4.18 (3.6)	<0.001	2.23 (2.8)	4.2 (3.7)	<0.001
Median	1	3		1	3	
N	120	107		453	422	
missing	0	13		1	32	
PSS-4						
Mean (sd)	3.84 (3.12)	4.18 (2.7)	0.387	3.41 (2.8)	4.33 (2.8)	<0.001
Median	4	4		3	4	
N	103	115		407	439	
missing	17	5		47	15	
UCLA Loneliness						
Mean (sd)	1.33 (1.7)	4.51 (1.5)	<0.001	1.28 (1.8)	4.28 (1.4)	<0.001
Median	1	4		0	4	
N	104	114		417	437	
missing	16	6		37	17	
CASP-12						
Mean (sd)	28.08 (5.3)	27.79 (4.7)	0.669	28.66 (4.6)	28.42 (5.2)	0.484
Median	29	28		29	29	
N	99	104		402	420	
missing	21	16		52	34	
GAD-7						
Mean (sd)		1.79 (3.6)			2.73 (4.1)	
Median		0			1	
N		115			437	
missing		5			17	

*P values from paired t tests

TABLE 3.3 MULTIVARIABLE LINEAR REGRESSION MODELS OF PSYCHOMETRIC SCALES: FARMERS COMPARED TO NON-FARMERS, THE IRISH LONGITUDINAL STUDY ON AGEING (TILDA), COVID-19 STUDY

	β	SE	t	P-Value	(95% Confidence interval)
Psychometric scales					
CES-D8					
Farmer	-0.278	0.357	-0.78	0.435	[-0.978,0.421]
COVID-19 Wave	1.978	0.221	8.95	<0.001	[4.684,11.149]
Farmer x Wave	1.547	0.484	0.90	0.368	[0.598,4.003]
PSS-4					
Farmer	0.612	0.331	1.85	0.065	[-0.038,1.262]
Wave 6	0.969	0.196	4.94	<0.001	[0.584,1.353]
Farmer x Wave	-0.567	0.430	-1.32	0.187	[-1.411,0.276]
UCLA Loneliness Scale					
Farmer	0.128	0.185	0.69	0.489	[-0.235,0.491]
COVID-19 Wave	3.021	.0110	27.58	<0.001	[2.806,3.236]
Farmer x Wave	0.194	0.242	0.80	0.421	[-0.280,0.668]
CASP-12					
Farmer	-0.516	0.586	-0.88	0.379	[-1.666,0.634]
COVID-19 Wave	-0.360	0.344	-1.05	0.295	[-1.035,0.315]
Farmer x Wave	-0.029	0.768	-0.04	0.970	[-1.535,1.477]

Note: Models were adjusted for age and gender and marital status.

3.5 DISCUSSION

This research indicates that, the COVID-19 pandemic had a negative and statistically significant impact on the mental health of farmers and non-farmers in Ireland. When age and gender and marital status are controlled for, there is not a distinct crisis of mental health among older farmers in Ireland either prior to or arising from the public health restrictions introduced to combat COVID-19. While there is some indication that the stress score (PSS-4), and its rate of increase across waves, was lower for farmers this was not significant when age, gender and marital status were controlled for. Indeed, compared to the entire cohort in the COVID-19 study, urban and rural, working and those not employed the exclusively rural and working sample examined in this paper had lower mean perceived stress, anxiety, and depressive symptom scores (De Looze and McDowell, 2022). Ireland's first lockdown was Europe's longest, with non-essential shops and services were closed for 120 days from March 12th, 2020 (McGreevey, 2020). For most the time of data collection COVID-19 restrictions were imposed uniformly across the Republic of, rural and urban. Local lockdowns were imposed on counties of Kildare, Laois, Offaly

(from August 7th) and Cavan, Monaghan and Donegal (from October 15th) which have a mix of rural and smaller urban areas. Farmers were deemed as essential workers and in the course of their work could travel outside of mandated limits on movement (Morrissey, 2020). Research has found that for some farmers isolation was reframed as positive in the context of the COVID-19 pandemic and a continuity in farm work was protective psychologically (O'Reilly et al., 2023) Further research needs to be conducted across nationally representative datasets including TILDA in order to understand how farmers' wellbeing compares to non-farmers. With regard to farmers, it may be that rural location and employment were protective for the mental health above and beyond the specifics of their occupation. Farmers faced unique pressures during the COVID-19 pandemic outlined by Rose et al. (2023) including isolation and a higher rate of comorbidities. Despite these potential stressors, this study shows that when demographic factors are controlled for, being an older farmer has no significant impact on wellbeing or mental health symptoms compared to other similar-aged rural workers in Ireland. These findings are consistent with those of Chiswell (2023) who found a majority of studies did not identify farmers as having poorer mental health compared to non-farmers. It also is consistent with O'Reilly et al. (2023) who found that while the COVID-19 pandemic presented challenges to farmers' wellbeing, farmers were able to use social networks and technological opportunities to adapt to this adverse environment.

When considering these findings, it is worth noting a number of cross sectional studies in Ireland and the U.K. have found younger people to have suffered the greatest mental health impact during the COVID-19 pandemic (CSO, 2021; Shevlin et al., 2020). This study, limited as it is to an older age cohort may not be generalizable to younger rural populations. Associated with this, research in Ireland has established that as farmers get older they are more likely to experience stress but at a declining rate, i.e. fewer farmers will experience stress but for those that do, the symptoms are more acute (Brennan et al., 2022). The unique conditions of Irish farming need to be taken into account. Research in farmers' mental health has predominantly been conducted in developed countries with United States, Australia and United Kingdom accounting for the greatest share (Daghagh Yazd, 2019). Livestock farming predominates in Ireland with smaller farm enterprises compared to Australia, the U.S and U.K. with a mean size of 32.4 hectares (CSO, 2023; Lowder et al., 2016). A limitation in this study is the potential under count of farmers including female farmers. As farming in Ireland exists on a smaller scale, farms are often operated as family enterprises. Land is inherited patrilineally and women who work farm enterprises are

often excluded from official statistics as they will not own deeds to land or the associated herd number (Shorthall, 2014). The use of the variable in TILDA based on having 'owned a farm at any time during the last 2 years?' may exclude women and others in farm households who will work the farm enterprise but may not appear in the data as they will not identify as a farm owner or primary operator.

There are also important socio-economic differences between the farmers included in the TILDA and farmers generally; 22.7% of farmers in TILDA are dairy farmers compared to 11.7% nationally (CSO, 2018). This has a number of implications but, in general, dairy farmers have larger farm sizes, higher incomes, have more secure incomes and are more likely to farm full-time with longer on farm working hours (Dillon et al., 2021). Dairy farmers are also more likely to be married and have, on average, higher levels of education compared to farmers with other types of enterprise, e.g. beef (Donnelly, 2022; Meredith et al., 2020). The bias towards dairy farmers in the TILDA sample may affect the results presented here as these farmers may have greater material as well as social resources. Given this, we recommend that additional research be undertaken to assess whether there are differences within the population of farmers in terms of their experience of stress and loneliness or anxiety. It is important that policy makers consider the needs of all sections of the rural community who will have suffered challenges to their mental health as a result of the COVID-19 pandemic. The unique setting of farmers will necessitate an effort on the part of health care services to reach farmers at locations that are of central importance to their occupational and community connections, such as live auction marts (van Doorn et al., 2017).

3.6 CONCLUSION

From Wave 5 (2018) to the COVID-19 study (2020), mental health and wellbeing declined, observable across all psychometric tests except CASP-12. A decline in wellbeing was evident amongst older farmers and non-farmers in Ireland. When adjusted for age, gender and marital status, there was no evidence of a difference between farmers and non- farming rural workers in the study. Further research on farmers' mental health and wellbeing need to examine psychometric score outcomes for farmers in the context of other comparable

groups. It is also necessary that further research be undertaken to understand how stress and loneliness may be experienced distinctly by farmers and non-farmers and what occupational factors may play a role in wellbeing and mental health outcomes.

4. CONTINUITY, CHANGE AND NEW WAYS OF BEING: AN EXPLORATORY ASSESSMENT OF FARMERS' EXPERENCES AND RESPONSES TO PUBLIC HEALTH RESTRICTIONS DURING THE COVID-19 PANEMIC IN A RURAL IRISH COMMUNITY

4.1 ABSTRACT

Farming occupations are, in the Global North, generally solitary, and a growing body of research identifies this as one of the factors that underpins low levels of wellbeing and poor mental health amongst farmers. The primary public health response to the coronavirus disease 2019 (COVID-19) pandemic focused on reducing transmission of the virus by limiting interactions of people. This article seeks to assess the impact of these restrictions on farmers' experience of isolation and how it shaped their wellbeing. Applying a broad socio- ecological framework, we analyse change, continuity and shifts in social and economic relations and their spatial reconfiguration during the COVID-19 pandemic as recounted in semi-structured, qualitative interviews. We found that while COVID-19 has disrupted socio- spatial relations, including key sites of socialisation for farmers and rural communities, occupational isolation was viewed as a positive feature of farming as was working in nature. Familial and informal networks of support were important throughout the pandemic, while novel engagements with communication technologies facilitated both change and continuity of social and economic interaction. Whilst these findings are broadly positive, the reconfiguration of, particularly, economic relations is viewed as accelerating the turn towards service delivery using technology and, consequently, further reducing opportunities for social interaction.

4.2 INTRODUCTION

The international literature points to the impact of COVID-19-induced changes on human wellbeing, directly as a pathogen and because of the disruption to social and economic networks

that it precipitated (Twenge & Joiner, 2020; Weinberger et al., 2020). These disruptions were associated with the introduction of public health guidelines and regulations that sought to limit personal interaction as a means of reducing or eliminating the spread of the virus (Meredith et al., 2020). Older people and those with pre-existing health conditions that increase the risk of experiencing the most adverse outcomes of infection were advised to minimise contact with others (Hernández et al., 2020). Whilst these restrictions generally applied to all populations regardless of location, rural populations, older people and those living alone were considered to be at particular risk of experiencing social and emotional loneliness and reduced wellbeing resulting from increased social and physical isolation (Amerio et al., 2020; Herron et al., 2021; Van Beek & Patulny, 2022). In this context, farmers who, in Ireland and many other developed countries, are characterised by a relatively old age profile, were considered a potentially vulnerable group (Meredith et al., 2020). This construction of vulnerability needs to be critically assessed in light of the fact that farmers, unlike many groups in society, were deemed 'essential workers' and asked to keep working as normal throughout the pandemic whilst complying with prevailing public health regulations or recommendations. Furthermore, farmers generally spend time outdoors whilst working and, consequently, they are immersed in natural 'green space', which is viewed as being both therapeutic and protective of mental health and wellbeing (Ahmadu et al., 2021). This conclusion is supported by recent research that found that nature contact buffered the negative effects of lockdowns and other public health restrictions on mental health (Pouso et al., 2021).

Counterbalancing, and possibly outweighing, the potential benefits of being a farmer during the pandemic, they, like the rest of society, were impacted by the closure or restricted access to in-person retail, banking and social services and engagement in associated cultural practices. These impacts need to be considered against the backdrop of wellbeing and mental health issues confronted by farmers and farm workers internationally (Bossard et al., 2016; Roy et al., 2013) and in Ireland (Brennan et al., 2022; Van Doorn et al., 2019). In the UK, the Royal Agricultural Benevolent Institution (2021) found that 36% of the farming community is probably or possibly depressed and levels of isolation are high. This growing body of literature highlights that, contrary to popular perception, farmers are disproportionately affected by poor physical and mental health (Brumby et al., 2012; Patel, 2005; Younker & Radunovich, 2021).

To explore the experiences and impacts of public health restrictions on farmers, we draw on a broad socio-ecological model (SEM) to evaluate the disruptive impacts of the COVID-19 pandemic in terms of continuity, change and new forms of social and spatial networks that shape health and wellbeing for Irish farmers. Drawing on an SEM of health, we can identify social and occupational, including economic, relations that connect individuals, communities and agencies or institutions within place(s) that act to enable health and wellbeing but which are also subject to external shocks and disruptions, that is, changes to the governance of public health (Bronfenbrenner, 1979; Kilanowski, 2017). Socio-ecological approaches understand farmers as operating within a series of nested individual, environmental, social and economic systems that are enmeshed through intersections between biological processes and human relations (Massey, 1994). The SEM model foregrounds the significance of the relational nature of socioeconomic processes and how these are structured by personal, societal, political, policy and governance structures and processes, that is, the model highlights that farmers affect and are affected by a complex range of social influences and nested environmental relationships. The SEM recognises that these influences and relationships are fluid and can cross multiple levels. Whilst it is easy to envisage disruption and specific changes to such social or economic practices arising from the introduction of public health restrictions, we are also interested in exploring the durability/resilience of farmers' responses, and the role, if any, of communications technologies in keeping the networks alive.

There is an emerging body of research that assesses the impact of the COVID-19 pandemic on farmers and rural communities (see this special issue and a special issue in the *Journal of Agromedicine*: https://www.tandfonline.com/toc/wagr20/25/4). To date, however, there is relatively little research exploring how farmers navigated the pandemic and the impacts on their wellbeing resulting from disruption to, as well as reconfiguration of, social and economic processes associated with the COVID-19 pandemic. We present the results of qualitative research with representative farmers living in the Border Region of Ireland, a rural region that experienced high levels of COVID-19 infection (Lima, 2021). Our article considers how farmers' experienced and navigated social isolation from March 2020 to May 2021 and their perceptions of how public health restrictions affected their wellbeing and that of the wider farming community. We assess these experiences through their accounts of isolation, changes to everyday social and economic practices and the impact of technology in remaking the place of important economic, social and cultural practices. In addition to reporting their own experiences,

each of the participants was in a position to reflect on the experiences of other farmers within their local area and social and professional networks.

4.2.1 Social Isolation and Wellbeing

Of key concern in this study is the importance of social isolation and its corollary, social contact, as critical to understanding wellbeing of farmers living in rural areas. Holt-Lunstad et al. (2015) defined social isolation as an objective condition based on a pervasive lack of social contact or communication, participation in social activities or having a confidant (see also Gardiner et al., 2018; Poscia et al., 2018, for similar perspectives). This reflects a view that isolation represents a material deficit in social supports. Heylen (2010) presents an alternative perspective, suggesting that social isolation manifests as loneliness and must be considered within the context of each person's expectations. Systematic reviews of the literature on COVID-19 and loneliness have found that loneliness has been a significant issue during the pandemic and that loneliness is positively associated with poor mental health symptoms (Pai & Vella, 2021). We take both these perspectives of isolation, that is, material and subjective, into consideration throughout the article by exploring both impacts and experiences.

4.2.2 Social Isolation and Farming

While farmers live predominantly in rural regions and often spend long periods working alone, the role of isolation as a factor in determining farmers' wellbeing is contested within the literature as an element that may accentuate or attenuate isolation of farmers. While farmers in Norway were found to have more frequent symptoms of anxiety and depression, compared to other workers in their region, they did not have poorer social networks (Torske et al., 2016). In contrast to this finding, research conducted in Australia identified isolation as playing a negative role in farmers' wellbeing, with farmers living in more remote rural communities found to have poorer wellbeing than non-farmers living in the same community (Brew et al., 2016). Qualitative research with Australian farmers also found isolation to be a factor in exacerbating other stresses inherent to farming and furthermore that greater sense of isolation for farmers was linked to maladaptive coping strategies (Brew et al., 2016). In Quebec, Canada, survey data collected from younger farmers found 60% to be at risk of isolation (Parent et al., 2012), whilst qualitative research in Manitoba, Canada, found isolation to be a common theme in discussions for farmers in distress (Sturgeon & Morrissette, 2010). Whilst these findings relate to spatial contexts that

may capture the impacts of extreme remoteness, research undertaken in geographically smaller countries also finds that farmers are at increased risk of isolation. Perceval et al. (2017), investigating farmer suicides, found isolation and loneliness to be key stressors, noting that poor mental health further deepened social withdrawal and isolation. So, whilst geographic isolation can be an issue for rural populations in general, there are also occupational factors that need to be considered amongst farming populations, that is, there is a need to consider a broader set of interrelated socio-spatial and occupational factors.

Qualitative research undertaken with farmers in Australia found that geographical isolation created a sense of anxiety and vulnerability as essential services were not easily accessed. In addition, farming itself was seen as an isolating occupation, and these factors were found to compound cultural and social factors that limited help-seeking (Perceval et al., 2018). Research by Parent (2012) identified a broader set of factors that may influence levels of isolation including education, household structure, relations with neighbours, financial pressures and working hours. These factors were seen to be more important than geographical isolation, that is, isolation and the impact of isolation is not simply one of geography.

There is evidence that developments in agriculture, particularly mechanisation, automation and digitisation are contributing to farmers working alone for longer periods, and that this may exacerbate the issue of isolation (Gallagher & Sheehy, 1994). The replacement of farm labour with capital and increases in the scale and intensity of farms have led to some farmers, particularly owner-operators, working alone for longer periods. These developments may limit farmers' opportunities to connect socially during their working day and outside of it (Lobley et al., 2005; Reed et al., 2002; Wheeler et al., 2023). The COVID-19 pandemic has been a catalyst for greater adoption of, particularly, communications technologies that facilitate farmers to engage in online/remote trading (Marren, 2021). In recognition of the changing farming landscape and a digital skills gap in agriculture. there have been initiatives to provide training for farmers in communication technology (Agriland Team, 2022). The longer-term impacts of this turn to communication technology and their social impacts are unknown. Will it reduce isolation, allowing for geographically isolated farmers to connect with greater ease? Will it increase isolation as farmers engage less with one another in spaces such as in-person marts that have a social role? Or will a digital divide leave a cohort of farmers unable to adapt to changes in service delivery that are increasingly mediated by communication technologies?

4.2.3 The Changing Spaces of Farmers' Lives in Ireland

This section briefly outlines changes to farming in Ireland over the course of decades that, following the introduction of public health restrictions, exposed farmers to higher levels of social isolation. Farming in Ireland was historically labour-intensive, operated at busy seasons under a *méitheal* or cooring system of collaboration between farmers, who assisted with labour on neighbouring farm enterprises (Cush & Macken-Walsh, 2016; Scheper-Hughes, 2001). This took place based on reciprocity and was key to kinship relations in rural areas. These events were of both material and cultural importance, providing space not only for work to be completed but also for farmers to connect socially and invigorate and reinforce community relations. Since, at least, the 1950s traditional *méitheal* practices have weakened,weakening of social ties reflects changes to the structure of farming in Ireland, which has, over several decades, evolved from traditional mixed farms, that is, combining crop and livestock production, to specialised livestock enterprises that are predominantly focused on the production of either beef or dairy products (Crowley et al., 2008).

Persistent low economic returns to beef enterprises have seen many, though not all, farmers in this sector taking up off-farm employment, a side benefit of which is greater opportunities for social interaction (Dillon et al., 2016; Meredith, 2011). This contrasts with dairy enterprises that, since the removal of milk quotas in 2013, resulted in rapid increases in the average herd size and a substantial increase in the workload of dairy farmers (Beecher et al., 2019). These changes resulted in an increase in the social significance of agricultural co-op stores and, particularly, livestock marts. In addition to fulfilling basic economic needs of farmers, they became important social spaces to meet peers and also enact sets of practices associated with being a (good) farmer resulting in the accrual of cultural capital (Burton et al., 2020). Live animals were historically traded at fair days, gatherings that were important economic and social events in rural Ireland (Lennon, 1988) before being replaced by live auctions in purpose-built marts. This transition was advocated by farmer representative organisations, as the mart was seen to increase competition, improve prices and was more transparent as the animals were weighed (Curtin & Varley, 1982). Whilst the core business of marts is facilitating and organising the buying and selling of animals, they play an increasingly important social role where farmers have opportunities to meet, share a meal and catch up on local news, policy and agri-political developments. Internationally, and

in Ireland, the significance of livestock marts has been noted, particularly by health service providers, as locations to reach farmers who are considered 'hard to reach', that is, there are few other sites where farmers gather (Nye et al., 2022; Van Doorn et al., 2019). In this context, the closure of 'in-person' livestock marts, and to a lesser extent of farm supply stores, as part of a suite of public health restrictions introduced following the onset of the COVID-19 pandemic, closed off important social outlets for farmers and increased the risks of loneliness and isolation. These were replaced with online alternatives, including the 'Mart Eye' App (Marren, 2021), which sought to provide digital solutions that met farmers' economic needs (see Appendix C for more detail on guidelines). A range of other farm services moved to 'click and collect systems' to supply farms with equipment, fertiliser and animal feed. This involved farming supply stores receiving orders online or by phone and arranging a sale remotely.

A consideration of the social impact of COVID-19 with respect to farmers in Ireland necessitates a consideration of how restrictions affected routines of religious practice in Ireland, particularly those rituals of death and mourning. Ireland is predominantly Catholic, and while religious practice is declining, mass attendance in 21st-century Ireland has been noted as one of the highest in Europe (Fahey et al., 2005). The decline in attendance at weekly mass (religious observance) has undermined a once important occasion where farmers' social status within the rural community was demonstrated. The continued observance of some religious practices, particularly the rituals associated with death, has been characterised as being as much a social practice, connected to community cohesion, as a religious practice and particularly so for older people (Inglis, 2007).

The significance of the COVID-19 pandemic's impact on expressions of grief and mourning in Ireland have been noted (O'Mahony, 2020). In rural Ireland, rituals of mourning engage the broader community (Toolis, 2017). These traditionally take the form of removals from the under-takers at which wider members of the community paid their condolences to the bereaved family, followed by gatherings of family, friends and neighbours in the bereaved household that precede the funeral, known as *wakes*. Wakes in Ireland have been the subject of historical research, but there is little research on their role in contemporary rural Irish communities (Kuijt et al., 2021). In practice, they continue to be social occasions at which there is an expectation that members of the bereaved persons extended family, neighbours, friends and social network gather to offer social and emotional support to the family through the sharing of stories of the bereaved. Public

health restrictions prescribed these communal rituals and placed severe limitations on the numbers attending funeral masses and burials. These restrictions affected farmers in the same way as they affected all other members of the community; however, social rituals associated with death and, more generally, religious observance are likely to have had a significant impact on farmers' opportunity to engage in communal activities and potentially contributed to increased social isolation.

The remainder of the article presents a preliminary exploration of farmers' experiences of the impact of public health restrictions and assesses their impact on their material and subjective isolation and overall wellbeing. In doing so, we consider what has changed, what has remained and what new ways of connecting and being connected emerged. In the next section, we outline the methods and data, including a brief introduction to and explanation as to why the Border Region was selected, before presenting the results and our discussion and conclusions.

4.3 METHODS

This article draws on four qualitative semi-structured interviews that were conducted as part of a wider study of rural isolation amongst farmers that contributes to the literature by identifying themes for future studies. The relatively small sample size reflects the challenges faced by qualitative research encountered during the COVID-19 pandemic.

An interview schedule was developed based on the review of the literature presented above and informed by public discourse regarding the impacts of public health restrictions on farmers contained in the agricultural media and rural communities as reflected in Dail (the Irish Parliament) contributions. Initial topics included the impacts of public health restrictions on farming and social life, the use of communication technology, the importance of work and expo- sure to green space, fears of illness/transition, social interactions and community cohesion. An iterative process of coding the data was undertaken by the lead author to associate participant responses to the initial questions with these topical areas and, subsequently, to identify themes. Two of the co-authors assessed the coding and interpretation of the participant interviews. Emer- gent themes were identified through iterative discussion and reference to a number of bodies of literature by all authors.

The research participants are drawn from the Border Region in the Republic of Ireland. This region includes five counties from Donegal in the Northwest to Louth on Ireland's East coast.

Whilst the region is proximal to Dublin and Belfast, many rural areas within the region experience relatively poor accessibility to major towns and cities (Department of Environment, 2002) leading to some localities being relatively isolated from both regional and national population and economic centres. The Border Region is of particular interest to studies of the experiences and impacts of public health restrictions. High numbers of COVID-19 infections were recorded in the region, compared to the rest of the country (Lima, 2021; O'Connor et al., 2021), and three of the five counties that comprise the region, Cavan, Donegal and Monaghan, were subject to localised lockdowns. Leitrim and Louth are the other two counties that make up this region. Farming in the region is characterised by relatively small farms that are predominantly focused on beef or dairy production, with sheep rearing largely limited to upland areas, for example, the Cooley Mountains in the east of the region and western parts of County Donegal.

For this article, four representative interviews were selected for analysis. These interviews were conducted as part of a wider study that explores farmer wellbeing in Ireland. The interviews were selected on the grounds that the participants provided high-quality materials and insights across a range of issues and themes regarding their experiences of public health restrictions and the resulting impacts on themselves; they reflect farmers differing in age, gender and farm enterprise (Table 1); and finally, they were in a position to represent the experiences of the wider community. Ethics approval for this research was granted by Maynooth University Social Research Ethics Committee. The farmers interviewed ranged in age from 40s to 80s. One farmer is older and lives alone, and for this reason, he could be considered at higher risk of isolation. The research participants have been assigned a random name as a means of foregrounding their individuality as opposed to the practice of numbering the respondents, for example, Farmer 1, which has the impact of reducing them to an occupational identity. Two farmers, Sorcha and Brian, have younger children and experienced specific challenges due to school closures. Variation in farm system is also important as dairy farming (Conor and James) is labour-intensive, and beef farming often involves the farmer working alone. The two beef farmers, Sorcha and Brian, also had different business models with one selling cattle directly to a factory and another more often selling animals through marts to other farmers. All four of the farmers participating in the study live on the site of their farms in rural areas. A gender difference was noted in that one farmer interviewed is female and responsibility for childcare was a prominent theme in this interview. This points to the need for further research to assess gendered experiences of the public health restrictions associated with COVID-19. Whilst the interviews were ultimately

conducted in person, participants were offered the choice of undertaking the interview using virtual means if they wished. The interviews took place as Ireland emerged from its third lockdown in the spring of 2021. This lockdown was in place following a very substantial increase in the number of cases following the Christmas period. During this period, the most stringent restrictions had been lifted, such as stay-at-home orders.

TABLE 4.1 KEY CHARACTERISTICS OF RESEARCH PARTICIPANTS

Farmer	Age	Gender	Farmer enterprise	Off-farm work	Employees	Household structure	Date of interview
Brian	50–60	Male	Beef	None	No employees; works alone	Lives with his wife and young children	21/04/2021
Conor	50–60	Male	Dairy	None	No employees; works on farm alongside son	Lives with his wife and adult children	11/05/2021
Sorcha	40–50	Female	Beef	Working off-farm in the agricultural sector	No employees; works alone	Lives with her husband and young children	23/05/2021
James	70–80	Male	Dairy	Retired from off-farm employment	No employees; works on farm alongside nephew	Lives alone	16/042020

Notwithstanding this, precautions were taken to limit the risk of exposure to COVID-19 with the interviewer maintaining a distance of 2m from the interview participant, sanitising hands and wearing a KN95 facemask. Given the focus of the interview, that is, on experiences and impacts of public health restrictions on personal and community wellbeing, the interviewer kept a list of health and wellbeing supports in digital and paper copy on hand during interviews to be offered to any participant who expressed distress during or after the interview or who requested information on services available. Symptoms were based on information available from Irelands Health Ser- vice Executive. Signs that a participant may be distressed include speaking about trouble sleeping, excessive worries, feelings of hopelessness, trouble concentrating or loss of interest or motivation for things they normally enjoy (Mental Health–Helping Someone Else,

2022) or if any participant requested a copy. Participants were not offered any financial remuneration or material incentive for their participation in the study. All interviews were conducted by the lead author of this article.

4.4 RESULTS AND ANALYSIS

We outline the key findings of our study informed by analysis of the interview data. These are organised around three primary themes: disruption, continuity and new ways of being. Understanding the coming apart or endurance of key features of farming life as well as the emergence of new practices is key to our analysis of farmers' wellbeing in Ireland during the COVID-19 pandemic. Disruptive change speaks to the breakdown in working and social routines and patterns of life precipitated by the COVID-19 pandemic. The theme of continuity focuses on the features of farming life that were consistent throughout the pandemic and highlight the durability and resilience of both social and economic aspects of farming. The final segment considers new ways of being, and adaptations, particularly those associated with the use of communication technology, required of farmers that supported, and continue to do so, economic and social practices.

4.4.1 Changing spaces of socialisation

Navigating public health restrictions was discussed in detail by the research participants in terms of their impacts on professional, social and community spheres. The fluidity in their discussion of these categories of impact reflects the enmeshing of all three in the day-to-day practices of being a farmer and member of a rural community. Places and practices that formed the focus of much of the discussions included gatherings at livestock marts, farmer or community meetings, pubs, funerals and wakes. In addition to discussing the impacts and implications of the restrictions on their lives and businesses, the participants' contributions reflect concerns that the processes of change had uneven social and economic impacts, with some, particularly older farmers living alone, viewed as more severely affected than others. Interestingly, whilst all research participants spoke of the impacts on their level of social engagement, three of the participants did not necessarily consider themselves to be isolated. Instead, there was a substantial focus on the isolation of other members of their communities. This perspective is reflected in a number of contributions below. Conor exemplifies this when discussing his

experiences of isolation resulting from the limitations on social interaction but felt it is not as severe as with others:

> *Yeah, to a point, except for a phone call, you wouldn't be meeting people like you know. Maybe talking to them in the mart... I was a person who went to a lot of meetings. . . and you do miss all them things because you met a lot of people and talked to people and had a bit of banter and know what's going on you know, so I would miss going to several different things you know. You wouldn't be meeting a lot of people I have to say that.*
>
> *(Conor)*

Conor went on to express concern for a demographic of farmers that he felt were at risk of isolation and poorer wellbeing at this time, particularly those living alone. This was, in his view, compounded for older people who were considered to be at risk of increased isolation due to efforts to protect themselves from the virus.

> *I went over there to visit two elderly neighbours and if they got it and you had been there, you'd be really, it would be very hard. That's why people are so afraid like.*
>
> *(Conor)*

Similarly, whilst Brian did not consider himself to be isolated, he expressed concern for older farmers who may have lost social outlets, such as the mart. He notes that an aspect of isolation was driven by people attempting to maintain their distance, that is, to 'protect' vulnerable populations by not visiting:

> *But for other farmers who were used to going to marts, and it was part of their social outlet, it is hard on them you know. Probably when you have a family . . . it is not so bad, but for a man living on his own, it is probably lonesome enough. He can't, people don't call to him ..., or maybe elderly people used to [have] people call to them and they can't call now you know, and I feel too like I have elderly neighbours around here that I can't call into them or to talk to them you know.*
>
> *(Brian)*

Sorcha also reflected on this point. In her off-farm job, she regularly meets a cohort of isolated farmers who she identified as particularly vulnerable in this period. Asked if the farmers she described would have an opportunity to meet people during the pandemic, Sorcha felt that they did not and went on to explain the implications of the disruptions to conventional (in-person) interaction that enabled social contact were lost:

> *So, all their social outlets are completely shut, the postman is firing the letters from the road nearly,. . . People who called round to them now are afraid to bring anything into them. So, I'd say all their social outlets are completely gone like, do you know?*
>
> *(Sorcha)*

Similar to Brian and Conor, Sorcha also pointed out that the absence of in-person marts would severely impact this group of farmers. She highlighted that the role of marts extended beyond economic and social functions to provide a basic health and nutritional role through the mart canteen:

> *They [older farmers] might go to two marts in the week and that would be the meals for the week, the rest of the time they are eating bread.*
>
> *(Sorcha)*

Sorcha also pointed to the isolation arising from changes to religious services during this period. This was a common theme in interviews with particular attention given to the impact of COVID-19 restrictions on rituals of death and mourning in rural areas. There was a pronounced theme of community isolation in descriptions of bereavement and the disruptions to the performance of communal rituals associated with death, including the wake (visiting the house of the bereaved prior to the funeral) and accompanying the funeral cortege to the church, the religious service, which were limited to 15 persons,1 and grieving, that is, supporting the family of the bereaved in the weeks and months afterwards. Conor notes that:

> *It's sad too if someone dies [and] you can't go to the funeral. That is very, very tough. It's so lonesome to go past a house and there's nobody there. We were so used to big crowds [at funerals], maybe it was overdone, but for them families it's very tough like you know. For some family that lost a loved one it's. . . okay you*

can send a message online now and all that, but that's the only thing you can do when someone dies. It's very tough.

(Conor)

The coming together of people to participate in the funeral cortege was also the cause of anxiety and guilt for Conor, who felt a tension between the desire to show respect for the dead in the community and the responsibility not to spread the virus:

There was a tragedy [in the local community] where someone was killed, and you went along to the church and stood around because I knew him so well. But then you feel that you are doing wrong because you can be too close to people... you feel like you're not comfortable, you feel like if you were too close to somebody and if something happened after. . . there's a fear on you, you know.

(Conor)

There was also a sense of a more general unravelling of social connections and the depth of connectedness in rural communities. This perspective was reflected in comments by Brian:

There are things definitely that if, things that would have happened in the local area and you might not hear it for months. Whereas in normal times, you would have been at a meeting, and it would be discussed, or you'd hear it mentioned; or someone might be sick or things that the rural people are interested in and you wouldn't hear those.

***Interviewer**: Yeah, yeah it's a bit less connected, yeah?*

***Brian:** Bit less connection, Yeah exactly, yeah, yeah. Things that would have been talked about face to face, but 'people wouldn't just feel it appropriate to pick up the phone and ring about it.*

This exchange illustrates the centrality of personal interaction in the communication of local or community news, which helps maintains social connections. It is evident that the COVID-19 pandemic and associated public health restrictions had an atomising effect and contributed to a sense of dislocation. It is interesting to note that technology, in this instance a phone, was

insufficient to maintain connectedness and cohesiveness. Brian stressed that the absence of incidental connections like this was not a '*life or death*' issue but, in spite of significant improvements, technology cannot replicate or reproduce the experience of sharing local news through in-person contact. This perspective was also reflected in the interview with Conor who pointed out that conversations with neighbours were less frequent and more functional when in-person contact was not possible:

> *You'd speak to them on the phone an odd time like you don't really unless you have some business with them or something like that. It's not the same as it was. I suppose when you have family and that it is not as bad but for some that hasn't it would be a very lonely time. Phones are all right but for some people who are hard of hearing I say it would be a lonely time for them.*
>
> *(Conor)*

The perceived weakening of social bonds during the pandemic was also articulated by James who described the impact he sees on engagement with his local religious community and views this as a negative development. He speaks about the withdrawal from religious practice evident in practitioners not collecting envelopes used to donate money to the parish. This also reflects a weakening in social norms, practices and communal ties:

> *Where you go in there to [the local chapel], the amount of envelopes that wasn't lifted, half of them wasn't lifted. It's going to affect the church when this is over and then you have an element of people who didn't care . . . you need the church; you need a priest.*
>
> *(James)*

The reference to 'envelopes' relates to the donation of monies or 'dues' to the church upkeep and the priest. It would be expected that church goers would make a regular donation. That 'half' the envelopes were not 'lifted', that is, returned with money, speaks of how not only was there a physical rupture between the congregation and the church but also in the relationship and sense of obligation between the congregation and the priests in the parish.

4.4.2 Durability and resilience: Continuity in farmers' support networks

There were also unique features of farming practices that endured and were seen as positively contributing to wellbeing. Whilst the onset of the pandemic resulted in the introduction of a range of restrictions on mobility, face-to-face interaction and, associated with this, requirements for many workers to work from home, essential workers, including farmers, were required to continue working as usual. For some essential workers, this translated into higher levels of stress and deterioration in mental health (Bond et al., 2021). For farmers, however, the interviews highlight a heightened sense of the value in nature and working outdoors, an appreciation for the space and freedom that farmers enjoyed during the pandemic, the benefits of a steady routine and the relative financial security that many other workers lacked. In addition to meeting or contributing to their personal and farm enterprise financial needs, the continuity in working routines was considered to be an important aspect of life that protected wellbeing during the period covered by this research. The farmers interviewed expressed a sense of security relative to people who worked with someone else, or where they did work with people, the design of farm buildings ensured high levels of ventilation2 and were viewed as contributing to a safer working environment. Working with animals and in an outdoor environment were important to the farmers interviewed, and this feature of their occupational environment was brought acutely into focus during the pandemic. Whilst working alone and strict regulations may be seen as generally negative characteristics of farming (Rose et al., 2022), these may have equipped farmers to cope with or endure the COVID-19 pandemic.

Brian described changes to his farm enterprise, which he operates alongside a nephew, to adapt to COVID-19 and take precautions against contracting the virus. In spite of the changes, he emphasised the continuity in working life through maintenance of pre-COVID routines. In general, Brian felt that the pandemic seemed to have less of an impact on his occupation, compared to other workers. Public health restrictions were not considered disruptive and resulted in only slight changes in terms of health and safety practices. When asked if working outside was a side of farming that he enjoyed he replied:

> *Ah yeah, like I didn't find any difference in the COVID.*
>
> *(Brian)*

This was also the case for Conor. While he operates an intensive dairy enterprise, he felt that during the COVID-19 pandemic, adjusting to the public health requirements and restrictions did not require '*really major changes*'. One of his sons continued to help on the farm, while the other son, living away from home, stopped returning on the weekends. Working alongside his son who lived in the same household meant social distancing at work was not necessary. He describes his interactions with delivery and creamery workers as being straightforward and easily compatible with social distancing requirements. This he contrasted with other workers who were at a greater risk of being exposed to COVID-19:

> *Yeah, you are out in the fresh air. That is a benefit. Compared to someone who is working in factory like there is a lot higher risk.*
>
> *(Conor)*

The continuation of daily and seasonal routines was seen as particularly important to the interviewees. At one level, this was linked with having something to occupy one's time with, that is, James spoke about the importance of a working routine for him:

> *Do you know, if I hadn't something to do, it would drive me mental because from when I was knee high, I was working. I need the wee bit of work, that's the way I am guided.*
>
> *(James)*

Sorcha made the same point but in relation to recovering from COVID-19:

> *I find it hard enough to isolate as I was. But I put on my wellies every day and I'm out to the yard every day and out the field every day and I wanted to go for a walk, I went around the land. Do you know? I passed time that way.*
>
> *(Sorcha)*

She also reflected on the experiences of others as a way of understanding the benefits of living in a rural area and being a farmer:

[I] couldn't imagine somebody with COVID-19 sitting in a flat five stories up in a different country. Maybe having no family network around them and maybe being told. 'Oh, you have COVID you have to stay in your room for 2 weeks like'.

(Sorcha)

For Brian also, in spite of the large number of COVID-19 cases in the locality, he felt himself to be safe, relative to many other people in the community and his occupation as a farmer was important in contributing to this greater sense of security:

It was probably one of the biggest benefits of the activity that goes on in farming is that . . . 95% of the time, you're a lone worker and look it the other 5%; maybe people come into the yard, or you have contractors working or that. But definitely, it would be a chance in 10,000 that you'd be in a confined area working with them. During the summer, there maybe, there was certain situations for you to be in close proximity to people, but they were very, very seldom... you're in open air yards and sheds, which would be designed for ventilation anyway. Like you know, ventilation for the cattle. So basically, you'd feel quite safe in those situations. There was no situation where I ever thought that you could be in danger here, and I'm quite happy with that.

(Brian)

Brian pointed out that he knew of no farmers who had contracted COVID-19 because of their occupation. For Brian, farming offered a lifestyle that was positive and less stressful, compared to other occupations. The proximity of living and working in the same location was also viewed as a positive aspect of family farming:

I never had to do it, but I can imagine the daily commute and added stress to their [i.e., people who have to commute to work] day like, as well you know. So, look [there are] plenty of stresses in farming, but bumper-to-bumper traffic isn't one of them.

(Brian)

The interviewees highlighted what they saw as the positives of isolation and working alone/being your own boss. Farmers describing the precautions they took when working with others stressed the extent of control over how these were organised in terms of with whom, when and where they worked with others. It may be that this greater authority over their own working space combined with less frequent contact with others lessened anxieties related to contracting COVID-19. Drawing on contributions from Brian, we see a nuanced conceptualisation of autonomy that is balanced between extensive EU and national regulations and legislation governing farming practices and food production and his autonomy as a farmer:

> *To certain extent you're your own boss. There are an awful lot of government rules and regulations or EU mostly rules and regulations that have to be adhered to, but [farming] has the benefit of being your own boss, you know, yeah.*
>
> *(Brian)*

This suggests, and it requires further research, that the 'burden' of regulation is counterbalanced by a range of personal benefits that are associated with enduring patterns of working life that are critical to the wellbeing of farmers. Of course, we also have to keep in mind that prices for agricultural commodities were strong for much of this period in Ireland resulting in farmers' experiencing a higher level of financial security relative to some other sectors of the economy.

Whilst two of the interviewees have school-going children, only Sorcha spoke about the additional stresses of home schooling, particularly the challenges of managing access to unreliable and low-speed broadband for each of her children, whilst also continuing to work from home. The loss of social opportunities for her children was replaced with new, on-farm activities. Lambs were bought as pets and feeding them became part of the daily routine for her children in the absence of the normal classroom setting. For Sorcha, having a farm was a positive resource at a time when it was difficult to occupy her children:

> *It was definitely great to have it, it was definitely a blessing.*
>
> *(Sorcha)*

Asked what had helped her cope with the COVID-19 crisis over the past year, and Sorcha felt again that living on a farm was very important. The good weather also allowed her and her family

to enjoy time outdoors. Consistent with others interviewed, she felt that her lifestyle and routine as a farmer were less affected than others during the pandemic:

> *I didn't find a huge change in it but, I'd say for an awful lot of [non-farm] people, it was massive change.*
>
> *(Sorcha)*

4.4.3 Adaptation and new ways of being

Despite that sense of continuity and resilience among farmers interviewed, COVID-19 represented a significant rupture in pre-existing social and occupational practices and relations. There was an evident breakdown in the points of connection such as in-person marts (important materially and socially) and social and religious gatherings, which meant new connections had to be formed to adapt to the social and economic limitations arising from public health restrictions. These were evident in the ways that working with others was re-organised and the adoption of technologies that helped create new social and economic connections. The precautions taken by James on farm to deal with the COVID-19 pandemic are reflective of a number of adaptations. He continued to work alongside his nephew whilst maintaining a physical distance from him. In his interview, he describes in detail how they milk the cows, scrape the slats, calf cows and assist the vet with injecting animals while taking precautions against the virus. Much of this involved separating the responsibilities for jobs, staggering work so that they are not close to each other or, when it was essential to work in proximity, wearing gloves and a mask. This he described as 'simple practice, keep your distance, wash your hands'. Asked if he has been impacted by the closure of marts, he spoke about how his nephew sells bull calves, to a dealer who exports them, and this is done on the farm itself. He also outlined how his nephew took on responsibility for organising and managing the sale of calves online. This was also a practice noted by Brian who also spoke about the move to online marts being positive for farmers' working lives and for their farm enterprise. Buying and selling cattle remotely allowed them greater convenience and comfort. It was also seen to bring with it financial benefits. Brian quickly adapted to the technological developments to allow remote sales and was impressed by the capacity for stakeholders in agriculture to adapt rapidly to COVID-19 and the restrictions:

> *I picked up the 'Mart Eye' there [and] it was great. I'd say they upped [the marts] their game. Maybe inside of the 14 days they went from something as a concept*

to been run of the mill at that stage, you know all over Ireland, so it was great I was thinking it was great to see some businesses stepping up to the bar.

(Brian)

He sees online marts as being very convenient for many farmers and allowing for a greater flexibility. He also sees the benefits following the lifting of restrictions, particularly for those with off farm jobs:

A lot of people are part time farmers and it suited them great. They [can] during their tea break or lunch break, be there [at the mart]. They can actually watch the trades online and they are delighted with it they can buy their stock and [organise for someone to collect them]...

(Brian)

Brian was heavily involved in farmer politics and had previously used meetings as an opportunity to learn about developments in farming but does not see the move online as being a negative:

You're nearly picking up as much information on these media platforms, like Agri Land or Farmers Journal Online. Or that type of thing as you would in any these meetings, so yeah, the knowledge is basically being disseminated now online as opposed to [having] to be there in the human form, right?

(Brian)

Technology was also used by farmers to connect socially during the pandemic, this took a number of forms. James has been using his smartphone more often since the onset of the pandemic and uses social media but primarily to send direct messages to relations who live abroad. He spoke about accessing online religious services masses from the local parish, every afternoon that he was not engaged in farm work, and sees this an important resource:

I watch it [mass online] anytime I'm here. I see funerals here. It's a god send, I'm delighted now.

(James)

4.5 DISCUSSION AND CONCLUSION

The purpose of this research was to undertake an exploratory investigation into the impact of the COVID-19 pandemic on farmers in Ireland, how they adapted and to consider how these developments affected their wellbeing. Prominent also was their experience not just as farmers but also as members of their broader rural community. A sense of isolation and loneliness during the COVID-19 pandemic has been linked with poorer wellbeing while the presence of social support has been linked to less frequent symptoms of anxiety, depression and distress (Ni et al., 2020; Serralta et al., 2020; White & Van Der Boor, 2020). The data gathered highlight that, amongst the interviewees, isolation and loneliness were not significant issues for them personally and that there were many positive aspects to farming that supported their wellbeing. They did, however, express concern for others in their communities, particularly older, male farmers that are living on their own and pointed to a greater sense of isolation amongst the wider community of farmers that was exacerbated by public health restrictions. Associated with this, participants highlighted an unravelling of social bonds. This was viewed as a negative development and a longer-term threat to individual and community wellbeing.

The interviewees highlighted the critical role of familial and kinship bonds in sustaining farming communities during the pandemic and presented a range of examples of adaptive strategies that enabled them to continue working, including the alteration of how work was done on the farm and greater use of online services. This confirms the findings of Cush and Macken-Walsh (2016) who identified the important role of intergenerational collaboration in Irish farming. In addition to new divisions of labour, and similar to most other economic sectors and groups in society, technology was at the heart of some adaptive practices applied by the interviewees during this period. These enabled them to continue both social and professional relations following the closure of key places, that is, marts and churches. This included the use of social media apps, to maintain contact via mobile phone with friends and neighbours, Zoom to observe religious services and participate in meetings, and apps such as MartEye to continue operating their enterprise through the pandemic. The need for rapid uptake of communication technology presented challenges for older farmers with less experience in using it; previously, this was overcome with the assistance of informal networks of support available to them. The social structure of farming in Ireland, which commonly consists of multigenerational family farms, allowed a younger generation involved in the farm enterprise to assist and to demonstrate the

value of their knowledge of communication technologies. This raises interesting questions regarding the extent to which intergeneration collaboration has shifted perspectives within families regarding what constitute useful or valuable skills and associated with this, the implications for generational renewal.

The adoption of communication technologies to maintain or sustain economic and social activities were viewed as positively supporting wellbeing. These findings are consistent with Canale et al. (2022) who identified online communication during the lockdown as positive for wellbeing through a 'reconstruction and reorganization' (p. 736) of shared values, which inspired altruistic and prosocial reactions. The interviewees did, however, comment that communication using technology lacked depth, was more functional or transactional and, in general, was more tenuous than in person. While they made use of these resources, they also noted a reduction in the quality of social relationships outside of the immediate family. This is an interesting point that requires further research to draw out the potential implications for social isolation within rural and farming communities resulting from the ongoing digital transition of economic and social activities.

We found COVID-19 in Ireland to not be a calamitous event for the farmers interviewed. The impact on existing socio-ecological networks was limited, as the resources within those networks allowed for rapid adaptation to changing situations whilst also supporting wellbeing. A key aspect of this conclusion was the reflective nature of the responses of the interviewees who compared their personal situation to others in their community or in other places. This is seen as critical to engendering a perspective that highlighted the many positives of farming and rural life that get lost in comparisons that focus on rural needs or deprivations. For the farmers interviewed, positive features of the occupation including working in green space, interaction with animals, a relative autonomy and degree of independence in decision-making were accentuated during the COVID-19 pandemic. These findings are reflective of the literature on green space and its relation- ship with positive health (Hunter et al., 2019). Our findings also support research that has found interaction with animals during the COVID-19 pandemic to be positive for wellbeing and limit loneliness (Ratschen et al., 2020; Shoesmith et al., 2021). Working alone was also reframed as a positive feature of farming in the view of many, allowing for comparatively fewer changes to work practices and a greater sense of personal security. Ongoing research by the authors of this article seeks to establish if levels of loneliness and isolation

amongst farmers, compared to non-farmers, changed over the course of the pandemic and whether they have returned to their original levels since public health restrictions were lifted. It would be useful to understand if similar experiences have been recorded amongst farm populations internationally with a view to identifying means of reducing loneliness and maintaining wellbeing of farmers.

Whilst the interviewees highlighted many positives resulting from the pandemic, the data gathered point towards deeper tectonic shifts in the community life of rural Ireland. Responses to the pandemic represent something of a contradiction; on the one hand, there were greater levels of volunteering, but on the other, it amplified the weakening of the community and local spheres through greater penetration of virtual and remote services. This contradiction is evident in contributions above that highlight the benefits of apps such as Mart Eye whilst also noting the implications for vulnerable farmers of the closure of marts to in-person sales and gatherings. While measures taken to adapt to the necessity of being physically distanced during the pan- demic were temporary in nature, the remaking of spatial networks and the associated breakdown in traditional spaces of commerce and social life may be a precursor to the life of rural Irish com- munities to come. Key sites of social life and commerce such as marts and religious services are being remade. One farmer interviewed spoke of the declining community life that he has been experiencing over the years, speaking of neighbours who work long hours and commute long distances daily. In this respect, the COVID-19 pandemic may have accelerated or 'expedited' processes already in motion.

The durability of pre-existing farming networks is a key finding of this study. The advent of the COVID-19 pandemic in Ireland resulted in a wave of panic buying of key items, including food (Wallace, 2020). While this abated with time and there was no serious disruptions to food chains, the COVID-19 pandemic focused minds on the fragile nature of global supply chains that were previously taken for granted. Farmers were among those occupations in Ireland classed as essential during the pandemic, underlining the indispensable nature of this work, a theme that arose frequently in interviews. It may be that the critical role of farming during the COVID-19 pandemic temporarily repositioned farming with respect to the rest of society. This contrasts with previous research that found some farmers felt that their occupation, with greater workload and lower pay, is held in less esteem to other occupations (Ní Laoire, 2005). Research is required amongst consumers and citizens to develop a much deeper understanding of how

farmers and farming are perceived following the pandemic. This information is critically important to agriculture and food policy stakeholders as measures are designed and implemented to reduce the climate and ecological impacts of farming whilst simultaneously maintaining the social benefits.

5. THERAPEUTIC LANDSCAPES OF FARMING IN IRELAND

5.1 ABSTRACT

The role of place in supporting wellbeing is an established field of study incorporating research on green/ blue space on health alongside work on therapeutic landscapes. Within that research, the role of cultural and social contexts, alongside specific practices and therapeutic taskscapes, have added an occupational dimension to the shaping of health and wellbeing. Within the literature, place had largely been considered in recreational/leisure terms or as a consciously health-specific intervention. Farmers' health and wellbeing, the focus of this study, has also traditionally, been studied through psychology and occupational health, often focused on the dangers and psychological challenges of farming life. Yet, little work has been undertaken to establish the complex yet positive role that farming (as a practice) and place (as everyday setting/context) play in promoting farmers' everyday health and wellbeing. This Irish-based study identifies material, social and emotional components of a therapeutic landscape that farmers utilise as a psychological resource and support to address the inherent dangers and stresses of farming life. As such this innovative study uncovers new understandings of how health and place emerge within everyday occupational practice, but also how specific farmers' lives and farming spaces deepen understandings of health and wellbeing, especially in rural areas.

Keywords:

Farmers, Wellbeing, Health, Mental Health, Place, Therapeutic landscapes.

5.2 INTRODUCTION

This qualitative study is an investigation of material, social and emotional components of therapeutic landscapes that shape farmers' health and wellbeing in Ireland. It draws from 28 semi-structured interviews with farmers and stakeholders. There is a large body of research concerning occupational health in agriculture and a subset of this literature investigates stress and mental disorders affecting farmers (Booth and Lloyd, 1999). There is also an established literature on the role of nature and greenspace more generally in promoting wellbeing, focused more on everyday leisure (Gascon et al., 2015). Finally, the development of the therapeutic landscapes idea, traditionally focused on special places, has become more fully focused on

everyday spaces, places and practices (Bell et al., 2018). This study seeks to combine literature in the farming health field with concepts drawn from the therapeutic landscapes to consider more fully what resources farmers may draw on to cope with stresses inherent in their work, but which also give it meaning. In particular, the paper makes a case for farming as an everyday occupational health practice that also draws from work on therapeutic taskscapes, where the work/task has inherent health promotion dimensions (Dunkley, 2009). In that focus on stresses associated with work, we work also with the following key definitions. Mental disorders have been defined as 'clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour... associated with distress or impairment in important areas of functioning.' (WHO, 2022). Stress has been defined as a state of 'worry or mental tension caused by a difficult situation' (WHO, 2023). Wellbeing in contrast to mental health is more positively defined. The World Health Organization defines wellbeing as a resource for daily life, determined by social, economic and environmental conditions (*WHO*, 2021, 10). The resources in farming life identified through this research are organized under a framework that also considers a new relational strand within therapeutic landscapes writing (Cummins et al., 2007; Mossabir et al., 2021), which recognises different material, social and emotional dimensions of health and wellbeing as they emerge through practice. Using this broad framework, we can understand farmers as situated in a mobile set of human and more-than-human connections and relations, that can, at different times, act as a resource but also a strain on wellbeing. The specific aim of this paper is to reconsider farm spaces and practices as a different type of therapeutic landscape, more fully drawn from the everyday occupation/task of farming and uncovering within that key findings that identify different material, social and emotional components that promoted health and wellbeing, as they pertain in an Irish setting, but with wider applicability.

5.2.1 Farm spaces and practices: danger and distress

An established body of literature has been developed, particularly in the field of psychology and occupational health and safety, on the health and wellbeing of farmers, however much of that literature focuses on risk and poor health outcomes associated with farm spaces and practices (Daghagh Yazd et al., 2019). The rate of farm fatalities features prominently, though is difficult to determine, with family and workers who do not operate farms often suffering farm accidents (Meredith et al, 2023). The rate of farm fatalities has been increasing in Ireland (Casey et al., 2014). In 2022, 12 of 26 workplace fatalities in the Republic of Ireland were farm fatalities

(McNamara, 2023). Farmers globally are also subject to a specific set of psychological stressors (Gregoire et al., 2002). Factors affecting farmers' mental health have been found to include weather, injury and animal disease (Daghagh Yazd et al., 2019). The factors in farming that shape wellbeing are not limited to these material contexts and their inherent contingencies and dangers, but include the wider social, cultural and economic contexts in which farming operates. Gender has also been a factor in farmers' mental health and farming women tend to have more stress than men (Booth and Lloyd, 1999). Considering the role of these factors in farmers' wellbeing, it should also be noted that not all studies have found farmers to have worse mental health than the general population. There is evidence that despite farming being a dangerous and stressful occupation, farmers also demonstrate a psychological resilience that is less often recognised (Berry et al., 2011; Hagan et al., 2019; Judd et al., 2006).

5.2.2 Place and wellbeing

As Pearlin (1999) notes, our understanding of stress must extend beyond sources (potential stressors) and outcomes (mental and physical health) to also include mediators (supports and coping skills). In seeking to understand what factors may support farmers' wellbeing we draw from the established body of literature on wellbeing and place. The role of place in shaping health outcomes has a well-established history within medical geography and more recently, geographies of health and wellbeing (Andrews et al., 2014). A 'turn' from medical geography to health geography was advanced by Kearns (1993), advocating a shift from examining the distribution of disease, illness and health care services to considering social and cultural factors shaping health and wellbeing more broadly. This can include how healthy spaces and places shaped human feeling, sense of purpose and place essence (Andrews and Shaw, 2010). It also posits a fuller understanding on how everyday life and health, in all its complex forms, is produced in and through different types of places and spaces (Brown et al., 2017). Critiques of wellbeing and its positioning in health research has focused on its individual nature as well as endogenous and embodied features, rather than recognising the wider social infrastructures that shape people's lives (Andrews and Duff, 2020). Nonetheless, the concept of wellbeing and

its focus on positive health and salutogenesis, has an enduring value in addressing more pathogenic focus health found in the medical model (Atkinson, 2021).

5.2.3 Therapeutic landscapes and taskscapes

A central conceptual approach, developed within geographies of health and wellbeing, is that of therapeutic landscapes (Bell et al., 2018). The concept of therapeutic landscapes relates to the potential for particular spaces to promote physical and mental wellbeing. This includes for example the use of visitor farms as a therapeutic intervention to assist people with intellectual disabilities (Kaley et al., 2019).In its original formation, therapeutic landscapes were focused on unique places that encompassed the physical environment, its social dynamics and cultural context in shaping wellbeing (Gesler, 1992); subsequently incorporating additional spiritual and performative dimensions (Foley, 2010; Williams, 1999). The application of the therapeutic landscape concept has also found expression in a concern with the role of 'green' spaces in wellbeing, such as recreational engagements with forests and public parks. (Milligan and Bingley, 2007; Plane and Klodawsky, 2013). Most recently there has been an extension to blue and other natural spaces, through multi-disciplinary research in relation to how such spaces promote and sustain health and wellbeing (Foley et al, 2019; Foley, 2020a). Linked closely to Duff's (2014) work and developed from earlier therapeutic landscapes research by Bell et al. (2018) was a deepening interest in everyday health-enabling places, spaces and practices. It is necessary to consider the contingent and evolving nature of these factors that can be both potential sources of stress or of healing and support. This has been characterised by Conradson (2005) as a person's 'imbrication' within a setting which often has a relational outcome, either positive or negative, depending on a range of personal, place and wider structural conditions.

While it is the case that the original therapeutic landscapes framework emerged to study the links between health and place where a conscious intent to explore and experience wellbeing was a central tenet, we would argue that in its shift to the everyday and to occupational practice, that intentionality is still there, albeit more implicit than explicit. In addition, the idea of the therapeutic taskscape, originally framed by Dunkley (2009) incorporates work on workers on fruit farms, and how the farming tasks produce specific meanings, identities emergent from the work or task, also seen by Ingold (1993, 158) 'any practical operation, carried out by a skilled agent in an environment, as part of his or her normal business of life.' In addition, Mossabir et al. (2021) propose a fuller use of the therapeutic landscape to consider its applicability to

everyday communities and the complexity of everyday experience, in their case linked to ageing, but arguably applicable in working spaces too. A separate linked body of work has investigated the therapeutic potential of care farms, used as a healthcare intervention to assist with populations experiencing addiction, disabilities, embodied differences or poor mental health (Gorman, 2021). This has included work on the sensory experience of the farm environment (Gorman, 2017) but has also extended to seeing the farm as a place of 'relatedness' and socialization (Kaley et al., 2019). This work, however, examines the farm as a novel experience for those seeking a therapeutic intervention. While Kaley et al. (2019) found that the experience of care farms can extend beyond a temporary refuge to a place where new resources can be mobilized for a positive wellbeing, there has been little research in this discipline to consider how the farm landscape may be experienced by those work it daily. As Kaley et al. (2019) note therapeutic spaces are relational, contingent on people's interactions with features of their environment and we would argue there is an additional emotional geographical connection when its is one's livelihood as well. Farms relation to their environment can be understood to be distinct from the care farm experience. The dependence on farming life can bring with it inherent stressors in the farm health literature but we would argue that the immersive and intentional acts involved in everyday farming, also provide farm environments with an intentionality associated with the therapeutic taskscape, incorporated in the purposeful activities that contribute to maintenance and flourishing (Bell, Hickman and Houghton, 2023).

5.2.4 Dimensions of farmers' wellbeing: Material, Social and Emotional

The concept of place has been characterised as integrating worlds that are often seen as unrelated, of nature, meaning and society (Cresswell, 2009; Stack, 1997). This understanding is echoed in the framework of Duff (2012) who analysed the experience of mental health recovery as relational events that incorporated material, social and emotional (affective) of a wider environment shaping human health. Affect, relating to mood, feeling and attitude has been deployed in relational Geographies to capture the emotional connection between people and place (Cummins et al., 2007; Thien, 2005). This framework is congruent with Philo and Parr (2020) who have advanced a framework of (i) physical (ii) social and (iii) symbolic properties of Scotland's rural landscape, employed in an effort to provide psychiatric care. Examining the wellbeing of farmers (as a therapeutic assemblage) allows for an opportunity to scale up the concept of therapeutic taskscapes, applying this to people who have a deep dependence on their occupational engagements and imbrications in the more than human setting around them.

The parallel literature on nature/greenspace and wellbeing has tended to consider that role in an urban context, where it has been suggested its positive impact may be more obvious (Wells and Evans, 2003). Farmers, due to their work, are immersed in green space and spend long periods working outdoors, generally in rural spaces. The identification of farmers' unique working environments as a potentially therapeutic taskscape, as opposed to as a therapeutic intervention for non-farmers, has receive little consideration by researchers, while evidence points to a connection with the elements and direct interaction with both the *land* and *animals* to be potentially protective of wellbeing (Mandrá et al., 2019). The challenges of caring for animals is a potential source of stress too, but can the responsibility to care for them promote active coping skills or 'behavioural activation'? This is understood as approaches and behaviours that lead to experiences of mastery and accomplishment. (Kanter et al., 2010). The social context of farming, including the challenges of isolation have also been highlighted (Scheaper-Hughes, 2001). Overlooked however, is how farmers draw on the material, social and emotional spaces in which they are imbricated to promote wellbeing, withing which a shared occupation intent provides insights into *togetherness*, and a shared *sense of place* as well as having a *gender*ed component. Other work from Ireland point to spaces such as holy wells and other spiritual elements (ring forts, ancient woodland, stones) as therapeutic settings with a reputation for healing and for an everyday therapeutic practice embedded in the Irish rural landscape (Foley, 2013). Such examples point to *relational spiritual* and emotional connections that landscape holds (Williams, 1999). How do farmers draw on these connections to cope with the external and unpredictable features of farming life that can present a challenge to wellbeing? In seeking to address some of these research deficits, this study investigates farmers' wellbeing in terms of occupational dimensions of therapeutic landscapes and taskscapes and how they describe these in material, social and emotional terms, using key terms identified in italics above.

5.2.5 Aims and Objectives

This study, therefore, considers anew the role of farmers occupations as a therapeutic resource in supporting wellbeing. Research on farmers' wellbeing has tended to focus on the adversities of farming life, yet the literature from geographies of health and wellbeing provides a rich body of work on the supportive therapeutic role of landscape, place and practice that has overlooked the experience of occupational groups such as farmers. This work aims to uncover how farmers' experience their farms as a therapeutic landscape and their work as a therapeutic taskscape? Does framing the farm as a therapeutic landscape help farmers deal with inherent stresses of

farming? Might taking such a positive occupational health positionality provide health care and policy makers with a deeper understanding of what farmers are actively doing in their everyday lives and work, to promote a positive wellbeing.

5.3 METHODS

This article draws on 28 qualitative semi-structured interviews that were conducted as part of a study of wellbeing amongst farmers in Ireland. The study was funded by Teagasc[1] under a funded Walsh Fellowship as part of their wider rural health research group. Data from a small number of the interviews have been analysed elsewhere, drawing from the experience of farmers in Ireland during the COVID-19 pandemic with a particular focus on isolation as a potential stressor for farmers. A snowball method was used to recruit participants for this study (O'Reilly et al., 2023).

In that initial paper, key themes informing the semi-structured interviews included the impacts of public health restrictions on farming and social life, the use of communication technology, the importance of work and exposure to green space, fears of illness/transition, social interactions, and community cohesion. Reflecting the significant changes that had taken place during data collection including the decline in COVID-19 intensive care admissions from 2021 to 2022 (n=1643 to n=390) and the ending of all COVID-19 restrictions in January 2022 key themes explored in interviews were changed to investigate farmers' health and wellbeing in Ireland more generally, with questions framed to subtle uncover the therapeutic dimensions of farm spaces, settings and the work of farming (Horgan-Jones et al., 2022; www.hpsc.ie, 2023). Subsequent interviews have included a greater gender balance, and a number of interviews have taken place with stakeholders and those interfacing with farmers in a rural community context including medical professionals and religious leaders.

While the initial set of interviews explored by O'Reilly et al. (2023) were concentrated in the border region of Ireland, subsequent interviews have included farmers from the east, south and

[1] Teagasc – the Agriculture and Food Development Authority – is the Irish national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities.

west of Ireland. The border and western regions of Ireland are economically peripheral and farm systems of beef cattle and steep predominate, with smaller intensive dairy farmers present in the border counties. More intensive large scale dairy farming predominates in the south and east of Ireland alongside a lesser number of tillage farms (Dillon et al., 2022). Initially, data analysis begins with the transcription of interviews, followed by coding, where significant themes and patterns were identified within the data. Interviews were transcribed and were coded by the lead author using NVivo 20 software. Arising from this process key themes emerged in interviews concerning material, social and emotional factors in farmers' wellbeing, especially around sub-themes such as the material setting (therapeutic connections to land and animals), the social world (togetherness and gender) and the emotional connections to place (rootedness and spirituality). This process was overseen by the co-authors and was informed by an iterative process of discussion and reference to the literature in the research area.

Ethical approval was granted by Maynooth University Social Sciences Research Ethics Sub-committee. The research participants were assigned a random name as a means of foregrounding their individuality as opposed to the practice of numbering the respondents. Due to the focus of the interview on stress and wellbeing, the interviewer kept a list of health and wellbeing supports in digital and paper copy on hand during interviews to be offered to any participant who expressed distress during or after the interview or who requested information on services available. Symptoms were based on guidelines from Irelands Health Service Executive. Signs indicating that a participant might have been distressed included speaking about trouble sleeping, excessive worries, feelings of hopelessness, trouble concentrating or loss of interest or motivation for things they normally enjoy (Mental Health–Helping Someone Else, 2022). Contact details for support services was also available for any participant who requested a copy. Participants were not offered any financial remuneration or material incentive for their role in the study. All interviews were conducted by the lead author of this article.

Of the farmers interviewed 14 male and 7 female, varied in age ranges 20-30 (n=1) 30-40 (n=1) 40-50 (n=4) 50-60 (n=7), 8 dairy, 6 sheep and beef, 5 beef, 1 dairy and tillage. 16 from Border-West and 5 from the South-East. Additional interviews were conducted with stakeholders rooted in a rural context who interface regularly with farmers, these were 4 men and 3 women including a public health nurse, clinical contact tracer, bar owner and 3 religious' leaders (Anglican, Catholic and Presbyterian). Interviews ran from 16/04/2021 until 23/02/2023. 4 interviews took

place remotely and 24 in person. The decision to include non-farmers in the sample frame is based on research previously conducted on farmers' networks of support. Younker and Radunovich (2021) found both formal and non-formal networks key psychological supports for farmers. These can range from professional and volunteering organizations to family, auction marts, friends and professional stakeholders, these may not name mental health but nonetheless support it (Shortland et al., 2022). The inclusion of religious leaders reflects the importance of religious life to many farmers in Ireland as a predominantly rural and older cohort (Ganiel, 2021). As frequent social or professional contacts for farmers these non-farming stakeholders position in rural life means they have an important insight into farmers' wellbeing.

5.4 MATERIAL DIMENSIONS OF FARMING AND FARMERS' WELLBEING

Mobile environmental factors in farming have been considered as challenging wellbeing in the context of farm stress but have also been identified as positive in the green and bluespace literature (Daghagh Yazd et al., 2019; Gascon et al., 2015). The material tasks involved in farm work, are both challenging and rewarding but, when considered in terms of active practice, can promote wellbeing and positive mental health (Conradson, 2005). In considering the potential therapeutic role that the task of farming provides, at the heart of that are everyday interactions and encounters with both animals and the land and these were identified in interviews as two significant representative factors in understanding the material dimensions of farming and farmers' wellbeing.

5.4.1 The animals

A dependence on working with animals can be a source of danger and stress (Daghagh Yazd et al., 2019). Farm animals are prone to contagious diseases, and this requires constant vigilance on the part of farmers who can suffer great financial burden if livestock must be treated or culled to prevent contagion:

> *Yes, as a farmer you are constantly active and always busy, it can certainly be stressful if something goes wrong on the farm or if the animals were sick, injured or contracting any diseases such as TB... If things ever go wrong for the animals, it can be very stressful.*

(Conor)

Conor spoke about how stress on farms increased the danger of animals, making farmers more at risk of suffering farm accidents. This connects with dangers spoken about by clinical contact tracer Fiona, who spoke to farmers suffering with COVID-19 in a state of distress as they had a responsibility to care for their animals, irrespective of illness. The material role animals play in farmers' wellbeing is contingent and relational, interacting with other human factors. This is similar to a farmers' understanding of the role of adverse weather. While the crisp winter mornings could be valued by farmers, the need to keep animals in sheds heightened their vigilance to diseases, could lead to pipes freezing and financial pressures. Beef and sheep farmers felt better able to 'work with the seasons' while dairy farmers were burdened with a greater routine workload and capital-intensive business models. The constant engagement with animals that was frequently cited as being therapeutic also brought an inherent danger of injury and attack and a psychological burden when there was a physical inability to care for them and little help on the farm.

In another context the responsibility to care for animals that keeps a farmer as Conor felt 'constantly active and always busy' can be a psychological resource inherent in farming life. Farmer links with their livestock form a resilient practice and routine, one outcome of this taskscape as representative of behavioural activation. The relationship with animals, because it is a constant feature of life for farmers, was seen to promote behavioural activation. Keith (Presbyterian minister) noted that older farmers in his congregation tended to maintain their routine, working with their land and animals and seen this in a positive contrast to a 'pyjama paralysis,' where physical activities fall away, and people rapidly adopt a sedentary lifestyle in old age. For Sinéad, the responsibility of caring for animals, while challenging, kept her parents physically active as well as engaged socially. This was seen as important for their wellbeing.

> *If you sell all the cattle, what is there? There's nothing. That leads to further isolation whereas at least cattle there its nearly a form of company in itself. You have to get up and look after them and you do have to go out in the world, to the co-op (farm supply store) or go wherever.*
>
> *(Sinéad)*

The everyday exposure to nature and animals was a positive in the eyes of farmers. The connection to nature was valued by farmers as a positive sensory experience, the sights, sounds and sensations of farm work. It was also seen to be linked to values of independence and autonomy. As noted by Bell et al (2022), 'sensescapes' are part of place-based wellbeing, including everyday interactions and immersive tasks. This concept points to the tangible sensory experience of farms. For Rosa who works a job of farm in her local village, the sound of farm animals is a comforting and therapeutic part of her day:

> *To take a walk down the fields, you can hear the birds, you can hear the animals, like I would be there in (local workplace in village) with the window open and there's lambs bleating in the background I just think 'awh I love to hear that!'*
>
> *(Rosa)*

The constant demands of attending to animals in need, which in some circumstances may be a source of stress, is also a process that deepens farmers' connections with nature that they feel to be therapeutic. The experience of nature connection is for them deeper than that enjoyed in a more transient way by non-farmers, it is remade and deepened daily in their labour on farm. For Sorcha, the springtime was important as animals can be released from sheds where they are kept over the wintertime. She feels great joy when it is time for her sheep and cattle to return to open pasture and see them bond with newborn calves and lambs. Periods of lambing and calving, which involve large workloads for farmers, were seen as very rewarding for farmers.

5.4.2 The land

The material nature of wellbeing in farming was integrated in place with a sense of farmers' own culture and senses of self. This was clear in Mairead's reflections on the therapeutic role of nature for farmers, stressed by her as attention to the beauty in her everyday environment. Nature connection, a prominent sub-theme in work on environment and wellbeing (Lovell, 2015; Richarson et al., 2020) was a component of her identity as a farmer, caring for the land:

> *We notice things, I notice now the grass, I can see the 40 shades of green.*
>
> *(Mairead)*

Jacinta was keen to point out her care for the environment in opposition to the view that farmers' exploit natural resources and do not care about nature (Kuehan, 2014). She felt a symbiotic

relationship between nature and farmers' wellbeing and spoke of the psychological benefit of nature connection. Asked if she felt that farmers felt a strong connection with nature, she stated that:

> *Yeah, but sure the farmer wouldn't be a farmer if they weren't connected with nature. Sure,* ***nature is farming****, people don't realize that.*
>
> *(Jacinta)*

The role of a nature connection as therapeutic for farmers was evident also in the turn towards nature as a positive psychological resource at a time of heighted stress . During the COVID-19 pandemic dairy farmer Una began to grow a variety of vegetables, berries and fruits on her farm and used the plastics containers used as animal meal packaging as pots for her plants. She felt that this was very therapeutic at a time of great psychological pressure as a farmer living alone. The dangers and stresses at this time deepened her material connection with nature. Engaging more with the greenspace around her. This was echoed by another farmer who spoke about how disturbing it was to be off farm during the period of lockdowns connected to the COVID-19 pandemic. The sight of deserted towns and roads signalled danger and a frightening new development while the experiences on farm were reassuring and represented continuity of life.

> *I go to the field a lot – roll the hay, bale wrapping and check on the animals every so often, etc. When you're outdoors, you can hear the birds singing, the grass is growing, and the hedges are getting green. When you go out for exercising Covid is gone out of your mind.*
>
> *(Mairtín)*

While the role of isolation as a stressor for farmers in Ireland have been examined previously (Scheper-Hughes,2001), concern has been expressed that the labour saving mechanization of farming in Ireland may increase time spent working alone, further increasing isolation as an occupational risk (Monk, 2000). The perspective of Mairtín in seeing the farm as a retreat from external pressures reflected features of isolation in the rural Irish context in that could be seen as a positive for farmers (see O'Reilly et al, 2023).

5.5 SOCIAL DIMENSIONS OF FARMING AND FARMERS' WELLBEING

While an associated paper identifies specific social disruptions associated with COVID-19 (O'Reilly et al., 2023) and in particular social spaces such as marts and funerals, this section identifies more conceptual aspects of socialisation, gathered here under togetherness and gender, to provide some representative examples of how the social world shaped farmer health and wellbeing within the study. As with any working community, and especially in the case of farming (often characterised as lonely and isolated), it is the shared practice and the social identity of the taskscape that brings that community together and provides a therapeutic value in terms of shared care and meaning, directly emergent from the 'common' nature of farming work, even if that varies from farm-to-farm.

5.5.1 Togetherness

Farming in Ireland, with its structure of relatively small farms operated as family enterprises and passed down patrilineally through generations, means that the farm environment plays a role as a connective social space through which people collaborate. This process shapes relationships both approximate (familial) and more distant (townland/parish), with the farm as the site where these relationships are forged in a process of composition. Asked about what positive psychological resources they felt they had; farmers interviewed often cited family as the key support and not just that close family bonds were a resource for dealing with farming stresses. Close family bonds were also built through the shared experience of farm work. Keith spoke about his perspective as an outsider in a rural community and noted that family bonds for farmers are particularly strong:

> *What I love about it here is that they are very interested in the things that they do and what you see is the kids are very interested as well. Especially father son relationships. Dad doesn't go off to work to do something that you are not interested in. Kids would be going around dressed like their dads, wearing jackets with tractors on them.*
>
> *(Keith)*

Jacinta spoke about harvesting barley as an important event in the life of her family and wider community. Here the experience of collaborating deepens social ties and bonds, reforged annually through this practice.

> *Yes, it's like togetherness. It's more fun with someone else helping you. We do hay, we have an old combine (harvester), like it's a 1963 like a real old one, a vintage one. We actually started sowing then a bit of barley, you know only 2 acres so the kids could get on the combine, and they would cut the barley and then all the neighbours would come in.*
>
> *(Jacinta)*

She describes the picnic in the open field enjoyed by the local community that connects neighbours and younger farmers with older generations through a shared experience of farm work. The fields here provide a critical taskscape for shared experiences with family and friends.

> *The storytelling, of past stories, even the people that might not pick up a bale but yet they come and sit down, and they have a chat and talk about when they did it, years ago. It passes on then from generation (to generation). So, my children hear the older ones (neighbours) just sit on the bale and yap and have a cup of tea and a sandwich, and I tell you, tea in a field is the nicest thing you ever have. It's only one day a year, but everyone looks forward to it.*
>
> *(Jacinta)*

The social component of the farming in Ireland evidently exists in relation to the organic features of the environment in harvest season at the high point of growth, the inorganic features of the machinery providing a vehicle to work together and share a common narrative and tradition as a farming community. Growing barley on such a small scale would have been of little economic value for this farm family. Guiding this practice instead was a social motivation. The farm is itself a unifying point for the family. This was a therapeutic practice for this family.

There's a lot of communication every night at the kitchen table. Everyone's around and we just yap about the day, what was the best thing about it, what did you enjoy the most. It's something everyone has in common.

(Jacinta)

The social features of farming related to wellbeing in diverse ways. Farmers felt that the opportunity to care for animals was a valuable experience for children and played an important social role. This was generally manifested in children caring for lambs, as cattle were seen to present a physical danger, however there was reference also to children caring for calves in the context of dairy farms where they are separated from the main herd at an early stage. Rosa and Jacinta felt that the experience of growing up on a farm and caring for animals cultivated a greater emotional intelligence. Jacinta felt that the experience of growing up on a livestock farm and collaborating in farm work provided sex education, inherent in an understanding of where calves and lambs come from. Mairéad felt that the experience of losing animals was also a valuable lesson for children in acceptance of death. Thomas (Anglican minister) spoke about the enthusiasm that is evident as spring comes for the teenagers in farm families, who were delighted with new opportunities to be on the land. The genuine enthusiasm for farm work shared by generations, forged through a lifetime's experience farm work was also evident speaking to one farmer in his 20s. A part-time farmer Brendan was keen to stress his commitment to the family farm.

Dad never asked me to go farming. It was like that. He never asked me to get up in the mornings. I was up in the morning, I'd text him 'everything's done, there were 2 more lambs. They were lambing up in the fields. (I would) bring them down to the shed sometimes if they were a bit small or frail.

(Brendan)

The everchanging nature of the social life in Irish farming, and its potential as a stressor as well as a psychological resource, was evident in interview with Christine. She outlined her concern for the future of relations within farm families as a result of the increasing value in land and the declining absolute number of farmers in Ireland with farms being consolidated. She felt that changing expectations in terms of income and work life balance for the younger generation in farm families meant that there was no obvious successor/ inheritor on many farms. There is a

corresponding decline in the taboo in selling land and a previous emphasis on keeping the 'name on the land' outline by Scheper-Hughes (2001) is attenuating. While farm incomes are modest and less likely to lead to sibling conflict and competition, farms values as assets are large and their potential for realization due to a shifting structure rural society created the growing potential for familial conflict. This points to the interconnected nature of economic, culture and social/kinship of wellbeing for farmer in Ireland. This points also to a directly spatial insight on where those effects might be felt, given farmers in Ireland's South have typically larger farm holdings and more intensive dairy enterprises.

5.5.2 Gender

The social component of farming takes particular shape in Ireland, given operating farms are frequently family enterprises. This particular context is important in the wellbeing of women farmers. This particularly 'relational' element of farming in Ireland is seen as positive for wellbeing, given particularly close family bonds, forged and reforged regularly through the routine of farm work. While generally seen as a positive for relationships, the farm taskscape was also seen to be a potential source of stress for families and for women specifically. While the close connection between family and farming life creates additional labour and social support, much of this labour falls on women farmers This represents a set of stressors that impact negatively on wellbeing for women farmers. Participants spoke of this pressure as present particularly in the context of 'part-time' farming or where women worked an off-farm job to supplement farm income. It was Christine's view that farm families' relationships 'might not be as good as people think' and spoke about the pressures for women in farm families who will work off farm, preform domestic labour and will also work on farm in busy periods. The unceasing nature of farm work and the responsibility of caring for animals adds a great burden on top of an already large workload in these contexts. While women interviewed value farming life, the workload of the farm created additional psychological pressures. This is also shaped by family farm ownership and farm inheritance often excluding women. Jacinta spoke about the important role that women play in the farm that is often not recognized. The burden of farm stresses, in a context of the family farm structure can often be particularly difficult for women, providing a more critical insight into social wellbeing.

> *Like farmers as I say, I always say 'my husband' but I am one (a farmer) and the women are not recognized enough, because we actually run the farm. The man*

does the work, well some of the work but like I milk, and I (operate the) combine, I feed the cows and do all the tractors and stuff like that and do the finance, you know there's a lot of jobs that are done in the background... like it's a unit, there's no one person.

(Christine)

5.6 EMOTIONAL DIMENSIONS OF FARMING AND FARMERS' WELLBEING

The importance of emotions as a wellbeing factor was evident in farmers speaking about their encounters with nature and the social bonds bound up with farming. Distinct from the immediate sensory experience of farm work, what has been described as the ' emotional and life course resonances' of place was evident in the interviews (Foley and Kistemann, 2015; Wood and Smith, 2004). Key spaces were imbued with emotional meaning and connection, from the land itself, to spaces key to rural life and identity alongside religious sites utilised for the construction of a sense of home and rootedness and through which the uncertainties of farming life were also contained.

5.6.1 Rootedness and sense of place

The rural environment carried a deep emotional resonance for many of the farmers interviewed. The connection to nature (mentioned previously as a material benefit) was also an important part of farmers' identity and sense of self. Jacinta was definite about the positives of working in greenspace and spoke about it as '*Having that space and freedom.'* Máiréad's deep emotional connection to her family farm is evident. She spoke of a prominent Irish river steeped in history and folklore that flows through her land. She spoke of the deep feeling of connection to place shared by her family:

The land is very important to them, like they have great respect for the land, they know the land, they care for the land, we have old walls on this farm, it was an old estate in its day, like a domain. So, the wall surrounding this farm is about 300 years old, and if there's any little stone (missing) its mended straight away. There's lovely old trees on the land.

(Máiréad)

Farmers' connection with land was an important part of identity and a sense of connection to generations pervious who likely worked the same land. Rosa spoke of initiatives in her area to save old fields names preserved orally in family folklore. Often in the Irish language, these names were markers of the emotive connection of individual's sense of belonging and how their own history was constructed. A sense of belonging bound up in rural space was evident in discussions of the rural pub and mart. Mairtín spoke of a sense of social anxiety re-entering these spaces after the isolation of the COVID-19 pandemic. He also spoke of the sense of pride and joy in bringing his grandson to the mart with him. A sense of continuity and enduring tradition were affirmed. Asked what role religion plays in the lives of farmers in his locality, Keith states:

> *It is a sort of connection to their roots I suppose. Graveyards are a massive thing here.*
>
> *(Keith)*

Sites of institutionalized religious practice, such as rural graveyards and churches, were important to several farmers interviewed, with the great efforts made by farmers in the locality to physically maintain these places was noted. One farmer who is not religious spoke of the importance of gatherings at graveyards annually for socializing and connecting with relatives, sharing food and stories. For Anglican and Presbyterian farmers, the harvest service is the key date in the religious calendar. An emotional connection to place is evident on this occasion, drawing some people who otherwise would not attend religious service. Keith noted that rural congregations were 'protective' over these services, insisting that they take place in their local church, refusing to allow them to be consolidated among disparate parishes into a larger service.

> *So again, you have that connection to the place, this is our church. We will have our harvest service. And they do a great job, I think it means a lot to them.*
>
> *(Keith)*

5.6.2 Contingency in farming and spiritual practices

The inherent relational uncertainty in farming, flowing from its material dependence on external climatic and biological processes, presents a challenge for farmers' wellbeing. Animals frequently die, adverse weather events challenge the intended course of farm work, while danger is ever present in farm work with its high rate of accidents and fatalities. While not all farmers interviewed are religious, for those who are there is an evident link between their religious

practice and the nature of their farming life. In response to the inherent uncertainties of farming, divergent and interrelated affective processes of acceptance, often framed in religious terms, and of folk or religious ritual practices, were used to cope. The relationship of farmers to life and death was spoken about by Theo as being spiritual in the sense of being close to 'the vital things of life.' Equanimity was seen to be implicit in this relationship to the natural world. Farmers who are religious tend to trust in this uncertainty as something that is connected to a higher power and fundamentally benevolent. For religious farmers, the joy of springtime, new life on the farm and its inherent beauty was spoken about in religious terms. The joy felt seeing the seasons turn was deeper than an aesthetic experience and seen in terms of creation and a deeper life force. Religious practices that were woven into the life of the farm were a manifestation of nature connection and the therapeutic role of nature in the life of farmers. Rosa felt that folk religious practices such as the cure were particularly important for farmers:

> *Yes, I suppose you are so close to nature with farming.*
>
> *(Rosa)*

Folk religious practices were linked to animals and practices of faith healing known as *the cure* were discussed by farmers, prayers and rituals performed are seen to help sick animals. This was a support used to address the inherent uncertainty in caring for animals.

> *It's a natural instinct to reach out to these people for cures and there's a great faith and trust in them.*
>
> *(Theo, Catholic priest)*

Rosa spoke about a neighbour in her locality who has a book with contact details for individuals believed to have the cure for ailments affecting people and often animals. She noted the central importance of a holy well in the locality for farmers and would bring holy water from it to bless her farm. Situated on farming land are multiple points of folk religious practice. Mass rocks, holy wells, holy trees and ringforts all arose in interviews. Foley (2011) identified holy wells as having both material and affective assemblage components. Their affective assemblage was used as a way of understanding the particular relationship between the person and place they represent, their emotional resonance and associated practices. Putting up a St. Bridget cross in the cattle shed and sprinkling holy water after an Easter vigil were traditions spoken about by farmers interviewed. Mairéad spoke about the religious practices that are integrated into the life of her

farm and connected to livestock and the natural world:

> *On the first of May, May eve we get the farm blessed we get all the farms blessed. If we have a sick animal, we would get the priest to bless it... We would have a crucifix in the yard, in the shed, we would have holy medals. We say a prayer every day, we say the St. Anthony prayer. That's the saint for animals.*
>
> *(Mairéad)*

For Anglican and Presbyterian farmers, the key points in the farming calendar are reflected in specific religious services. These included the harvest service in Autumn and the rogation service in Spring, which are seen as key services in the religious calendar. This is distinct from urban congregations where Christmas and Easter services play a greater role. Thomas spoke about marking rogation with a 'tractor service' held in a field where farmers gathered with their machinery and prayed together. The draw to this service for a section of farmers who may have no other public religious practice was manyfold. Being able to relate religious ideas to the work that they do every day described by Thomas as being 'surrounded by creation' is a factor alongside an element of what he described as 'superstition' this being that a higher power could intercede to help them in the course of their work. For Keith there is an evident connection between the vastitudes of farming life and their relationship to religious practice.

> *When we are comfortable and we feel in control of everything we tend to feel less spiritual, less religious.*
>
> *(Keith)*

The relationship between the uncertainties of farming life and spiritual and religious practices extends also to fears and anxieties that surround features of the rural landscape that have a significance in the folk tradition. Theo spoke of what he sees as 'superstitions' including a fear of cutting down certain trees, often blackthorn, or of cultivating land on megalithic ring forts. In rural Ireland, both are traditionally associated with supernatural beliefs, recognizing that wellbeing and good fortune are understood to be bound up with a farmers' practices on the land.

Obviously if you had a ring fort on your land as well to interfere with a ring fort even in this day would be considered a very unlucky thing to do. So, I think they (farmers) are stewards in many ways not just of Christian traditions but of pre-Christian traditions as well.

(Theo)

5.7 DISSCUSSION AND FINDINGS

This study has identified the role of the farm environment and material, social and emotional components of farm work as implicitly therapeutic in the eyes of farmers while simultaneously presenting stressors and challenges to wellbeing. Farmers consciously draw on resources inherent in the farming environment in support of their wellbeing and this marks it out in terms of a specific study of occupational health, though not in a commonly understood form. This speaks to the tension of ill-being and wellbeing for farmers that is missing in a psychology literature primarily focused on stressors for farmers, and a geographies of wellbeing literature that sometimes overlooks farmers more positive experience of place. While conscious of the risk of being attacked by livestock and ever vigilant to the threat of disease outbreaks, the close relationship of to animals was viewed as a positive by farmers. This adds to an existing literature on the therapeutic potential of animals and nature connection, emergent from the everyday tasks of more-than-human care (Lewis et al., 2022; Mandrá, 2019). Our research builds on these findings affirming the therapeutic potential of animals and nature connection as embedded in everyday rural life and not just as a health intervention. The challenge of caring for both animals and the land as a constant responsibility and physical toll was seen in another light as a taskscape promoting physical activity and creating a sense of purpose. Further research might develop our understandings of the role of nature in the wellbeing of other workers who are immersed in green/blue and other outdoor spaces, such as in the leisure and construction industries, as two examples. In other research, nature-connection has often been associated with intermittent and everyday leisure, whereas this research argues it emerges in everyday work on the land as well (Foley et al., 2022). This extends also to other sectoral or national contexts in which the imbrication of an individual in a particular taskscape will differ and likely have a bearing on wellbeing. Farming as occupational health in Ireland will emerge differently than in Australia or Canada but can be understood against that same therapeutic landscapes and taskscapes framework the role of seasonality and contingency linked to changing weather conditions is of

great importance not just to farmers but also for policy stakeholders and wider society in the context of climate change. This study notes that weather is a key stressor for farmers but it also affirms the potential of weather being positive for wellbeing by, particularly, marking the passing of time through the seasons and associated changing plant and animal life (Bell et al., 2019). Resources inherent in farming are mobilized at key moments and responded to with a deeper emotional connection to nature and greater practical engagement with the farm. Key events in the farming calendar such as calving, lambing and harvest are also points at which farmers find particular value in their relationship to nature, cultural traditions and kinship bonds. The heightened stresses of these periods are responded to with a greater mobilization of available resources. These natural events linked to the seasonality of farming are also structured very clearly through the material, social and emotional dimensions, as articulated above. They also point to the importance of everyday therapeutic practice, embedded in farmers' work and working lives, which suggests a new way of considering therapeutic landscapes more generally.

Social bonds are seen as an especially key resource for farmers' wellbeing, and an antidote to the inherent isolation and large workload in farming. These bonds are themselves forged and reforged on the farm and through social and occupational practice. The farm itself provides a unifying point for farm families and farm work. O'Reilly et al (2023) in the context of the COVID-19 pandemic identified these bonds as supporting farmers' wellbeing at a point of pressure and transition from pre-pandemic farming practices. Potential stressors were also evident in the social relations of farming as women in farm families juggled a large domestic and farming workload. The role of women in farms is seen to be under appreciated as a part of the traditional structure of farming in Ireland including patrilineal farm succession. This coheres with the findings of Booth and Lloyd (1999) who found female farmers to have significantly higher rates of stress. The shifting material and social relations of the farming in Ireland was viewed with concern as the younger generation in farm families are less likely to take up farming and increasingly likely to sell land inherited. The absence of a clear farm successor and growing value of land may lead to greater conflict related to inheritance.

One important emotional and spiritual component of farming in Ireland, institutionalized and folk religious practices, are used to make sense of the inherent uncertainty in farming. The multitude of variables including weather, injury and animal disease studied as potential stressors are coped with psychologically through spiritual practices that are themselves embedded in the rural landscape including holy wells, harvest festivals and the celebration of saint days connected to animals. Religious practice for farmers in Ireland has a social alongside emotional component. The social component in religious practices was comparable to other practices of bonding in the farming context which are intertwined with a sense of tradition, intergenerational collaboration, and place-based identity. Further research is necessary to consider the role of other traditions of social and cultural and emotional significance including traditional festivals and Gaelic games, in the construction of Irish farmers' identity and sense of wellbeing. This points to the importance of considering one's imbrication in a broader relational therapeutic landscape in order to understand the role of any given factor in health.

In this paper we challenge the narrative of farming as being negative for wellbeing and farming as causing poor mental health. While social farming has been recognized as therapeutic e.g. Kaley et al. (2019), this perspective has not been extended to farmers working the land daily. In listening to the testimony of Irish farmers and their description of the different material, social and emotional elements in their everyday working lives we find these factors that implicitly support health and wellbeing. Farming remains a stressful and complex job, which varies hugely in scale and scope globally. But in a small country and small scale study, we have identified that the job of farming has its own protective and powerful connections to environments and societies alongside emotional connections that identify a novel example of a therapeutic occupational study that might have wider applicability to other tasks and spaces.

6. CONCLUSION

6.1 INTRODUCTION

This research project coincided with a multitude of intersecting and interdependent challenges for farmers in Ireland. These include longer term challenges such as an ageing farming population, an increase in farm accidents and issues related to farm succession in the context of farm intensification and consolidation (Crowley and Meredith, 2014; McNamara et al., 2020; Shin et al.,2022). The intensification of the climate crisis has been felt in Irish agriculture in an acute fodder crisis in 2018 (Mc Auliffe, 2018 see also Brennan et al., 2022). This has re-emerged as a key ongoing concern for Irish farmers (McConalogue, July 2024). Measures to limit greenhouse gas emissions have led to a new regulatory framework and efforts to reduce herd numbers across the European Union. Ireland has among the largest concentrations of livestock in the European Union and early efforts to reduce comparable herd numbers in the Netherlands have become a catalyst for combative rural protests and political movement (Engelen, 2023). This points to the significance of this new regulatory framework for farmers. These challenges – as structural and relational elements - will form key considerations for future research on the mental wellbeing of farmers in Ireland.

The advent of the COVID-19 pandemic became a key focus for this study as concerns for public health, mental wellbeing, loneliness and isolation were foregrounded in public discourse. The question of farmers' wellbeing became more salient in this environment, given they represented an older cohort vulnerable to the COVID-19 virus and potentially vulnerable to intensified isolation as a psychological stressor (Meredith et al., 2020). The COVID-19 pandemic also perversely provided an opportunity to understand how farmers respond to psychological pressures.

The Irish Longitudinal Study on Ageing allowed the research, for contextual purposes, to compare older farmers to a similar cohort of older rural Irish workers (Paper 1/Chapter 3). This was valuable due to the richness of the dataset that included multiple psychometric tests, designed for clinical screening and deployed used in large population surveys. This was valuable also in providing an opportunity to look at psychometric test scores longitudinally, before and during the COVID-19 pandemic. This revealed that both farmers and non-farmers reported a

poorer wellbeing in the context of the COVID-19 pandemic however there was no significant difference in farmer and non-farmer populations when controlling for age and gender, across the different waves/years of the data.

The analysis of the Irish Longitudinal Study on Ageing challenged the hypothesis of farmers as susceptible to poorer wellbeing than non-farmers due to a perceived unique combination of stressors experienced by farmers. In the thesis this was investigated further (Paper 2/Chapter 4) with a small but diverse cohort of farmers in a rural Irish community, specifically in relation to COVID-19. It was established that the COVID-19 pandemic created a rupture in previous patterns of social and economic life for farmers, but that it accentuated features of farming life that were felt to be therapeutic and provided opportunities for new practices. These were facilitated primarily through technological innovation and informal networks of support.

The final empirical chapter (Paper 3/Chapter 5) in this thesis was drawn from data collected across 28 interviews with farmers and stakeholders. These interviews took place concomitant with the end of all public health and travel restrictions and the broad uptake of vaccinations for COVID-19. This resulted in a receding consciousness of the pandemic experience and its impact on mental wellbeing. Increasingly farmers interviewed spoke generally about the nature of their work and its challenges and joys. This challenged the characterisation of farmers as uniquely vulnerable to poor mental health and as uniquely isolated. This data also provided an opportunity to consider a conceptualisation of farmers' wellbeing against the literature on therapeutic landscapes.

This thesis is novel in its application of this framework to a general and everyday occupational population rather than within a clinical or therapeutic setting. This builds on research that has considered the therapeutic potential of 'everyday' experiences and literature that has pointed to the emotional and spiritual power of therapeutic landscapes. Farmers' wellbeing can be understood as having physical, social and emotional features. In contrast to a care farming literature that has considered farming exclusively as therapeutic, farming is, for those entirely immersed in it both psychologically challenging and rewarding, reflecting Conradson's (2005) identification of different outcomes within the same therapeutic space. Farmers can be understood as not necessarily isolated but instead connected to a multitude of physical, social and emotional elements, shifting in time and space, within which their wellbeing is forged and reforged..

6.2 LIMITATIONS

As TILDA includes an exclusively older cohort of 50 and above (Kenny et al., 2010), this represents a limitation in considering the experience of younger farmers. It is important that future research on the wellbeing of farmers in Ireland incorporates the experiences of younger farmers, even if they have less evident health needs. It was established in previous research that stress is a relevant factor in farmers' stress in Ireland. While the impact of age is significant, its role of stress for farmers may be nonlinear. It has been found that while farmers frequency of experiencing stress increases with age, it becomes less acute (Brennan et al., 2022). Research has found that younger farmers in Ireland experience stress related to social pressures to remain on the land and the difficulty in meeting responsibilities to do so. The financial and work pressures of farming have been identified as acute for younger farmers as the social standing and relative income of farming lessens with increasing career alternatives elsewhere (Ní Laoire, 2005). Presenting this work to farmers attending Teagasc's BeSafe seminar contributions, specific feedback was received on the social pressures experienced by younger farmers who work long hours and are unable to socialise as frequently as other young people. Participants with families spoke of valuing the greater time spent with their children but felt that the experience for younger people being denied social outlets was particularly severe. For this reason, age represents an important consideration in farmers' mental wellbeing in Ireland and the thesis emphasis on older farmers is one limitation.

The location coding in TILDA is also very broad representing an additional limitation on the nuance of place effects. Locations are coded as, (i) Dublin City and County, (ii) Another town or city or, (iii) a rural area. This limited the ability to consider specific variations in rural localities, with physical or economic isolation being a potential additional factor in shaping wellbeing. A binary urban-rural dichotomy can overlook the range of communities and settlement types (Teljeur and Kelly, 2008). More detailed analysis of location in TILDA (though recorded at address level) was limited due to the need to ensure anonymity of participants.

The geographical range of farmers in the sample is also less complete than it might be with the Western and border regions representing a disproportionately higher number of farmers interviewed. Ireland's agricultural and economic geography is sharply divided as set out in the

introduction section of this thesis (Section 1.2.2). Tillage farmers are one overlooked cohort and reflects the uneven geographical distribution of interviews. One farmer from a region in the South of Ireland where intensive largescale dairy farming predominates, spoke of the potential negative role associated with the high value in land in the social landscape of farming. This provides an important insight into the ways in which psychological factors in farming may differ across regions and divergent farm systems. It is possible also that large scale farmers, while possessing more valuable material assets, may experience greater stress due to indebtedness, long working hours or being able to employ farm workers. TILDA's sample of farmers was skewed towards dairy farmers and was therefore not representative in terms of farm systems. This is set out in section 2.2.10 of this thesis. This may have resulted from the nature of recruitment with TILDA researchers presenting to doors at a controlled random sample of household. Dairy farmers are likely to have finished their early morning work and may have been more likely to answer to TILDA researchers.

The gender imbalance among participants interviewed was a further limitation in this study. While 7 farmers interviewed are women, 14 are men. Women make up a higher proportion of rural stakeholders interviewed as 3 are women compared to 4 men. Women farmers are often overlooked in official categorisations as farms in Ireland are typically inherited within farming families by a male heir. This can lead to women who are operating and working farms not obtaining herd numbers and consequentially being excluded from government grants and agricultural educational opportunities. Farming women interviewed spoke of their distinct experiences in shaping their own mental wellbeing. These included work strain as a result of a large domestic workload and balancing farm and off-farm work. The COVID-19 pandemic also created additional pressures in caring for young children home from school. Women farmers also spoke of being overlooked and of taking responsibility for work on farms that was perceived as background but just as essential as other identifiable farm tasks such as operating combine harvesters. It was also the case that women farmers provided more experiential insights and were more likely to discuss adverse experiences, such as the challenge of the pandemic to wellbeing, and stresses in farming.

The sensitive nature of the subject of mental wellbeing and the need to discuss this in person with a degree of familiarity created a limitation in terms of disclosure of identifiable struggles with mental wellbeing. Farmers have been identified as operating in a traditional culture and

one that places an emphasis on self-reliance, enduring hardships and stoicism (Roy et al., 2014). This may mean that farmers may be more likely to withhold information related to mental health, stress or experiences of loneliness. The difficulties in discussing these topics may be amplified by a cultural framework that does not encourage acknowledging poor mental wellbeing. As farmers' were recruited to interviews by a snowball methodology it may be that their connection by degrees to the interviewer may further discourage disclosure. It was suggested by one farmer that I interview a neighbour however he then changed his mind as that neighbour had recently left a mental healthcare facility. This indicates that participants who recommended contacting others for the study likely avoided recommending that I interview farmers' experiencing poor wellbeing. This was however consistent with the ethical framework of the study and the imperative to do no harm. Despite these limitations, farmers often discussed stresses that they experienced themselves and expressed their concern for farmers' wellbeing, if not in first person then in discussing their concern for others in their community. This provided an important insight into the key issues for farmers' wellbeing even if this experiential data was discussed in terms of a third person and may have provided an easier route to disclosure.

6.3 RESEARCH QUESTIONS

RQ 1. What is the status of farmers' mental wellbeing relative to non-farmers? Were farmers particularly at risk of poorer mental wellbeing in the context of the COVID-19 pandemic?

RQ 2. How did the COVID-19 pandemic reshape life for farmers in Ireland? How did farmers adapt to the pressures of the COVID-19 pandemic in terms of their mental wellbeing?

RQ 3. How can we conceptualize farming in Ireland as representing working therapeutic landscapes?

6.3.1 Research Question 1

The first key research question asked: How can the mental wellbeing of farmers compare to a similar cohort of non-farmers in the Irish context? This was addressed in the context of the COVID-19 pandemic where it was hypothesized that farmers may represent a particularly vulnerable cohort in terms of their mental wellbeing (Meredith et al., 2020).

Important context on farm stress in Ireland was provided by Brennan et al. (2022) in their analysis of the 2018 Teagasc National Farm Survey. This paper found that 57% of farmers

experienced stress as a result of their farm work, which was the primary source of work-related stress for farmers. This work was important in providing a nationally representative study of stress for Irish farmers alongside its key finding that a majority of farmers' experienced stress as a result of their work. It is also important in providing a critical balance to later research findings on the benefits of the occupation of farming for health and wellbeing (Paper 3). However, this study did not allow for a comparison of farmers and non-farmers as no equivalent research was conducted among a similar cohort of non-farmers.

While this research establishes that farmers are subject to specific stressors as a result of their work, it could not speak to the impact that these stressors may have on farmers' mental wellbeing relative to non-farmers and it cannot be determined from this research if farmers in Ireland are a particularly vulnerable cohort. It is also important to consider that the focus on stress in wider research, still only represents one component of mental wellbeing. It is necessary to examine a broader range of indicators and experiences in order to better understand how farmers may compare to non-farmers in terms of mental wellbeing. Cleary et al. (2012) carried out qualitative research with a cohort of rural men admitted to hospitals in Ireland for suicide attempt or serious self-harming. This study found that farmers in the sample frame found it difficult to cope with increasingly vulnerable farming systems and an escalating pace of regulation. It was found that a limited educational attainment also caused this cohort of farmers to feel marginalized. Loneliness and isolation were also found to be contributing to a poor mental health, and it was suggested that the historically close-knit social relationships in rural Ireland were no longer the norm.

Cleary et al. (2012) coheres with the findings of Brennan et al. (2022) in that Irish farmers' experience particular stressors because of their work and Cleary et al. (2012) further found that these stressors may contribute to a poorer mental wellbeing. Based on this evidence it was hypothesized that farmers in Ireland represent a vulnerable cohort in terms of their mental wellbeing and this fed into the second and third papers.

It was further hypothesized that the COVID-19 pandemic would create a crisis of mental wellbeing that would affect farmers in Ireland worse than a similar cohort of rural non-farmers (by who?). Farmers in Ireland in general are an older population with 32.7% aged 65 or older and only 6.9% being 35 years old or younger (CSO, 2022). As farmers' were deemed 'essential workers' during COVID-19, they may be hypothesized to have been subject to greater stresses and anxiety

compared to older non-farmers who were able to 'cocoon' and limit their risk of exposure to COVID-19. Given the additional shift into online living during the pandemic, almost half of older adults in Ireland have never accessed the internet. Even if Ireland has a generally high rate of digital skills for those aged over 75, and for its older citizens Ireland more generally, it still lags behind a number of EU member states (Flynn, 2024). The shift to remote working during the COVID-19 pandemic was accompanied by the need to adapt to communication technology that resulted in 'technostressors' (Molino, 2020). Farmers have had to adapt to the COVID-19 pandemic and associated restrictions by a greater use of information and communication technology as live auction livestock marts could not operate as previously and additional important farm suppliers and services moved online. Complying with government regulations has - previous to the pandemic - been identified as a key stress for farmers (Daghagh Yazd et al., 2019; Deary et al., 1997). For these reasons it was anticipated that adapting to the crisis of COVID-19 would create greater stresses for farmers as compared to a similar cohort of non- farmers.

In Chapter 4 I addressed the key questions of farmers' mental wellbeing relative to non-farmers? and the sub question were farmers particularly at risk of poorer mental wellbeing in the context of the COVID-19 pandemic? TILDA as a nationally representative dataset of older adults in Ireland allowed for a cross-sectional analysis of farmers and non-farmers. The detailed demographic data in TILDA allowed for the exclusive examination of a cohort residing in rural areas who were not unemployed, on disability payment or retired. This allows for a consideration of the role of farming, in particular in shaping wellbeing. The detailed demographic data collected as part of TILDA also allowed for age and gender to be controlled for so that differences in the demographics of farmers and non-farmers in TILDA were eliminated as potential factors in farmer and non-farmers outcomes. TILDA's longitudinal aspect and its data collection during the first COVID-19 lockdown meant that it was possible to understand mental wellbeing over time and the comparable vulnerability or resilience of farmers in the context of this crisis.

Psychometric tests included in TILDA allowed for an analysis of symptoms of depression using The Centre for Epidemiological Studies Depression Scale (CES-D8), stress using the Perceived Stress Scale (PSS-4), loneliness using the UCLA Loneliness Scale (Version 3), age related quality of life using The Quality of Life Scale (CASP-12) and anxiety via The Generalised Anxiety Disorder Questionnaire (GAD-7). Developed for screening clients in a clinical setting, psychometric tests

have an important utility in studies of large populations allowing for data to be efficiently gathered and compared across a large sample frame. Results of these do not represent the definitive condition of mental wellbeing among older rural farmers and non-farmers, nor can they capture all aspects of mental wellbeing or provide the nuanced data possible in qualitative research. But the psychometric tests in TILDA do still provide important indicators of mental wellbeing across this cohort of older adults.

Addressing the question of *farmers' wellbeing relative to non-farmers* and the *role of the COVID-19 pandemic in farmers relative wellbeing* I found that (i) There was no statistically significant difference between farmers and non-farmers. (ii) Both farmers and non-farmers' experienced a decline in wellbeing from Wave 5 of TILDA (2018) to the COVID-19 Wave (2020). This challenged the hypothesis of farmers being a vulnerable cohort especially at risk of poorer mental wellbeing. It also challenged the hypothesis that farmers might be uniquely affected by the psychological pressures of the COVID-19 pandemic. This challenges the findings of a majority of international studies systematically reviewed Daghagh Yazd et al. (2019), which find farmers to have a worse mental wellbeing when compared to non-farming populations previous to the COVID-19 pandemic. It coheres with the work of Chiswell(2023) who in investigating farmer suicide, argued that farmers did not suffer from a unique vulnerability to poor mental wellbeing and factors other than mental wellbeing contributed to the higher rate of suicide among farmers. Addressing this research question was key in the subsequent development of this PhD thesis and was a catalyst in its methodological development as it became key to understand the multitude of factors underpinning these outcomes. This involved a deeper exploration of the question of farmers' mental wellbeing in the immediate context of the COVID-19 virus in **Paper One** and in **Paper Two** an investigation of how the farm context can shape the mental wellbeing of those who work them. Addressing the first research question drove further methodological and theoretical development in this research project. Semi-structured interviews were utilised to gain a richer understanding of the factors in farming that shape wellbeing and the concept of therapeutic landscapes was explored in order to frame the diverse factors (physical, social and symbolic) that farmers identified as important to them.

6.3.2 Research Question 2

The COVID-19 pandemic resulted in a crisis of wellbeing globally (Weinberger et al., 2020; Twenge & Joiner, 2020). Patterns of economic and social interaction were severely disrupted as efforts were made to limit the contagion. Older adults, those living alone, and rural populations were identified by researchers as being particularly at risk of suffering poorer wellbeing. This was linked to a greater risk of social and physical isolation and greater loneliness (Amerio et al., 2020; Herron et al., 2021; Van Beek & Patulny, 2022). This is a key consideration in this thesis as farmers are on older population in Ireland. Isolation had already been identified as a possible source of psychological distress among farmers, which included a framework of physical, social, and cultural isolation first advanced by Alison Monk (1999), further developed by Wheeler et al. (2023). This was expected to have been exacerbated by the onset of the COVID-19 pandemic and accompanying lockdown. Meredith et al. (2020) also noted that farmers are an older cohort who were deemed essential workers during the COVID-19 pandemic and were highly vulnerable to the virus. A key finding in Chapter 4 was that farmers did not suffer poorer mental wellbeing than non-farmers and both experienced a decline in wellbeing in the period of 2019-2020. This led to the second key research question of: *How did the COVID-19 pandemic reshape life for farmers in Ireland? How did farmers adapt to the pressures of the COVID-19 pandemic in terms of their mental wellbeing?*This research question was addressed in Chapter 5 drawing from a smaller subsection of qualitative interviews conducted, but with a specific COVID-19 focus. These interviews were with a small but diverse cohort of farmers from the Irish border region that were acutely affected by the COVID-19 pandemic. Analysing these interviews, I found that farmers' unique experience of the COVID-19 pandemic could be understood in three themes of (i) disruption, (ii) continuity, and (iii) new ways of being.

6.3.2.1 Disruption

Disruption represented the breakdown in working and social routines in the wake of the COVID-19 pandemic. A key feature of this for farmers was the disappearance of routine spaces where they socially connected, with socialisation identified in the wider health geography literature as a key wellbeing dimension (Kaley et al., 2019). Key social spaces for farmers often overlapped with spaces of commerce, in particular live auction marts. While the farmers interviewed would not explicitly state that they experienced isolation, they often expressed concern for other, older

farmers in their community or those living alone who they considered as more vulnerable. It was felt that the breakdown in the routine of attending marts could lead to poorer behavioural health among farmers living alone, who may have a poor diet. This is relevant in light of van Doorn et al. (2017) finding that almost half of farmers had high blood pressure, and the vast majority had at least four risk factors for cardiovascular disease. This points to the potential for a breakdown in key spaces for farms in precipitating maladaptive health behaviours. The reshaping of religious practice in this period had a negative consequence for farmers who felt that the lack of in person contact at funerals limited families in being able to process grief. This reflected the particular salience of communal religious practices interwoven in rural Irish life. It was felt that generally the social bonds in rural communities were attenuating with a lack of face-to-face contact. This was seen to manifest in news that would normally be shared between neighbours no longer being done and important milestones being missed. This raises questions about the broader social shifts in rural Irish life and the role the COVID-19 pandemic may have in weakening social bonds in the long term.

6.3.2.2 Continuity

The theme of continuity in farmers' experience of the COVID-19 pandemic included the features of farming life that proved durable and resilient and were seen by farmers as psychologically protective. These features of farming life that were valued and felt to be therapeutic were foregrounded during the COVID-19 pandemic. Farmers pointed to a sense of space and freedom that were pronounced features of farming life at that time. This reframed the isolation in farming, of particular interest in an Irish context given farms are predominantly owner operated, as a positive factor particular to this occupation. Farmers' relative authority and autonomy in this workspace were of heightened value as farmers felt able to dictate the level of precaution that they felt comfortable with to limit the spread of COVID-19. Others stepping onto the farm in general were expected to follow the preferences of the farmer in how to manage interactions in the context of contagion dangers. Farm buildings, designed to ventilate and prevent animal disease, were optimal environments in this context. One farmer who had contracted COVID-19 contrasted the experience of isolation she had with a large natural environment to walk in with isolation to an individual in a small house/apartment in a city experiencing the same. The greater control and authority farmers' experienced however existed in tandem with their vulnerability. Contracting COVID-19 created great fear both in this farmer and in another who was spoken about by the clinical contact tracer interviewed. Their self-reliance also meant they had no one

to rely on, especially when the entire family fell ill, so that vulnerability and resilience were literally relational, i.e. linked directly to family, in this case.

The continuity in care for animals was critical for farmers in adapting to the COVID-19 pandemic. Care for animals was felt to be particularly therapeutic in general and provided an outlet for smaller children who were not attending school in person. The routine of farm work represented behavioural activation and served as a positive task-orientated coping strategy. For one individual interviewed, however, she felt that her parents operating a farm at this difficult time began to spiral psychologically accompanied linked to a reduced upkeep in physical appearance that made it more difficult for them to resocialize. She spoke of routine farm tasks, including paperwork that was not completed. It is important for future research to consider that while farming activity can be positive psychologically, farmers in crisis who fall out of this activity may be subject to severe psychological spiralling, as there is often no means to step back from their farm work despite poor wellbeing. It is important also that farmers' livelihoods were sustained in this period as the price of farm produce remained consistent. This also allowed farmers to favourably contrast their experience with others in their communities who may have suffered a great financial burden as a result of the COVID-19 pandemic.

6.3.2.3 New Ways of Being

New ways of being encompassed the inventive response of farmers to the pandemic and their reshaping of work and social patterns to adapt to this adverse context. Farmers were able to draw on a favourable regulatory context, as they were deemed essential workers. Private enterprises also mobilized resources to rapidly allow farming commerce to continue. Technological innovations adopted quickly by farmers were commercial, educational, and social. The key technological resource that farmers spoke of was the Mart Eye app that was used to continue livestock auctions. Farmers drew on pre-existing social networks to collaborate in adapting to the exigencies of the pandemic. The younger generation in farm families was key to the uptake in technology to sustain farming. A parallel to this technological adaptation was spoken of by one older farmer practicing social distancing at this time who created a new division of labour with a nephew who was working the farm alongside him.

The COVID-19 pandemic was seen to expedite processes already in motion within personal services moving online. New networks and practices created during the pandemic were viewed as being key developments in farming and here to stay. These were viewed in complex and mixed

terms by farmers. The turn to online marts was seen by some as more efficient, comfortable, and financially advantageous however the important social function of marts is fundamentally challenged by this technology, and it was believed that many farmers had not returned to marts in person, with the same social intent of connecting with others and getting lunch in mart canteens together. One farmer spoke about online news and educational farming resources comparing favourably to farmers' meetings, and felt he would withdraw from farming politics due to a new perspective gained during the pandemic. Adapting religious practices using technology was valued by older farmers in particular who took solace from watching religious services from home. However, the pandemic was seen to accelerate a decline in participation in religious communities, which one farmer viewed as a negative development. While farmers interviewed found technology important in sustaining social connections it was also felt that it could not replace contact in person. Community bonds were felt to have attenuated during the pandemic, and this was seen to represent a more general threat to wellbeing.

6.3.3 Research Question 3

The qualitative component of this research developed from a concern with farmers' experience of the specific crisis heralded by the advent of the COVID-19 pandemic, to a consideration of wider key factors for farmers' wellbeing in Ireland. This arose from the expanding of interviews with farmers and rural stakeholders, who increasingly wanted to discuss mental wellbeing generally and longer-term anxieties and hopes they had for farming life. Twenty-eight interviews were conducted including with religious leaders, rural healthcare workers, a publican and a mart manager. The question of contributing to a *conceptual framework of farmers' wellbeing in Ireland* is addressed in Chapter 6, specifically in relation to the question, *How can we conceptualize farming in Ireland as representing working therapeutic landscapes?* Drawing from all semi-structured interviews conducted I argue that frameworks of therapeutic landscapes and therapeutic taskscapes hitherto applied to studies of therapeutic interventions and recreation can provide valuable insights into the role of the farm in wellbeing. The experience of farmers interviewed can expand our understanding of greenspace and natural landscape as potentially challenging for wellbeing while also experienced as therapeutic. This research draws on conceptions of space and place that look at the role of the physical environment in health and beyond this to the social and cultural world intertwined with this landscape. Emerging as significant themes in the research are physical, social and emotional components of wellbeing for farmers. These are not sealed and discrete units but are constellations, a multitude of factors

farmers see with a dual role in the forging and reforging of mental wellbeing. A tension exists between research on farmers' mental wellbeing that is guided by the multitude of dangers implicit in farming life and a parallel literature on the therapeutic experience of the outdoors. This body of work on greenspace and therapeutic landscapes while rich and diverse overlooks the potential hazards and hardships for those immersed in farm landscapes as working environment and a familial, social, and cultural tradition. Monk (1999) theorises the impact of isolation on farmers as being physical (poor infrastructure, isolation from services, not proximate to others), psychological (related to cultural prohibitions on help seeking, with conceptions of famers as self-reliant) and cultural (a fracturing in farming culture). This can be inverted, however to instead see farmers as not isolated but connected to their physical, social, and cultural world and consider instead the tensions of wellbeing and ill-being in each dimension of the farming landscape. This research suggests a new way of thinking about health in occupation, one that considers the characteristics of labour that are positive and health enabling.

6.3.3.1 Material Relations

This research has affirmed the positive role of the physical farm environment for the wellbeing of farmers. Previously studied in terms of a therapeutic intervention, farm work represents a therapeutic taskscape for those immersed in this work daily. The farm environment brings dangers previously overlooked in greenspace literature including the risk of farm accidents. This also represents a challenge to the mental wellbeing of farmers. Farmers highlighted the positive role in caring for animals in their wellbeing. This responsibility to provide for the needs of their animals on a daily basis kept farmers active and promoted positive coping strategies in stressful periods, a process termed behavioural activation. This was seen to have a dual impact on the wellbeing of older farmers, who are seen to stay physically active in old age but to also expose themselves to greater dangers of accidents and injuries as a result of their continued farm work. Farmers also spoke of how they value their being immersed in nature and invoked the entire sensory experience of the outdoors. Springtime represented a stressful period for farmers with long hours and greater workload. However, this was valued by farmers as a pleasant sensory experience on farm. Working outdoors also creates stress in the context of adverse weather conditions. Weather is one of the key factors outside of the control of farmers and bearing in critical ways on their ability to operate. Good fortune in warm dry summers was cited as a crucial factor in farmers' experiences of the COVID-19 pandemic. The dependence of farmers' mental

on their material environment, organic and inorganic, is evident also in anxiety surrounding animal disease which can place an enormous psychological strain on farmers.

6.3.3.2 Social Relations

Farming in Ireland exists in a particular social context with farm labour predominantly practiced by owner operators and their families. This typically takes the form of a multi-generational household living on their farmland and collaborating with farm work. Proximal social relationships, in particular the nuclear family, were of key importance to farmers' wellbeing. Farmers cited their close family bonds as a key psychological resource. The close familial relationships, father and son relationships in particular, are forged through a process of shared farm labour. From an early age children are immersed in the farm environment and caring for lambs and calves was seen to be critical in their emotional development. This imbrication in farming life was seen to create a close identification of younger generations with farming and strong social bonds.

The social relationships enmeshed in Irish farming are mobilized at key moments of labour in the farming year. One farmer spoke of neighbours gathering to harvest barley in a traditional way in order to connect socially with neighbours and connect across generations in this rural community. Farmers expressed concern for some sections of their community who they feared were vulnerable to isolation, however on the whole farmers did not feel themselves to be isolated. Instead, farms spoke of relationships forged through farming that pointed to a depth over breath of social connection. Farmers' social relations are forged on the sight of the farm but also in social spaces including rural pubs, cultural and religious gatherings, livestock auction marts and farming supply stores. As many spaces moved online in the context of the COVID-19 pandemic, and others were closed or were predominantly withdrawn, the social landscape of Irish farming was remade. One farmer spoke of experiencing social isolation re-entering these spaces while others were concerned the in person social contact was in a longer-term decline for farmers.

Generational shifts in career for farm families were also spoken of as a potential threat to farm family relationships and consequentially farmers' wellbeing. As expectations of lifestyle and income changes for a younger generation born into farming life many farmers have no clear succession plan. It is common for farms to have no potential inheritor who is interested in taking

up farm work. This has been accompanied by a decline in the social prohibition in selling land and growth in asset prices. This was seen to represent a danger to the social cohesion of farming families as disputes over inheritance have the potential to become more common.

6.3.3.3 Gender and the Social Relations of Farming

The social context of farming in Ireland is inseparable from traditional patriarchal structures, which has manifested and been reproduced in the structure of farm succession. Land is in this structure inherited patrilineally and women working farms, who are not the landowner, are at a disadvantage. This inequity in inheritance has corresponding legal ramifications with financial, bureaucratic, educational and political consequences. Most farm women, particularly older women, have no legal ownership rights. Women farmers often have their names excluded from the herd number which has serious implications for accessing grants and financing. This extends to agricultural education where only 5% of students enrolled are women (National Dialogue on Women in Agriculture, 2024). Farming political structures and farmer organizations are predominantly male, with women comprising a majority of leadership only of organizations focused on the farm families and women farmers specifically (Shorthall, 2001).

A consequence of this is women's increasing reliance on off-farm employment. This has been identified as a way in which the patriarchal structure of traditional farming is resisted, and where a sense of purpose is created off farm. This has also involved considerable time and workload pressures on women farmers, who felt they had little time to themselves and were dissatisfied with their share of domestic labour (Hanrahan, 2007). This is affirmed by the interviews conducted with female farmers who experience great pressures with off farm work, farm labour and domestic labour. This was heightened during the COVID-19 pandemic with additional stresses of home schooling and remote working. Issues of rural broadband access created additional stressors in this period. While a fulltime female farmer interviewed felt less pressure due to not holding an off-farm job, Jacinta identified the role of female farmers as being overlooked in important respects. She pointed to a large workload put into farming in the background. T division of labour meaning that tasks such as operating large machinery conducted by male farmers, while equally important but overlooked tasks are performed by women. This is one respect in which the social context of farming is not uniformly positive for wellbeing with a large workload, time and financial constraints falling on women in particular. The familial networks that are clearly a key resource involve a large amount of labour from

women farmers with a context in which they are locked out of farms ownership structures and official recognition in important ways.

6.3.3.4 Emotional Relations

An emotional relationship with the farm landscape was found to be an important and previously under-researched question. I found farm spaces imbued with meaning and an emotional and life course resonance that has been identified in other studies of geographies of wellbeing (Bell and Foley, 2021; Foley, 2017). Farmers felt an emotional attachment to the land they worked, and this is manifested in a multitude of its physical markers. Its rivers and heritage structures are valued and a point of pride for farmers interviewed. Farmers interviewed feel a sense of purpose in their role as custodians of the land and this runs through both secular and spiritual aspects of farming life. The structure of farming in Ireland with smaller scale farms worked with familial labour and inherited intergenerationally creates a powerful emotional bond with the farm landscape and farm labour.

A secular manifestation of this emotional relationship to the land is a revival of interest in collecting historic field names, which were previously known to farmers and passed orally, often in Gaelic. Farmers have made efforts to record and map these field names. Sites of institutional religious practice in rural areas, speak to farmers' sense of place attachment, community and familial bonds, which are key. One religious leader spoke of the importance of *roots* to farmers, having worked in rural and urban communities he found farmers to have a particular emphasis on graveyards and their maintenance. This was also seen in his congregation's care for rural church buildings, which was seen to have a nostalgic quality and be motivated by its connection to generations past.

Religious and spiritual practices for farmers were part of an affective relationship to land that is *in place* spatially specific and fixed geographically tied up in farmers' rituals and practices on the land. This finding affirms the research on holy wells in Ireland, which identified their material and cultural therapeutic properties (Foley, 2011). For Anglican and Presbyterian farmers in Ireland the key date in the religious calendar is the harvest service. Its draw and emotional resonance for farmers stood in contrast to its relative theological insignificance. This was true of a rogation service, known in this rural locality as the 'tractor service'. At the alternate end of the farming calendar this took place in spring and involved farmers' gathering on the land with their

tractors and praying together, blessing the land, machinery and those who work it. It was acknowledged that this drew farmers who had no other public religious practice.

Farmers also insisted on each small rural congregation having its own harvest service while religious leaders would prefer them to be consolidated from disparate smaller churches into a large gathering. This is another manifestation of farmers' place attachment and its emotional power. For Catholic farmers saint days, involved religious practices and rituals on the land including inviting a priest to bless animals and fields, and placing holy water and religious medallions in sheds to protect animals.

The material uncertainty of farming life is processed through traditional religious and spiritual practices, that channel and structure farmers hopes and anxieties into rituals. Thisgives meaning to the uncertainties of farming life by understanding this uncertainty in religious terms. While farmers value their sense of selves as independent and farming life as bringing freedom, they are subject to mercurial economic and ecological factors. This vulnerability to change is the obverse point of farmers' self-reliance. Practices on the land that are viewed by religious leaders as 'superstitions' are one means by with farmers feel protected against danger. Blackthorn trees are allowed to grow, and megalithic ringforts are uncultivated as they carry great power in the Irish folk tradition. Faith healing, which is passed down through generations, is a valued by many farmers as an antidote for both sick animals and personal ailments that frustrate other treatments. Farmers spiritual practices are, like the social structures and sensory joys of farm work, mobilized to support wellbeing at the key points in the farming calendar where long hours, physical dangers and economic imperatives of farming life are of greatest concern. This is true of the May Eve, Saint Bridget's Day for Catholics, and Rogation for rural Presbyterian and Anglican communities.

Farmers' connection to the changing of the seasons, and the cycle of life and death in animals was seen as bringing a sense of equanimity and appreciation for life's transience. This was seen by one religious leader as connection to 'the vital things of life' and forms a part of a greater whole in how farmers in Ireland see their work having meaning beyond its material imperatives. Farming exists in a social, cultural, and emotional landscape that is like its materiality, shapes the wellbeing of those who work the land.

6.4 CONTRIBUTIONS TO FUTURE STUDIES

A key insight from research from within geographies of wellbeing is that it points to human health as enmeshed in a set of material, social and cultural relationships that are constantly evolving. Understanding how farmers are situated in this array of forces, their unique position in space and place, is key to understanding farmers' mental wellbeing. Applying concepts from this literature to farmers, this thesis argues for the relevance of natural spaces not just as a health intervention or recreational asset but as a key factor in the wellbeing of Irish farmers who live and work in rural spaces. An empiricist focus of the farmers' health literature and its emphasis on potential dangers is complemented by a therapeutic landscapes framework which emphasises how farmers draw on physical, social and emotional resources to enable a positive wellbeing. The relevance of this framework in identifying the interconnected and evolving nature of the physical, social and emotional landscape is demonstrated in this study. Future research must be attentive to the material shifts taking place in Irish agriculture including farm consolidation and its effect on the therapeutic landscape of farming. The potential to increase familial conflict may negatively affect farmers' wellbeing. Smaller geographic concentrations of farmers may as Monk (2000) argued that increased isolation as communities diminish. Hagen et al. (2020) analysis of farmers' mental health has pointed to farm workers as a distinct cohort. It is likely that a consolidation of farms will make farm workers a larger segment of the rural workforce and this will necessitate research into their wellbeing in the Irish context.

The long-term impact on farmers' wellbeing of increasing dependence on information communication technology is yet to be understood. It may be that it will increase a bureaucracic burden for farmers as processes such as food quality inspections will be conducted remotely with a greater burden of work on farmers. The COVID-19 pandemic can be understood as one manifestation of epidemics that are linked to habitat destruction and climate change. It has been characterised as one of several zoonotic viruses that has arisen due to deforestation and the incursion of agriculture into new terrain. It has exposed the weakness of healthcare systems globally in coping with the consequences of environmental crisis (Zang et al., 2021). Considering the severe effects of the climate crisis on the material context of farming and consequent bearing on all aspects of farming life will be critical for future research in farmers' wellbeing.

6.5 Summary Statement

This thesis contributes to the understanding of the mental wellbeing of farmers in Ireland and challenges the assumption of farming as leading to poor mental wellbeing. This thesis establishes instead that farming life has multiple therapeutic dimensions that farmers draw from to deal with farmings dangers and psychological challenges. . Drawing from international literature, this thesis examines the key factors in farming that are potential stressors contributing to illbeing but also the previously overlooked therapeutic components of farming life. An examination of farmers' response to the crisis in the COVID-19 pandemic this research established the multiple disruptions and struggles of this period for farmers, but also the key material and social resources that are farmers draw upon in crisis to support psychological wellbeing. This thesis concludes by arguing that farmers' relationship with their broader landscape can be understood as a therapeutic through their physical, social, and emotional relationship with the land. This broadens our understanding of geographies of wellbeing and therapeutic landscapes and makes both a theoretical contribution to the field in demonstrating the importance of everyday spaces and practices of wellbeing and an insight for public health policy by centering the workplace as a key consideration in Irish healthcare policy..

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APPENDICES

Appendix A: Introduction to the Study and Consent Form

Farmers and their wellbeing during the COVID-19 pandemic

Dr David Meredith, Alexis O'Reilly, and Dr Ronan Foley

This research has been approved by Maynooth University Research Ethics Committee. They can be contacted by email at; research.ethics@mu.ie

What are we trying to do and why? (Research Goal)

- Adapting to COVID-19 has created new challenges in all sectors of the economy. Farmers, due to their essential role in food production have had to continue working during the COVID-19 pandemic. This research aims to understand how farmers have responded to the pandemic.
- COVID-19 lockdowns and social distancing measures, while essential in limiting the spread of the virus have resulted in greater isolation. Farmers live in rural areas and often work alone.
- Farming is often considered a healthy life. Farming involves physical work and spending time in green space. This may help farmers during COVID-19.
- This research aims to understand the impact of COVID-19 on farmers in their work, social life and as individuals.

How you can help with the research?

- **Before we get to how you can help it is important to note that,** at any time, you can withdraw from the study. You do not have to give any reasons for withdrawal. This information is all anonymous and you can have a copy of any articles or chapters published from these interviews.

So how can you help?

Take part in an interview (30-45 minutes) talking about your experience of the COVID-19 pandemic. This includes how COVID-19 has impacted on farm work, how farmers have adapted to respond to the COVID-19 pandemic. How the COVID-19 pandemic has impacted on the social lives of farmers and on rural communities. You interview is anonymous, your name will not be shared with anyone nor will details about you that could identify you.

The following questions will be asked as part of the survey:

Occupational

Is your work as a farmer any different because of COVID-19? Has COVID-19 created new challenges in your work?

What changes have you made in your work as a farmer to deal with COVID-19 and with the restrictions?

Some people have found leaving their house for exercise to help them during the lockdown. This has included being out in nature. This has been harder in winter because of poorer weather.

As a farmer you work outside in all seasons. Do you feel this helps in the lockdown?

Do you feel farming is important work? Do you think farmers contribute to society/ the country?

Health/ Wellbeing

How is your health?

How are you feeling?

Social

How do you keep in contact with people/ keep in touch with neighbours?

How do you get the news?

Personal

We have had three waves of COVID-19 and COVID-19 restrictions have been brought in on three separate occasions.

In terms of your own experience was there any difference for you over time? Did you get used to the restrictions?

What have you found has helped during the lockdown?

Have you found doing farm work helped during the COVID-19 crisis?

How will the interview be recorded?

The interview will be recorded using a microphone and a recording will be kept so the interview can be put in writing. After this is completed the recording will be deleted.

Reports

- We will publish the summary results of the research in academic journals and reports.

What happens to your data?

- We will store the data on a secure server.
- Data will not be shared with other researchers / individuals that are not named above.
- At any time you can ask for a copy of your data and we will provide it to you.
- You can request that we delete your data at any time or exclude it from the analysis.
- After five years, we will delete all individual data.
- Your data collected as part of the study will be used in journal articles and in a PhD thesis.

Consent Form

I agree to participate in the research study; "Farmers wellbeing during the COVID-19 pandemic."
☐

Please tick each statement below:

The purpose and nature of the study has been explained to me in person & in writing. I Have been able to ask questions and I am happy with how they were answered. ☐

I am participating voluntarily. ☐

I give permission for interview to be recorded, for a written copy of the interview to be created and this information used in the study ☐

I understand that I can withdraw from the study, at any time, whether that is before it starts or while I am participating. ☐

I understand that I can withdraw permission to use the data right up to 01/09/2021. ☐

It has been explained to me how my data will be managed and that I may ask for a copy of it for myself ☐

I understand the limits of confidentiality that were explained in the information sheet ☐

I understand that my data, made to be anonymous, may be used in any publications, such as articles and books if I give permission: ☐

I give permission to be offered the contact details for health and support services if I am feeling unwell. ☐

It must be said that, in some situations, confidentiality of research data (How a persons information is kept secret by researchers and they are not named) and their records may be no longer confidential if the Gardai or the courts order for this information to be revealed as part of a criminal investigation or as part of a court case. In a situation like this the University will take all reasonable steps within law to ensure that confidentiality is maintained to the greatest possible extent, that people are not named and their private information is not given away.

Signed……. Date…….

Participant Name in block capitals ……..

Appendix B: TILDA Data Use Contract

Data Use Contract

Agreement between: The Irish Longitudinal Study on Ageing (hereinafter "TILDA")

and _____ (hereinafter the "USER")

concerning terms and conditions for access to TILDA Data, including 'early access'

1) For the purposes of this agreement, "data" shall be taken to mean a set of TILDA data files, together with any documentation concerning the files, on paper or other media, which TILDA may supply to the USER. 'Early access' refers to access by the USER to the data before the dataset is publicly available.

2) For access to the data, a 'Request for Access to TILDA data' form must be supplied by or on behalf of the USER and specifically approved by TILDA.

3) Copies of the data may not be removed from the TILDA offices or locations where TILDA hotdesks have been set up unless permission for this has been provided by the TILDA Management Team.

4) Only the USER shall be permitted to access the data provided under this agreement.

5) The data shall not be transferred to any third party/collaborator without the express permission of the TILDA Management Team. Any third party granted access to the data shall be bound by the same confidentiality agreements, shall agree to store, access and use the dataset in a format approved by TILDA and is required to sign the TILDA Data Use Contract. This includes ensuring any programs used to access the data do not transfer the data to a third party for any purpose e.g. processing, data linkage, or storage.

6) It is a condition of access that all external researchers contribute to the study by joining a TILDA working group. In this way ideas can be exchanged, duplication of research can be minimised and it allows for better planning of future waves of TILDA.

7) Access to the data implies that the USER contributes to the data-cleaning and variable construction process. No warranty is given by TILDA that the data or accompanying documentation is error free. It is imperative that any errors found in the data are reported back to TILDA immediately.

8) Publication of results based on preliminary datasets is prohibited. Please consult the Data Manager to ascertain the datasets that have been approved for use for publication and which datasets require an updated and cleaned version to be supplied prior to use for publication.

9) The USER shall supply TILDA with copies of any report or analysis based on the data at least 2 weeks before it is intended to submit for publication or release to a third party. The USER shall carry out any amendments to such a report or analysis, requested by TILDA to preserve the anonymity of the data and the integrity of the analysis and interpretation, before the report or analysis is published or otherwise released.

10) The data may be used for data analysis and presentation by the USER for the purpose of the project agreed in the 'Request for Access to TILDA data' form submitted by or on behalf the USER and approved by TILDA. Use of the data and/or any results obtained from use of the data for any other purposes is prohibited.

11) Approval to access the TILDA data is provided for six months after which the access rights of the USER will be terminated. If continued access to the data for the approved use is required, the USER must complete and submit a 'Data Access Extension form'.

12) The USER may not use or attempt to use or claim to have used the data, or any results obtained from use of the data, to obtain or derive information relating specifically to an identified or identifiable individual or household.

13) The USER may not match or attempt to match or claim to have matched the data, or any results obtained from use of the data, with any other data at the level of individuals or households.

14) The USER shall ensure that any report or published analysis based on the data shall not directly or indirectly disclose information relating to any identifiable individual or household.

15) The USER shall ensure that all such reports and analyses acknowledge TILDA as the source.

16) Copyright and all other intellectual property rights relating to the data, and any documentation concerning the collection of TILDA data, are vested in The Irish Longitudinal Study on Ageing and Trinity College Dublin.

17) Permission to use the data for the specified purpose may be withdrawn by TILDA at any time, without notice and without cause assigned, by written notice to the USER signed by or on behalf of the TILDA Management Committee.

18) In the event that this agreement is terminated by either TILDA or the USER, the USER shall cease to use the data and shall retain only those published or unpublished results or analyses obtained from the use of the data agreed by TILDA; all other datasets, results, analyses and records relating to TILDA shall be destroyed.

19) Upon completion of the approved work or upon termination of this contract, the USER is required to complete a 'TILDA Data Users Completion of Work Form' and return it to the TILDA Data Manager.

20) A representative of TILDA shall be permitted access, at all reasonable times, to the results and analyses obtained from the use of the data together with any records and documents relating thereto. The USER shall provide TILDA with any information which TILDA requests in relation to the USER's compliance with this agreement.

21) Any alteration to the terms of this agreement must be made in writing and must be signed by or on behalf of the TILDA Management Committee.

22) The USER may not assign the rights granted under this agreement to any other individual, organisation or body.

23) If the USER becomes aware of any breaches of the conditions laid down in this agreement, it shall notify TILDA promptly.

24) Correspondence from the USER concerning this agreement shall be addressed to Sameh Hassan, Data Manager, TILDA.

25) The USER agrees to be bound by the terms and conditions of this agreement.

Name: _____

Email: _____

Signed _____ Signed _____

TILDA representative USER

Date _____ Date _____

Appendix C: Guidelines for Livestock Auction Marts during the COVID-19 Pandemic

A special word of thanks to our dedicated staff members for their invaluable assistance with the implementation of the coronavirus restrictions over the past number of weeks. Your help and support is greatly appreciated.

Stay Safe

Important Notice re-Coronavirus COVID-19

PSRA No [redacted]

[redacted] Co-Operative Livestock Marts

Coronavirus COVID-19

Please note the following

[redacted] **Mart is currently open for business.**

Due to the seriousness of the current Coronavirus COVID 19 the following restrictions will be in place for all sales from Friday March 20th

1-There will be no canteen facilities with immediate effect.

2- No Seller will be allowed into the chutes to read their cattle and will have to advise the yard staff when they arrive how they wish to have their cattle numbered.

3- Sellers will only be allowed in the sales ring for the duration of the sale of their stock or if they wish, they can have their animals sold subject.

4- Rin,gs will belimited to numbers and we urge peopFe only with business to attend

Sm Children wm not be al.lowed under any circumstance's en.tir·y onto the premises

6) If you have fever and/or cough you should stay and home regardless of your travel or GOntact history

7- All customers must use Sanitiiers which will be available at various points throughout the Mart.

The**above** restrictions app.ly until further notice.

Y,our co-operation with the protocol would be apprec'ated

6) Anyone that has been out of the country recently or been ·n contact with anybody exhibiting any symptoms please do not attend

The above restrictions apply until further notice.

Your co-opera,tion with the p.rotocol w,ould be appreciated

Signed: -[redacted]

Manager.

Tueday March 24th Mid Spring Special Sale of Weanlings

MID

October 2019
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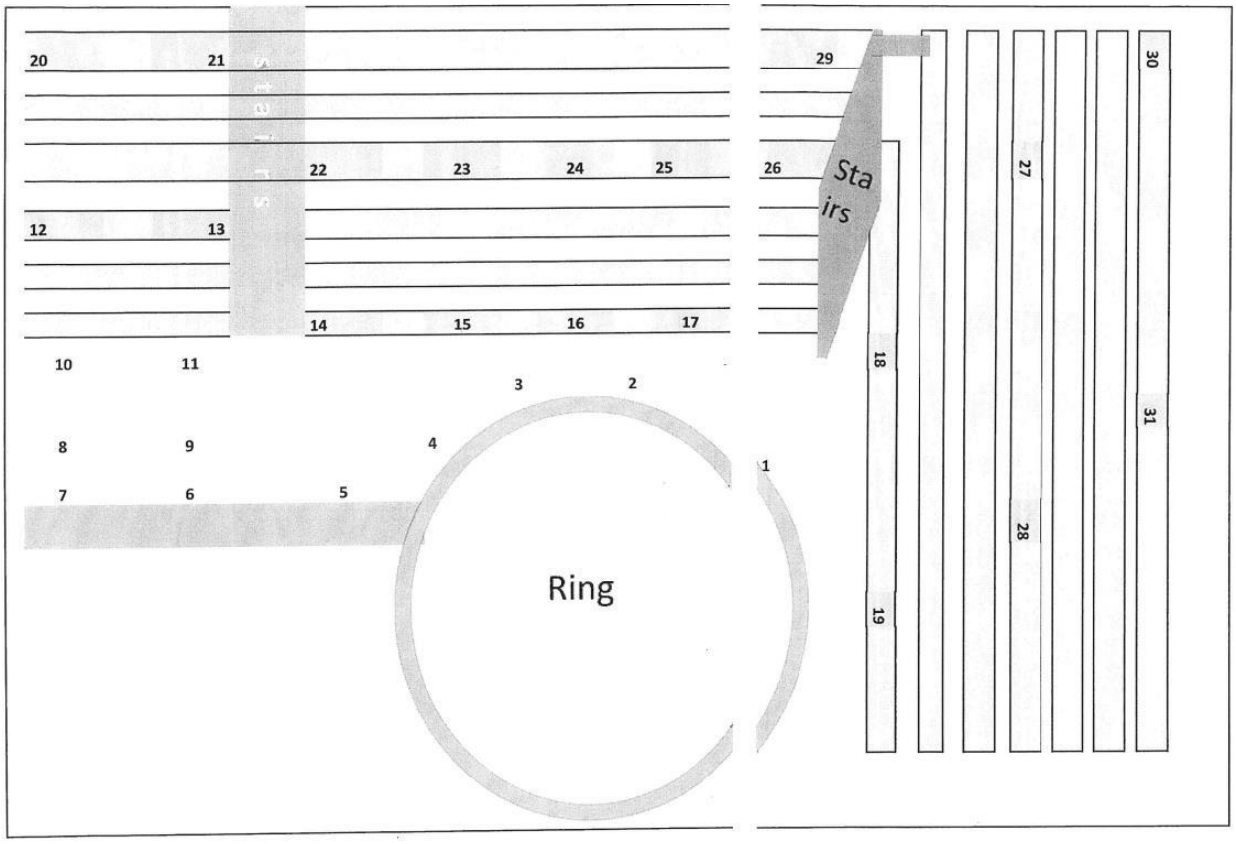
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PECIAL

sa,e of Cont.X Heifers

Bookings accepted up to 5 p m. on Thursday March 19th

Also Bullocks & Dry Cows

Enquiries-

Important Notice - Re; Coronavirus - Covid -19

—Mart

PSRA No [redacted]

Image may contain: sky, possible text that says icoronavirus COVID-19'

IMPORTANT NOTICE

[redacted] Mart remains in business for now, but we must strict the number of people on our premises.

Please do not enter the Mart if you do not have business as a Buyer, Seller or Haulier.

No Children will be permitted.

We will be limiting access to sales rings to 100 people maximum.

Customers are requested to use Sanitisers which will be available at different points throughout the Mart.

Please co-operate with staff directions

We apologise for the inconvenience but, as we all know this is a national effort to contain COVID-19

Thank you for your co-operation

Stay Safe.

[redacted] Manager

Important Notice Re: Coronavirus (COVID-19)

Important Notice re: Coronavirus (COVID-19)

[redacted] Mart Sale for Bullocks, Heifers and Dry Cows will take place to-morrow Friday March 13th @ 11 a.m.

Please note the following:

We kindly ask that only "Trading Customers" should attend the sale until further notice. (ie. those buying and selling livestock)

We most respectfully ask non-trading patrons to refrain from visiting until further notice up to 29th March 2020 when further guidance will be provided.

If you are feeling unwell, please do not attend the sale.

Proposed covm.19 Controls 1(22/10/2020)

STANDARD OPERATING PROCEDURE (SOP)

FOR THE PROVrS1ON OF RESTRICTED LIVESTOCK SAL, [redacted]

MART

MART: [redacted]
MART NUMBER;
PERSON IN CHARGE: [redacted]

The following person/pe rsons has responsibillfty for enforclng and ve rlfying mart SOP around covm 19 [redacted] .Mart Manager

GENERAL PROTOCOLS

1) Only invited sellers, buyers and mart staff will be allowed into ma,rt premises. This wilt be controHed at the main entrance gat,e wfU, only one exit and entry point
2) A list of Invited sellers a1nd buy,ers will be available for inspection before and during each sale
3) No children will be allowed.
4) Sell'ing farmers and buyers wi I be informed by phon.e/email/te><ctfprortocols before visiting the mart and they muist agree to abide by these in advari,oe. These wi111 indude adherenc-e to all HSE guidelfn such as social distancing, cough etiquette and handwashing/s:anitis, n:gon e,n,teringand le avTng the mart.
5) There will be onry o,n,entrance/exit point to the yard and this will be manned *at* all times by a member ,o.f mart staff. A record will be kept of each person's name en entering tc and leaving the yard (time in and time out wJI be rec:orded.J.
6) Only mart staff wll,I,be allowed in the mart yard arid livestock pe111,ning areas •e:Xcept during viewirag period.
7) All attendee5,indudin,g :staff will be required to declare that they are free from symptoms of COVID-19.
8) All persons on the mart premis,es must wear faoe covering/mask at all times

STAFE

11he minimum mumber of rnart staff required to safely implement tlhe sale will be present on the mart premises at any one time.

Staff will he requited to sanftise and use disposable gloves which shaH be available both in the office and at designated points in the yard. AH gloves used by staff er visitors w11! be disposed of in a safe manner.

Signag,e re: HSE cuidelines will be paced at the re levant points aroL1od the mart pre:mlses.

SALES OE_CAITLE

- Sale rooms/ rings will be closed.
- .ales go on line.

1) All poteotla.l sellers must first contac art and advise mart staff oft - typ e of stock to be sold. Sellers can advise mart staff cf the way they wish to hive their e.11ttle numbered and supply a1 co:ntild phone number.

2) Mart staff wm contact selleirs with ,a defined time at sta,ggered times to drop .off their stock. At all other times, ell rs will queue their vehldes on entry to the mart premises and r,ema·n in them at all times whilst on the mart premis s.

3) Sellers and buyer.; wlll be checked against the pre-approved list of attendees at the entrance

4) Every second loading bay will be used for unloading of stock to ensure social distancing.

5) Animal passports must be surrendered to mart staff and cheeked **prior** to unloading.

G M:art staff will checik the- ear tags **against** the passports in the fntake cattle dhute..

71,ReJecti:d anumals. wiH be refo:a,ded and returned to the farm oif.orig,in immedia.tE y.

8.1 All seUers will remain in their vehicles whfl:st their livestock .j:s unloaded *bv* mart staff 011,ty a,nd manoeuvre their vehicles as instructed by staff who will adllise them of prefer.red sales .se.quence/pairing etc.

9) All sellers mu.st vacate the mart premises after the unl'oadling of thelr livestock is complete.

10} Transport vehicles will be directed to the wash bay for cleaning and disinfection.

Ut Mart staff will pen the anlmails in accordance with seller instructions taken priotr to drop off.

12) Sellers wilil be ccmtacted directly via mobile phone when biddfng fs comprete.

13) All per ons on the mart pl.'le-mises must wear face covering/mask at all times

BUYER-S OF CATilE

1) All bUyers must first pre-register with the mart on the day prior a sale.

2) It will n.ot be permitted under any circumstances for buyers or sellers to congregate in the *c-a*r park or any part of the mairt premises.

3) Buyers will be required to sanft5se and use dispos,a•ble glov,es on entry to thie mart premises and will be advJsed of their arrivat ime onto the mart prem,ises.

4} Buyers wiill be alilowed view the a1111imals,ilt speclfied appointed imies in peins .a d must be alone.

5) Buyers wlll be limited to a maximum of 3 minutes per pen t-o view the animals for safe in the yard to comp'ly w·th social di5tancing.

6) Buyers will only be permitted to move in one direction while viewing lots in pens.

7) All persons on the mart premises must wear face cov ring/mask: at al. times

CAnlE SAUES RING

- ale rooms/ rings will be closed.
- On line sales to be implemented

SHEEP SALES

Sheep sa les will be subject to d1e Covid 19 HSE protocots ***as a*** ,**bave** plus the sales yard will be closed fur sellers aod buyers.

1. Sheep for sale *must* he pre-booked in adv;,nce and onlv Uiose on the approved list willbe admitted

2. Buyers must also be pre.booked and on the app,roved attentJance sheet

3. Buyers may view the sheep post weighlnE and tend er their prices

4. A list of those present will loe kept up to date by mart smff at all times

S. Sheep accompanied with their dispatch documen,ts wl'll fbe dropped off at the dedicated intake, weighed & handled by mart 51 aff only.
Sheep will be we"ghed by ma,rhtaff and allocated U'll!lr lot numbers

6. S:ell ers will be directed to the wash bay fer cleaning and disinfec-tio.n of ,transport velhic:les

7. Sheep buyers will submit tenders for sheep lots **and** sales wllll be allocated by mart management

neral

1) Mart staffwlll faditate the loading of all stock onto lbuyer's tram,port andi will observe social distanclog from them on receivlns any mart pass outs

2} Animal health and welfare regulations will be observed at allU!ines

3) Tfclruport vehides will be directed to th!! wa5h ba.y for clean'ing and di nfectlan aft er to unloadlng or prior to loading

All pet:Sons on th mart premises must wear face covering/mask at all times

Mart management are respcnslble for l!nplementatloo of thii.S prot ocat as suhrnltted **;i,nd appro ved bypAF.M**

gned: [redacted]

[redacted]

MART MANAGER

[redacted]

[redacted]

An Roinn Talmhaiochta,
Bfaagu Mara
Department of A,gricultute,
food and the Marine

31, 61 **March 2020**

For the attentio of livestock marts managers

Dear **Mart** Manager,

Govemmeng uidel.ines published on Saturday, 28 1h March 2020, identify essentia'l services that can oontinue to operate durlrig fhe current pliase of COVID 19 controls. These lndude sefVices provided *in* fhe ag riculture sector, involving farmers, farm labourers, farm relief service work er.s, and others involved dir:ectl'y *or* indirectly in crop and animal producllon and related actMUes {including veterinary services).

Normal mart auction acti.vily cannot resume until further flotice. However, mart managers ma;i consider some services to be essential and to comply with the Government guidelines. Wiilhin that overall framework, and assuming that employers are a position to fully respe-ct HSE guidelines in relation to physical distancing and other measures, it may be possible for mart owners to use their systems and faciliUes to put in place alternative trade facilitation mechanisms that would support the orderly sale of animals necessary to support the essentla:i business oHarming,. This incl1udes where the movement of animals is essential and in particular to maintain the food supply chain and protect the health and welfare of animals.

In thls context, two types of activities seem possible, provided they are essential ancl minimise the potential for wntact between people:

1. For calve.s, a se:rvloe whereby a farmer can deliver calves to the mart, by appointment, so that orders for purchase can be matched and facilitated via U.e mart.
2. For older l!vestocl<., a we lghing s,ervice for lots of cattle/sheep, by appointment., with the mart facilitating the transaction between a buye,r and a se!ler.

Other .activities, including onllne and other uses of new techno logy can of course also be considered,.

Marts play a central role in the orderly movement. trac•eabi'lity and sale of animals that is, essential in securing mod supplies, whilst ens1.1rir19 farmers receive a fair market price for their animals. Whilst no one measure can ,replace a public aucUon at a mart, it is hoped ttiat the above measures, in a tightly controlled manner in 'full oomp'liance with HSE guidelines in relation t.o hygiene and physical distancing, wm allow marts to help facllitate the necessary movement and trade in animals nan orderly altemativ,e manner.

If you wish to engag,e in the above aciivittes you must submit a detai!ed written Standard Operating P,ocedure (SOP) to fhe Senior Veterinary Inspec,tor (SVI) in your local Regional Veterinary Office. Please cc rulh.murphy@agrkulture.gov.ie on your email to the SVL

The SOP should set out how you propose to operate, and in particular the measures you will put in place to ensure that:

- only lhe minimum number of staff necessary for the safe running of operations are present at any one time in the marts - ordinarily ltiere seems little reason that this need to involve more than 3 or 4 people
- only the minimum number of clients are present in the mart premises at any one time (This will llkely involve phone contact, individual appointmen times being aillocated to sellers to drop off cattle and individual appointment times being alllocated to indlvldual buyers to view/collect cattle arid the seller and buyer attending on their own,witha'ut being accompanied by any other persons;
- physical distancing measures in compliance with HSI: guidel.ines will be ensulBd;
- appropriate hygiene measures to minimise the risk of COV'ID 19 transmlssion will be In place.

Unrn you have written oonfinnation from the SVI that your SOP is satisfactory you should not resume any activities in the mart premises.

The above will be lkept under review and furttier guldance will issue as necessary.

'Please also note that. export assembly centre opera1iol'ls in marts can continue .subject to normal rules.

The email contact details for the regional SVIs.are as follows:

[redacted]

Yours sincerely,

Welfare Division

X:XXX)q_MART ST. ARD OPERATING PROCEDURE: CA.. .E

Procedure for assembly and forward movement of cattle: in .compliance I>lith COVID19 restrictions in place in reland.

XXXXX Mai:-1 management wiU ensure the protection of the health & we11being of all peop]e on the mart prem1ses.

We will co-operate fuHy with the HSE guidelines relating to COVID19 in force at a given time, and th Department of Agri.culture guide1lines regarding the limited operation of livestock marts during the COVID19 restrictions on auction ales at marts, in place since 25th March 2020.

Health screening/ PPE provision/Record keening:

- An people proposing to enter the mart premise for wot or business purposes will be asked to confin **that** they are in good health and complying with **'P/** HSE advice be.fore coming to the mart and told no t to attend if they are showing symptoms of COVID 9.
- 1loves & sarritising liquid will be provided to an people entering the mart.
- An attendance sheet of all persons who were on the mart premises on each day will be kept, to include the am /Address/Phone o/HerdNo or PPS No and time in/time out

Bpoking Procedure:

- Farmers who have cattle to sell will notify the mart by telephon with breed, sex, & age of anima]s. They will be requested to confum. that their herd is free to trade. The mart notifies the seller of the price per kilo on offer at the time. Onl.y when seller agrees to this price wHI animals be booked in.
- The mart ha made a list of farmers who have confirmed that they are free to trade and who are looking to buy cattle. They will be contacted with the pre agreed price per kilo on offer to the seller and they will only be confirmed as purchasers when theJ agree to this price per kilo,

Mart procedures.

- O:n arrival, the faimer wiU drop tbei:r c-ards into post bo.x provided. This area wiU be thoroughly cleaned and disinfected on a daily basi .
- A staff member will check the cards and enter them to DAFM AIM system. AIM compliance will be checked regarding herd .status/testing requiJ1ements etc
- AIM compliant animals will be che(lked prior to unloading for two tags and no homs by mart operative an if fully compliant, they will then be unloaded hy a member of staff.

- The animals are then weighed and the seller is asked to stand in. a designated space in the seating area of the ring to observe the weighing of his cattle. This area wHl be thoroughly cleaned and disinfected after ,e.acb day's activity..

- The cattle are then penned by a member of staff and await the ani.val of the purchaser.

- The purchaser pays the mart for bis animals, collects cards & a member of staff loads them.

  The mart have put in place a protective scre{}n to protect both parties in the office.

- Only mart staff will unload & load animals.

- o animals will remain on the mart premises ovemigbt.

Staff Management to mitigate against possibility of step down ofteams due to COVID 19 self-isolation/traci11g

- The mart have put **in** place 3 groups of staff who will operate separately on a particular day.

A. XXXXX. XXXXX. XXXXX
B. **X.XXXX, XXXXX, XXXX:X**
C. XXXXX, XXXXX, X:XXXX

Cleansing and Disinfoctfon Protocol.

- Full cleaning and disinfection o the mart premises and office space will take place after each days operations.
- These wi11 be document.ed·name at the o,ffice, along with invoices for appropriate antiviral disinfectants for use 1n the office and other areas contacted by people in the mart premises.

Signed:

_____

XXXXX
XXXXXX Mart Manager Date : 31" March 2020

_____

Approved by:

_____

Superintendi11g Veterinary Inspector
Regional Veterinary Office Date: