

The Subjective Experience of Drought: A Study in Rural Tasmania

Elysia Chase

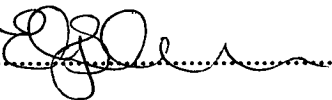
BA, BSc (Hons), MPsych (Clin)

Supervisor – Dr. Ali Maginness

**A report submitted as a partial requirement for the degree of Master of Psychology
(Clinical) at the University of Tasmania, 2011.**

Statement of Sources

I declare that this thesis is my own work and that to the best of my knowledge and belief, it does not contain material which has been accepted for the award of any other higher degree or graduate diploma in any university.

A handwritten signature in black ink, consisting of stylized cursive letters, is written over a horizontal dotted line.

Acknowledgements

First and foremost I would like to acknowledge the participants of this study as without their time this research would not have been possible. I would also like to thank Dr. Ali Maginness for her indispensable guidance in the research process.

I would also like to thank the Governor for the Governor's Environmental Award. This scholarship and financial assistance made completion of this study a lot easier.

Finally I have a few personal mentions. I would like to thank Megan Waugh and Katy Ferguson for their counsel and support, and the many moments given to me to listen when I was feeling overwhelmed. I thank Dr. Bryce Lockhart-Gillett for being a great house-mate and friend, for the many cups of tea, and for giving me his time whenever it was needed. I thank my friends abroad such as Leanne Stewart and Amy Knell for keeping me entertained and offering welcome respite. I thank my family for their support from a distance, and the swing dancing community for the many dances and laughs over the past couple of years. You have all kept me afloat when I felt I was sinking and helped make this a memorable and positive experience.

Table of contents

Statement of Sources	ii
Acknowledgements	iii
Table of contents	iv
List of Tables and Figures	vi
<i>List of Tables</i>	<i>vi</i>
<i>List of Figures</i>	<i>vii</i>
Abstract	2
Introduction	Error! Bookmark not defined.
<i>Constructs that Assist in Understanding the Experience of Climate Change</i>	5
<i>Stress and coping</i>	5
<i>Solastalgia</i>	6
<i>Demoralisation.</i>	7
<i>Positive Responses to Drought and Climate Change</i>	7
<i>Resilience.</i>	7
<i>Hardiness.</i>	10
<i>Coping Styles</i>	11
<i>Positive Emotions in the Coping Process</i>	13
<i>Broaden-and-Build Theory</i>	15
<i>The Current Study</i>	16
Methodology	17
<i>Framework for the Current Study</i>	17
<i>Validity in Qualitative Research</i>	18
<i>Robustness of the Current Study</i>	20
Method	20
<i>Participants</i>	21
<i>Interviews</i>	23
<i>Questionnaire Booklet</i>	23
<i>Analysis</i>	26
Results	27
<i>Preparedness</i>	28
<i>Critical Awareness</i>	28
<i>Appraisal of Resources.</i>	29
<i>Comparison to Others</i>	31
<i>Understanding of Circumstances</i>	31
<i>Accessing Information</i>	32
	iv

Feeling Accountable and Responsible	33
<i>Having Reserves & Buffers.</i>	34
<i>Sustainable Practices</i>	34
<i>Proactivity</i>	35
<i>Positivity</i>	36
<i>Work-life balance</i>	37
<i>Optimism</i>	38
<i>Meaning and Purpose.</i>	39
<i>Compassion</i>	40
<i>Acceptance</i>	41
<i>Gratitude</i>	42
<i>Humour</i>	43
<i>Social support</i>	44
<i>Community</i>	45
<i>Collaboration</i>	46
<i>Reflective practice</i>	47
<i>Adaptability & Flexibility</i>	47
<i>Applying broad skill base</i>	49
<i>Calculated risk taking</i>	50
<i>Learning.</i>	50
<i>Sustained Effort and Little Reward</i>	52
<i>Tolerance of Unpredictability and Uncertainty</i>	53
<i>Solastalgia</i>	54
<i>Change – social resources</i>	54
<i>Visual reminders</i>	55
<i>Questionnaires</i>	56
 Discussion	 58
<i>Preparedness</i>	60
<i>Positivity</i>	61
<i>Social Connectedness</i>	64
<i>Reflective Practice</i>	65
<i>Perseverance</i>	67
<i>Solastalgia</i>	69
<i>Points of Consideration</i>	70
<i>Directions for Future Research</i>	74
<i>Summary</i>	74
 References	 76
 Appendices	 85

List of Tables and Figures

List of Tables

	9
Table 1: <i>Description of the features of the Sense of Coherence Model (Antonovsky, 1979, 1996; Lindstrom & Eriksson, 2005)</i>	10
Table 2: <i>Characteristics of Hardiness (Bigbee, 1985)</i>	14
Table 3: <i>Meaning Focussed Coping Strategies</i>	18
Table 4: <i>Validity Criteria for Qualitative Research</i>	21
Table 5: <i>Participant Characteristics</i>	23
Table 6: <i>Summary of Measures used in the Current Study</i>	27
Table 7: <i>Emergent Themes and Predominant Constituent Themes</i>	29
Table 8: <i>Quotations that Exemplify Critical Awareness – Appraisal of Resources</i>	30
Table 9: <i>Quotations that Exemplify Comparison to Others</i>	31
Table 10: <i>Quotations that Exemplify Critical Awareness – Understanding of circumstances</i>	32
Table 11: <i>Quotations that Exemplify Critical Awareness – Accessing information</i>	32
Table 12: <i>Quotations that Exemplify Critical Awareness - Feeling Accountable and Responsible</i>	33
Table 13: <i>Quotations that Exemplify Having Reserves & Buffers.</i>	34
Table 14: <i>Quotations that Exemplify Sustainable Practice</i>	35
Table 15: <i>Quotations that Exemplify Proactivity</i>	36
Table 16: <i>Quotations that Exemplify Work-Life Balance</i>	38
Table 17: <i>Quotations that Exemplify Optimism</i>	39
Table 18: <i>Quotations that Exemplify Meaning and Purpose</i>	40
Table 19: <i>Quotations that Exemplify Compassion</i>	41
Table 20: <i>Quotations that Exemplify Acceptance</i>	42
Table 21: <i>Quotations that Exemplify Gratitude</i>	43
Table 22: <i>Quotations that Exemplify Humour</i>	44
Table 23: <i>Quotations that Exemplify Social Support</i>	

Table 24: <i>Quotations that Exemplify Community</i>	45
Table 25: <i>Quotations that Exemplify Collaboration</i>	46
Table 26: <i>Quotations that Exemplify Adaptability & Flexibility</i>	47
Table 27: <i>Quotations that Exemplify Applying Broad Skill Base</i>	48
Table 28: <i>Quotations that Exemplify Calculated Risk Taking</i>	49
Table 29: <i>Quotations that Exemplify Learning</i>	50
Table 30: <i>Quotations that Exemplify Sustained Effort with Little Reward</i>	51
Table 31: <i>Quotations that Exemplify Tolerance of Unpredictability and Uncertainty</i>	53
Table 32: <i>Quotations that Exemplify Change – Social Resources</i>	54
Table 33: <i>Quotations that Exemplify Visual Reminders</i>	55
Table 34: <i>Participant Questionnaire Scores</i>	56
Table 35: <i>Validity Achievement in the Current Study</i>	72

List of Figures

Figure 1: <i>Coping in relation to the timing and certainty of a stressor from Schwarzer & Taubert (2002)</i>	12
Figure 2: <i>Revised coping model from Folkman (2008)</i>	13
Figure 3: <i>Visual Representation of Data in the Current Study</i>	58

The Subjective Experience of Drought: A Study in Rural Tasmania



“to think ‘all we need is a bit of rain’” – female farmer

Elysia Chase

Supervisor – Dr. Ali Maginness

Abstract

If climate change occurs as predicted, forecasts suggest more frequent and prolonged droughts in Australia. Farming populations, responsible for the supply of fresh food to the greater population, are often worst hit when these weather events occur. The current study looks at the construction and interpretation of drought and climate change in farmers through the midlands of Tasmania. A mixed method approach was used in the current study and a phenomenological scientific reduction to analyse the stories of 13 farmers. Six major themes emerged from the data including preparedness, positivity, social connectedness, reflective practice, perseverance and solastalgia. Preparedness relates to awareness of problem areas in drought and the preparation for these. Positivity covers aspects of experience relating to the living of life well and social connectedness relates to the role of and connection to other people and to the community more generally. Reflective practice relates to the learning from experience captured by ongoing assessments of the situation, application of skills and knowledge, and the development of new skills and knowledge where necessary in the face of drought. Perseverance involves sustained effort and little reward and tolerance of unpredictability and uncertainty and solastalgia is an experiential theme related to the noticing and response to change through drought and over time. Although distress is evident in the stories of farmers in the current study, emergent themes highlight a sense of strength, community, resilience and perseverance through drought.

Over the coming decades, climate change is predicted to introduce several significant changes to the social and physical environment in many parts of the world. Research on climate change suggests that a global warming is occurring and along with rising sea-level and changing weather patterns, the likelihood of drought and extreme weather events will continue to increase (Department of Climate change and Energy Efficiency, 2009; Nicolls & Collins, 2006). At a worldwide level, agriculture, food and farming is likely to be affected by the long-term changes, as well as by an increase in severity and frequency of extreme events such as drought, flooding, heatwaves, landslides and outbreaks of plant diseases and infestations. The financial, physical and social cost of these changes have been under investigation but as yet there has been little attention on the impact of climate change on mental health (Fritze, Blashki, Burke & Wiseman, 2008).

Examples of climate changes and extreme environmental effects in recent years have been evident in Australia. Unprecedented natural disasters have occurred, including the flooding in Queensland earlier this year and drought induced bushfires that raged through more than 400,000 hectares in Victoria in 2009. Historically Australia has also suffered from significant periods of drought, particularly evident recently in the more southern regions (Berry, et al., 2008), and emerging research related to drought suggests a negative impact on the health and well-being of those experiencing it (Bi & Paton, 2008; Caldwell & Boyd, 2009; Hegney et al., 2007; Satore, Kelly, Stain, Albrecht & Higginbotham, 2008). This is important as drought results in observable and distressing changes in landscape and lifestyle for those living in these areas, and has personal and social impacts on farmers and the wider community.

Satore and associates (2008) in a study on the impacts of drought, found that participants highlighted the importance of environment and weather on mood, preferring where possible to avoid visual reminders of the weather and the problems arising from drought. Regardless of climatic conditions, at a community level, well-being involves access to a range of social, business, health, community and family support services (Greenhill, Mildenhall & Rosenthal, 2009). Families in drought have expressed concern for the future of farming both within their families and as a profession as well as concern regarding the future of the local community. Closing businesses and families leaving the district were perceived to directly affect the community and the general mood, leading to a reduction in the social resources available to individuals in rural communities (Satore, et al., 2008).

Due to the nature of the work, farming families juggle business management and work with family life. These families often experiencing home and workplace as one in the same, and they consequently rely on agricultural productivity for their livelihood (Berry, et al., 2008; Bureau of Meteorology, 2009). Direct impacts on farmers included financial strain with associated feelings of uncertainty, responsibility, lack of control and changes to the family structure (Satore, et al., 2008). Farming families acknowledged that resources and information once shared became more highly guarded as the drought continued, highlighting a split within the community between those coping more effectively and those that weren't (Caldwell & Boyd, 2009; Satore, Kelly, Stain, Albrecht & Higginbotham, 2008). A conceptualisation of the distress experienced by individuals is yet to be addressed in the literature (Zamani, Gorgievski-Duijvesteijn & Zarafshani, 2006).

Constructs that Assist in Understanding the Experience of Climate Change

The limited studies on drought highlight the impact this has on mental health, suggesting that those living in drought conditions consequently suffer a degree of distress that requires further attention. Of the many constructs that come together to help explain the experience of drought and climate change, stress (and coping), solastalgia, and demoralisation are three constructs that could potentially help us to understand the impact of drought. The stress literature is drawn upon here to provide a backdrop to consider the experience of living through adversity. Solastalgia and demoralisation are relatively new concepts that have the potential to emerge as important considerations for future environmental health research. The three constructs are discussed in more detail below.

Stress and coping. Farmers report a perceived loss of resources and consequent distress, with a reduction in water, produce and finances through drought (Caldwell & Boyd, 2009; Hegney, et al, 2007; Zamani, Gorgievski-Duijvesteijn & Zarafshani, 2006). Lazarus and Folkman (1984) originally described psychological stress as a relationship between a person, their environment and resources. The experience of stress is where appraisal of demands is perceived as greater than resources. In these instances, the pressures on the person are considered to exceed the ability to cope. Coping is the ability for an individual to withstand the impact of stress by using strategies to manage distress and maintain wellness (Lazarus, 1993; Lazarus & Folkman, 1984). The role of appraisal helps in understanding individual and group differences in vulnerability and sensitivity to the type of events that result in psychological stress. More recently Lazarus (1993) suggests that stress is best

considered alongside emotion as this more informative than stress alone in describing how people respond to adversity and in life in general.

Higher levels of distress are a common experience for farming families through drought (Satore, et al., 2008). Given that stress is a relationship between an individual, their environment and the resources available, the chronic nature of drought may lead to an ongoing and cumulative demand on resources and consequent reduction in coping. The study by Satore and associates (2008) found that participants reported stress related changes such as increasing irritability, sleeplessness, feeling less hopeful and social as well as expressing concern at the further impacts of these on their experience of drought.

Solastalgia. Psychoterretic illness is a relatively new term referring to mental illness resulting from severed links to the environment and home. Albrecht (2005) suggests this might be a more accurate description of farmer's experience in drought. From this literature solastalgia has been coined to describe the sense of loss and the desire to regain a sense of comfort that used to be present. It refers to the distress caused from a lacking in comfort from the 'home' where one used to find such comfort (Albrecht, 2005; Albrecht, et al., 2007). The construct centres on the importance of environment to the health and wellbeing of those attached to it. The home here is considered to add to our sense of identity, providing not just a place to come back to but also to belong. It has been proposed that solastalgia can help explain the relationship between environmental change and the psychological distress that is the lived experience for farmers through extended drought (Albrecht, 2005, 2006; Albrecht, et al., 2007).

Demoralisation. In the current literature on drought, a degree of distress is common in most stories (Caldwell & Boyd, 2009; Satore, et al., 2008).

Demoralisation is characterised by a break down in coping, often involving experiences of helplessness, hopelessness and a sense of failure and has been linked with the desire to die (Clarke, Kissane, Truer & Smith, 2005). Individuals experience demoralisation when confronted with loss, or the belief of losing something critical to their sense of self (Clarke & Kissane, 2002). It is distinct from depression in that individuals can experience pleasure in the current moment, however, lack hope for the future (Clarke & Kissane, 2002). When individuals are demoralised they are likely to experience pathological symptoms in the areas of subjective competence, mood, hope, not knowing what to do, and feeling that they are trapped in the current circumstances.

There is no direct research linking solastalgia and demoralisation in a rural setting, however these constructs might help to explain the distress experienced in rural populations when faced with experiences such as those produced in extended periods of drought. In both solastalgia and demoralisation, coping mechanisms appear to be insufficient to prevent the experience of distress.

Positive Responses to Drought and Climate Change

The strategies that people adopt to cope with a stressor directly impact the experience of that stress. Several models that have emerged from the realm of positive psychology illustrate positive coping responses to extended periods of stress, such as that experienced by farmers in drought.

Resilience. It is evident through the literature arising in relation to drought, that although there is evidence of a degree of hardship and distress, individuals

continue to work through and recover from drought (Caldwell & Boyd, 2009; Dean & Stain, 2007; Hegney, et al., 2007). Resilience focuses on the 'bouncing back' following adversity and the factors that maintain wellness (Hegney et al., 2007; Luthar & Cicchetti, 2000). Research into resilience is broad and ever-growing, covering a range of areas such as developmental psychology, personality, and most importantly, coping in the face of adversity. Considering all of the different domains, resilience is often considered an umbrella term, referring to the ability to confront and manage difficulties as well as the ability to recover and even grow from these.

Research into resilience has tended to consider it as a process or a resource, suggesting that it is a multidimensional construct with a number of facets and the potential to change across domain and time (Connor & Davidson, 2003; Leipold & Greve, 2009; Luthar & Cicchetti, 2000; Trigg, 2007). It is not considered exceptional but rather a quality that appears to be more like the norm when confronted with degrees of adversity (Roisman, 2005; Seery, Holman & Silver, 2010). In light of this, resilience in terms of drought can be applied as a broader construct drawing on multileveled components such as individual experiences and practices, the relationships people have with the environment and the community, as well as more general references to the recovery process following drought.

Resilience, and its definition in rural communities in drought, has been investigated during the latest series of droughts through Australia. A study by Hegney and associates (2007) looking at resilience in rural people in Queensland noted that resourcefulness, accepting and embracing change, flexibility, adaptability, positivity, being proactive, innovative, hardworking, and seeking advice and help when necessary were all aspects of resilience in rural people. Beyond this, the surrounding environment was highlighted as an important factor in resilience,

particularly the connection with the land and a sense of community. Collegueship through the community during drought, connection to place and lifestyle, sense of belonging and connectedness, belief in the ability to cope, and community participation were noted in a study by Dean and Stain (2007) as potential resilience building factors.

Sense of Coherence. Antonovsky coined the term salutogenesis in response to observations that not all people were able to make use of the resources available to them (Antonovsky, 1979). He noted that stress is ubiquitous but that the impacts on individuals vary widely and not everyone is negatively impacted. The term was developed to research and understand how people stay well and manage stress, as opposed to the research of the time focussed on deficiencies and problems (Becker, Glascoff & Felts, 2010; Lindstrom & Erikson, 2006). He identified conditions that were necessary for someone to make sense of their life and environment called these general resistance resources (GRRs), and included psychosocial, biological and material factors. He proposed that GRRs help an individual construct a coherent view of the world by enabling the person to manage challenges that confront them in daily life (Lindstrom & Erikson, 2006). Sense of coherence is considered to be a global personality disposition in which an individual perceives problems and life experiences as meaningful, manageable and comprehensible (Antonovsky, 1979).

The following table describes the aspects of the Sense of Coherence model that together result in a person making sense of and work with the problems in their lives (Antonovsky, 1979; 1996; Lindstrom & Eriksson, 2005).

Table 1: *Description of the Features of the Sense of Coherence Model (Antonovsky, 1979, 1996; Lindstrom & Eriksson, 2005)*

Feature	Description
Meaningfulness	The motivational component. Summarised by the extent to which life emotionally makes sense to a person, turning life struggles into challenges worthy of engagement and commitment.
Manageability	The degree to which an individual feels that they have the necessary resources to effectively deal with problems.
Comprehensibility	The cognitive component to the model. The degree to which a person sees the problem and finds it predictable, consistent, ordered and clear.

For farmers who often have work and home closely intertwined, sense of coherence might help to explain why some farmers find it easier to ride through the stressors of drought.

Hardiness. Similar to sense of coherence is the construct of hardiness.

Hardiness is considered a personality disposition that promotes health and helps people make sense of their environment (Bigbee, 1985; Kobasa, 1979; Maddi & Kobasa, 1984). It is characterised by three components, control, commitment and challenge summarised in Table 3 below (Bigbee, 1985; Maddi & Kobasa, 1984).

Research on hardiness indicates that hardy individuals are better able to use social support and problem-focussed coping (problem-focussed coping is discussed in more detail below), minimising the experience of distress (Bonnano, 2004; Maddi, 2002).

Hardiness is another potentially useful construct in the management of environmental stressors by farming populations.

Table 2: *Characteristics of Hardiness (Bigbee, 1985)*

Characteristic	Description
----------------	-------------

Control	Belief that one can influence or control stressors through personal efforts, making these stressors more manageable.
Commitment	Similar to SOC meaningfulness. Belief that one is involved rather than estranged. This is relative to others, self and one's experience.
Challenge	Belief that change is an opportunity for growth and development, rather than a threat.

Coping Styles. Coping strategies can be considered to have at least two functions, 'problem focussed' and 'emotional focussed' functions (Clarke & Kissane, 2002; Folkman & Lazarus, 1980; Lazarus, 1993; Lazarus & Folkman, 1984).

Problem-focussed coping aims to reduce stressors through action and is an approach adopted when something constructive can be done to help the situation (Folkman & Lazarus, 1980; Lazarus, 1993). Accessing information, making changes to property and stock management, along with other strategies aimed at actively trying to change their position in drought were commonly mentioned (Caldwell & Boyd, 2009; Satore, et al., 2008). Emotion-focussed coping entails either reconsidering the meaning of the event to mitigate the distress from it; or changing the way that the stress is attended to. Emotional-focussed coping approaches of social support seeking, positive appraisal, optimism, using humour, denial and avoidance, were reported in existing drought research, enabling farmers to limit the influence of the drought on their well-being (Caldwell & Boyd, 2009; Satore, et al., 2008).

Individual's appraisal and perception of the drought and climate change has the potential to influence their responses and ability to cope with the stress that is associated with drought.

Proactive Coping. Proactive coping is a concept arising from literature on the Conservation of Resources (COR) theory of stress. COR theory posits that people

seek to build and maintain resources and when there is either a threat of the loss of resources; a net loss of resources; or a lack of resource gain following input people become vulnerable to debilitated functioning and distress (Hobfall, 1988, 1989, 2002). The temporal relationship between the different types of coping styles is depicted visually in Figure 1 on the following page.

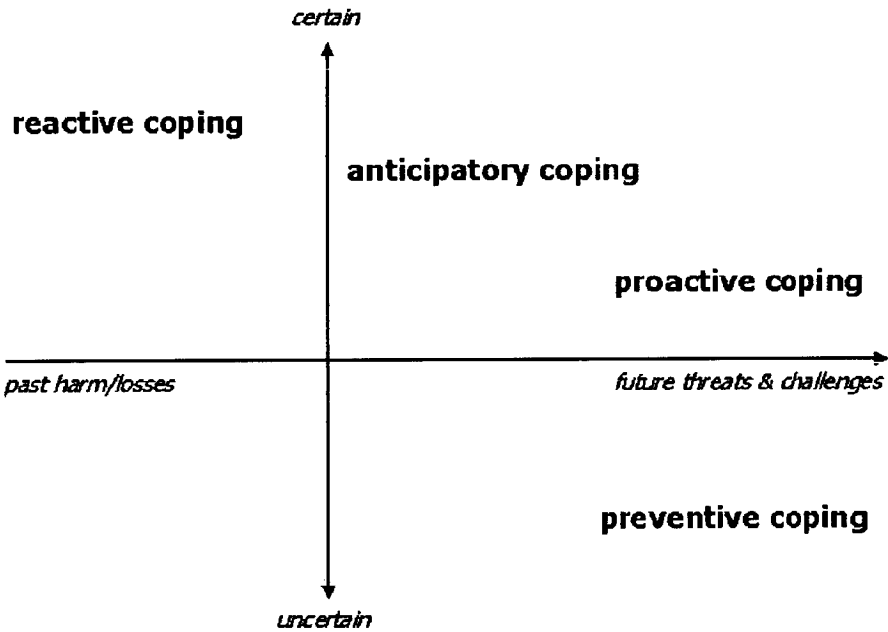


Figure 1: *Coping in relation to the timing and certainty of a stressor from Schwarzer & Taubert (2002).*

Proactive coping according to this model is the general building of resources to promote personal growth and to achieve challenging goals. People that participate in proactive coping see demands, risks and opportunities however appraise these as challenges. They initiate early opportunities for development and growth that later facilitate the mitigation of and reduction in stress (Aspinwall & Taylor, 1997; Schwarzer & Luszczynska, 2008). According to this model anticipatory coping is considered as the efforts to deal with a threat that is likely to occur in the near future. This can include problem solving strategies and the gathering of resources such as information to better address the situation as it draws near. Preventative coping

involves actions that result in a reduction in stressful events and preparation just in case a situation arises.

Theoretically these coping approaches play an important role in the experience of a stressful event, however stress and coping research in this area is limited. These coping approaches are harder to capture in research due to the fact that they precede a stressful event. They remain important constructs in the understanding of stress and coping with drought as they can play a large role in the mitigation of distress experienced by such events, and may help to explain how some farmers do better than others through drought.

Positive Emotions in the Coping Process. A revised model of stress and coping exploring positive coping was recently introduced by Folkman (2008). This model takes into account the role of positive emotions in the stress process. Initially the model posited that when the event outcome is unfavourable, the appraisal-coping-outcome-emotion process repeats itself resulting in conditions of chronic stress. The revised model as pictured below suggests that where attempts at resolution have failed, trying again can result in meaning focussed coping. Meaning focussed coping can result in positive emotions, providing relief from distress and restoring resources and motivating sustained coping.

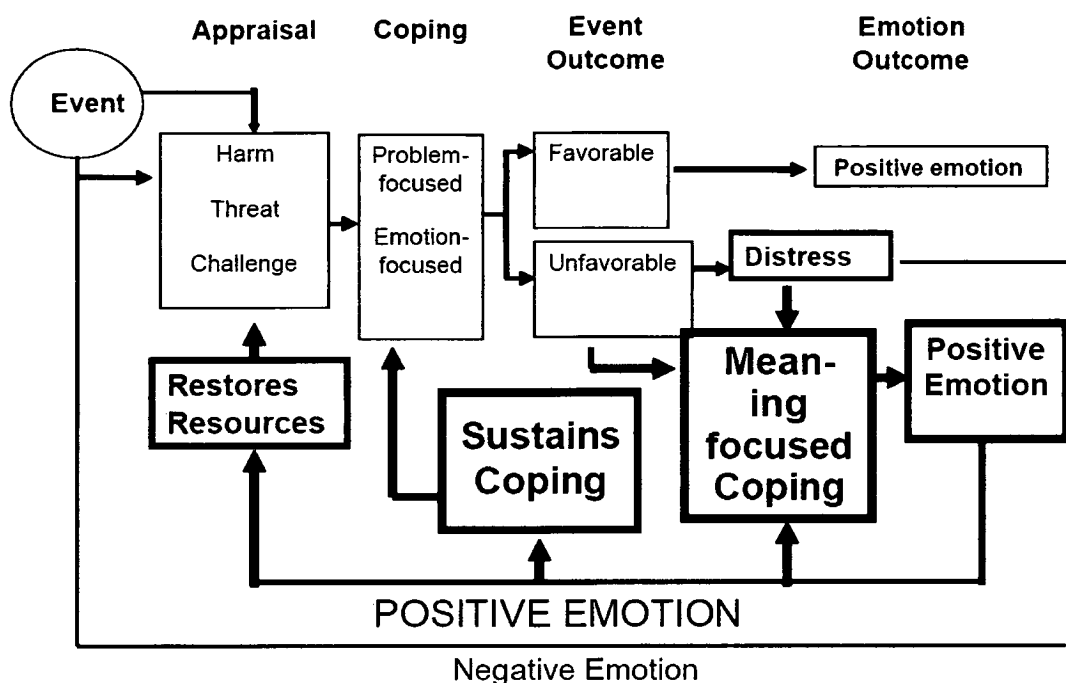


Figure 2: Revised coping model from Folkman (2008: 6)

Meaning focused coping refers to coping that draws on values, beliefs and existential goals to appraise the situation in a way that facilitates sustained coping and wellbeing. There are currently five categories of meaning focussed coping that have been considered and these are described in Table 3 below. These include benefit finding, benefit reminding, adaptive goal processes, reordering priorities, and infusing ordinary events with positive meaning (Folkman, 2008; Folkman & Moskowitz, 2007). The revised stress model introduces meaning focussed coping and highlights the importance of both negative and positive emotion when exploring the experience of stress. With this in mind, exploring the subjective experience of drought by farmers might help to understand the full picture of how they are coping.

Table 3: *Meaning Focussed Coping Strategies*

Meaning focussed coping strategy	Description
Benefit finding	Attribution of positive meaning to the negative event, such as strengthened faith

	or greater appreciation of life.
Benefit reminding	Reminding oneself of the positive aspects of the experience.
Adaptive goal processes	Reminding oneself of aims goals to overcome obstacles and where necessary, the relinquishment of goals no longer plausible and the replacement of these with realistic and meaningful new goals.
Reordering of priorities	Priorities more highly valued are moved up in priority, and those less are moved down.
Infusing events with positive meaning	The process where one creates positive moments in everyday events

Broaden-and-Build Theory. Another model that has been put forward regarding the role of positive emotions is the Broaden and Build Theory by Fredrickson (1998, 2001). Positive emotions are considered to initiate a cycle of more positive emotion through the broadening of habitual models of acting and thinking and through the building of personal resources. For example, curiosity and interest lead to the exploration of novel, varied and exploratory actions and thoughts, which in turn might help the person recognise new possibilities in future. This is in contrast to negative emotions that have immediate and narrow survival benefits in life threatening situations. Unlike negative emotions, positive emotions do not carry immediate survival benefits, but over time can facilitate the development of new skills, capabilities, networks and resources, and in turn result in enhanced survival. Positive emotions are considered to have many positive influences on an individual, such as the broadening of the action-thought repertoire and building of resources as mentioned above, remedying the after effects of negative emotions, promoting psychological and physical wellbeing as well as enhancing psychological resiliency (Fredrickson, 2004). Given that some farmers do well despite drought it is possible

that positive emotion plays an important role in extended coping and management of drought for these farmers (Satore, et al., 2008; Hegney, et al., 2007).

Climate change is predicted to result in a number of insidious global changes over time. To understand the impact of these changes, a context more tangible, such as drought, is required. Literature from the stress and coping research offers frameworks that might help to understanding the negative responses as well the ability for people to adapt and grow in the face of uncertainty and change. The personal experience of drought is one such way to explore the personal nuances in understanding and managing these changes. Where coping mechanisms and resources are insufficient to manage the experience, distress is likely to result. Demoralisation and solastalgia are constructs that might encapsulate this distress. It is evident however, that there are people that continue to do well despite the stressors involved with drought and climate change. Although stress and coping research is comprehensive and encompassing, its application to environmental hazard research, and in particular, prolonged conditions such as drought, is more limited.

The Current Study

The Tasmanian Midlands region, declared in drought under exceptional circumstances until 2009 (Department of Agriculture, Fisheries and Forestry, 2009), has experienced drought conditions that have been considered prolonged and intense (White, 2000). It is understood that drought increases stress on this population with potential contribution to reduced economic status, rural depopulation, and the way people work together as colleagues, friends, and neighbours (Albrecht, et al., 2007; Berry, et al., 2009; Horton, Hanna & Kelly, 2010). Among other areas there is a lack of research looking at the lived experience of drought and what this might mean with

regard to the above factors. An exploratory study is necessary to determine the emergent themes and associated theoretical frameworks that best encapsulate the experience of drought for farmers in rural Tasmania.

Methodology

Framework for the Current Study

Psychological research has historically been based in a positivistic framework. Within this framework there is a single 'real world' within which events of interest take place. Central is the idea that only observed events or testable propositions can show true representations of that reality and that the world can be described in terms of measurable variables which can interact with each other in determinant ways. From this perspective, the purpose of science is to design experimental situations so that psychological processes can be revealed and therefore modelled, showing how variables interrelate and thus highlighting cause and effect relationships (Smith, 2008). Quantitative approaches work on these premises and studies are designed to test hypotheses surrounding the relationships between variables. To achieve this quantitative approaches aim to minimise sources of error, designing and constructing an environment prior to commencing research to limit variables and obtain accurate observations. Quantitative approaches endeavour to produce replicable findings and provide generalisations about population trends through broad sampling and statistical analysis. Unfortunately such approaches can ignore ideography and disregard the 'first person perspective' in the aims of achieving objectivity.

Qualitative approaches on the other hand are more emergent and information arises through the research itself. Individual stories are valued with vested interest in

the effect of context on individual differences. Qualitative approaches intensively study a small number of cases to examine the interactive processes occurring in particular contexts. Researchers aim to achieve what is 'logical' or 'theoretical' using reiterative procedures, with the hope that outcomes from one study prove useful in other contexts that share similarities. It is acknowledged in qualitative research that the researcher influences the outcomes of the study by choosing the research question, measures, involvement in the interview process and through the interpretation of findings. Attempts to eliminate researcher influences would make it difficult to maintain the benefits of qualitative research, such as the analysis of the hidden meanings in talk or the use of interviews to reveal subjective experience. Instead qualitative research aims to draw on the benefits of active engagement with participants in the study, allowing participants to influence the data while also considering how the researcher may have influenced any findings.

Validity in Qualitative Research

The validity of any research involves making judgement regarding the trustworthiness and usefulness of the findings, as well as the quality of the research that has been carried out (Smith, 2008). Given that psychology research has historically been quantitatively oriented, a common misconception is the assumption that qualitative research should be judged under the same criteria for validity. As described above, qualitative research is quite different from quantitative approaches and consequently requires a different model for assessing validity. One such model is presented by Smith (2008) which highlights four main areas that need to be considered for a qualitative study to obtain validity. These include sensitivity to

context, commitment and rigour, coherence and transparency, and impact and importance which are described in more detail in Table 4 below.

Table 4: *Validity Criteria for Qualitative Research*

Validity Criteria	Requirements to be met
Sensitivity to Context	Formulation of a research question not yet addressed Clarification of what is already known by research and theory. Sensitivity with participants through choice of how and where data is given.
Commitment & Rigour	Purposeful sampling of participants to include a variety In depth engagement with the topic Depth and breadth of analysis
Coherence & Transparency	Detailed description of the process of analysis, as well as data presentation Researcher reflexivity

Table 4 continued

Validity criteria	Requirements to be met
<i>Coherence & Transparency cont.</i>	Fit between method and theory
Impact & Importance	Demonstrated through: practical and applied nature of the research, the resulting structures and relationships that are established and their influence on experience the theoretical and socio-cultural relevance of the research

Robustness of the Current Study

Triangulation is a strategy frequently embraced within qualitative research to enhance the robustness of the research process. Triangulation aims to corroborate the accounts of one person or group using various sources of information. In this study, two approaches were used in the triangulation of data, the first asking participants to talk about their experience of the drought, and the second asking participants to complete questionnaires measuring specific constructs believed to be important. In addition to this, interpersonal comparisons of participants' descriptions were drawn into the data analysis. While one participant offers a rich source of information, this is further validated by concurrent similar descriptions of experience by other participants.

Reliability issues were also addressed through supervision of the researcher's coding. A researcher experienced in phenomenological research reviewed a random selection of coded transcripts to ensure congruence in identified meaning units and in the emerging themes from the transcript. This process was furthered by subsequent reviews of themes and their content through on-going supervision.

Method

The current study looked at the construction and interpretation of drought and climate change in farmers through the midlands of Tasmania. A mixed method approach was selected utilising interviews to capture subjective experience of drought, but also drawing on predefined variables through the use of specific measures to better link the research to current research in the field of stress and coping. The qualitative component adopted phenomenology as the method of choice. This aimed to understand the lived experience of the person through exploring the

rich context of personal stories and descriptions. From these the psychological meaning can be drawn out of everyday experience to build on what is understood about the phenomenon in question. Even though it is assumed that each person's situation and experience is different, the various stories become the basis for higher-level invariable relationships between farmers and drought in order to account for the phenomenon of coping with and the recovery from drought. A combination of interview and brief assessment measures enrich the data for individual cases but also allow for validity checks to be incorporated in the research process.

Participants

Ethics approval, sought from the University of Tasmania Human Research Ethics Committee, was obtained prior to the commencement of the study (refer to appendix A). Participants were recruited through purposeful sampling of farm owners through the rural community in the Midlands region of Tasmania. Initial participants were obtained from a local council meeting whereby they volunteered their interest. Following participants were gathered through word of mouth from those already in the study. Following the receipt of potential participant's details, these farmers were then phoned to ensure their appropriateness for the current study. A further eleven participants were recruited to total eleven male and two female participants between the ages of 25 to 65 years of age. Saturation of data was achieved from each participant during the interview process and at thirteen participants so no further interviews were conducted. As shown in Table 5, participants were farm owners and varied between first and fourth generation farmers.

Table 5: *Participant Characteristics*

Participant	Gender	Age bracket	Status	Generation farmer
A	M	30-40	Single	3rd
B	M	30-40	Coupled	4th
C	F	60-70	Coupled	1st
D	M	60-70	Single	2nd
E	M	20-30	Single	3rd
F	M	20-30	Coupled	2nd
G	M	20-30	Single	2nd
H	F	60-70	Coupled	1st
I	M	50-60	Single	3rd
J	M	40-50	Coupled	2nd
K	M	60-70	Coupled	2nd
L	M	30-40	Coupled	3rd
M	M	30-40	Coupled	4th

* Age has been reported generally to maintain confidentiality

Of these farmers, four discussed their situation in the presence of a significant other, creating two coupled interviews (husband and wife, son and father).

Experience with drought, being involved in the running of a farm, and being able to discuss the experience reasonably articulately were the only criteria for selecting participants. Once a participant registered their interest in the study they were phoned to discuss the study and a consent form and information sheet was posted to them (Refer to Appendix B for a copy of the consent form and Appendix C for the information sheet). An interview time was scheduled by telephone.

Interviews

Participants were asked to describe their experience of farming through drought. The request made of the participants, after a general introduction about the purpose of the research was this: “Tell me what drought means to you”. Further prompts were then used to encourage participants to reflect on and elaborate their accounts. These included questions about how drought impacted work, relationships and community and what made coping with drought easier. Following this the participants appraisal of climate change was discussed to explore how drought was considered in a broader context by asking “What is your perception of climate change” (Refer to Appendix D for interview schedule). All interviews were approximately one hour long, and were recorded and transcribed verbatim.

Questionnaire Booklet

Self-report measures in the format of a questionnaire package (refer to Appendix E for a copy of the interview package) were given to participants to complete following the interview. Self report measures assess resilience; demoralisation; approach to life; and depression, anxiety and stress. The measures were selected due to their relevance to stress and coping with drought and potential insightfulness as constructs in relation to the experience of drought. The measures have been used in the stress and coping literature and have reported sound reliability and validity, as shown in the following table.

Table 6: *Summary of Measures used in the Current Study*

Psychological construct	Measure	Reliability	Description	Scoring
Resilience	Connor-Davidson's Resilience Scale (CD-RISC; Connor & Davidson, 2003)	Chronbach's α 0.89 (Connor & Davidson, 2003; Yu & Zhang, 2007)	Participants answer 25 positively worded items on a 5-point likert scale (0 = not true at all, 4 = true nearly all of the time) regarding how they describe themselves generally. The scale assesses resilience as a general (e.g. "I can deal with whatever comes my way").	Range = 0-100 Higher scores reflect greater resilience.
Demoralisation	The Demoralisation Scale (DS: Kissane et al., 2004)	Chronbach's α 0.71-0.94 (Clark, et al., 2005; Mullane, Dooley, Tiernan & Bates, 2009)	The scale contains 24 items with responses on a 5 point likert scale (0 = never, 4 = all the time) assessing expression of existential despair such as a growing sense of disheartenment, irritability, and guilt, or regret that can lead to hopelessness, helplessness and isolation. There are 5 positively worded (e.g. "There is a lot of value in what I can offer others") and 19 negatively worded items (e.g. "My life seems to be pointless"). There are 4 subscales, Loss of meaning (e.g. "Life is no longer worth living"), Dysphoria (e.g. "I am angry about a lot of things"), Disheartenment (e.g. "I feel trapped by what has happened to me") and Sense of failure (e.g. "I am proud of my accomplishments"-reversed).	Range = 0-96 Loss of meaning = 0-20. Dysphoria = 0-20. Disheartenment = 0-20. Helplessness = 0-16 Sense of failure = 0-16 Reverse scoring for items 1, 6, 12, 17 & 19. Higher scores reflect greater demoralisation

Table 6 continued

Psychological construct	Measure	Reliability	Description	Scoring
Depression, Anxiety and Stress	Depression, Anxiety and Stress Scale: Short form (DASS 21: Lovibond & Lovibond, 1995)	Chronbach's α 0.82-0.93 (Henry & Crawford, 2005; Antony, Beiling, Cox, Enns & Swinson, 1998)	Participants rate their agreement on 21 negatively worded items on a 4 point likert scale (0 = "Did not apply to me at all", 3 = "Applied to me very much, or most of the time") related to symptoms of depression, anxiety and stress. There are three subscales in the DASS, Depression (e.g. "I couldn't seem to experience any positive feeling at all"), Anxiety (e.g. "I had feelings of faintness") and Stress (e.g. " I found myself getting upset over trivial things").	Range: Depression = 0-42 Anxiety = 0-40 Stress = 0-42 Higher scores indicate a greater experience of symptoms of depression, anxiety and stress.
Orientation to life	Sense of Coherence (SOC 13: Antonovsky, 1993)	Chronbach's α 0.7-0.93 (Eriksson & Lindstrom, 2005; Frenz, Carey & Jorgensen, 1993)	Participants answer 13 questions on a 5-point likert Scale. Items are negatively phrased with answer descriptions written to suit the question. (e.g. Do you have the feeling that you're being treated unfairly?", 1 = very often, 5 = Very seldom or never; "Has it happened that people whom you counted on disappointed you?", 1 = Never happened, 2 = Always happens).	Range = 13-65 Higher scores indicate a view of life's problems as meaningful, manageable and comprehensible.

Analysis

The first stage of analysis involved reading each transcript and identifying 'meaning units', which are words, phrases or statements that were concerned with the nature of the phenomenon. These units were then transformed into a description, drawing out the explicit in respect to psychological meaning. This process enables the units to be generalised to be less situation specific and more psychologically sensitive (refer to Appendix F for visual example of the process of transforming meaning units from one case into organised clusters of information). Once this was completed for each interview, transcriptions were then coded into NVivo resulting in 102 free nodes. These nodes were then given a second pass coding, grouping nodes together that presented with similar themes, for example free nodes such as 'appraisal of finances', 'appraisal of stock feed', 'feeling responsible and accountable' were grouped under the tree node of 'critical awareness' (refer to Appendix G for visual example of the process of integrating free nodes into tree-node hierarchical structures and major themes). This process resulted in an emergent hierarchical representation of the data. Initially themes were considered through a dichotometric division of participants based on responses to questionnaires and the scoring of resilience and demoralisation scales, however this did not add to the thematic structures presenting from the data and was abandoned prior to further analysis. Data was reviewed and condensed numerous times through a reiterative process using NVivo. This program was also used to organise and group tree nodes and integrate themes in order to produce a model of the structures that best captures the essence of the phenomenon presented by the information gathered. Several models of presentation were considered before the final organisation of material was

generated. The final model was found to be the best fit in terms of the breadth and depth of the model and its explanatory power.

Results

While the different experiences of drought could be artificially separated according to scores on questionnaires, it was considered more appropriate to consider stories individually in the phenomenological reduction. Following the reiterative analysis process six major themes presented in the data. These major themes along with the prominent constituent themes are listed in the table on the following page. A complete list of themes along with the number of sources and references for each can be viewed in Appendix H. Major themes are presented from most prominent to least (left to right), and constituent themes are listed similarly under each major theme (top to bottom). These themes and their facets are depicted in Appendix I and are described in the sections that follow.

Table 7: *Emergent Themes and Predominant Constituent Themes*

Main Theme	Preparedness	Positivity	Social Connectedness	Reflective Practice	Perseverance	Solastalgia
Constituent Theme	Critical Awareness	Work – Life Balance	Social Support	Adaptability & Flexibility	Sustained Focus with Little Reward	Change – Social Resources
	Reserves & Buffers	Optimism	Community	Calculated Risk Taking	Tolerance of Unpredictability and Uncertainty	Visual Reminders
	Sustainable Practice	Meaning & Purpose	Collaboration	Learning		
	Proactivity	Compassion		Applying Broad Skill Base		
		Acceptance				
		Gratitude				
		Humour				

Preparedness

You never know what's around the corner - Male farmer.

This quote arose in the midst of discussion around being prepared. Preparedness here involves aspects of the farming experience related to the awareness of potential problem areas and preparation for these. Preparation for current drought and planning for future events emerged as the most prominent theme in the current study. Discussed in more detail below are critical awareness, having reserves and buffers, sustainable farming, and being proactive that constitute this theme.

Critical Awareness. In the current study, critical awareness emerged as the largest theme and has been divided into sections for ease of presentation. These include appraisal of resources, comparison to others, understanding of circumstances,

accessing of information, and feeling of responsibility and accountability. Each of these is discussed further in the following section.

Appraisal of Resources. This aspect of critical awareness involves the appraisal of resources necessary for the functioning of a farm as a business during and following drought. Appraisals of water, stock, feed and finances were ubiquitous across all participants and financial resources were often discussed as the limiting resource. This is illustrated by the statement below

If you got the money you can feed stock and water stock all you like. If you got the money and resources. But usually during the drought you're pinched for money. And that's probably one of the things that starts to drive people into stress and depression I guess.

- male farmer

The importance of these resources, resource unavailability in drought, the finite nature of resources, the expense of resources in drought, time expended due to the lack of resources, and the process of recovery, expenses and the lack of income were facets of the appraisal of resources and are displayed in the table on the following page.

Table 8: *Quotations that Exemplify Critical Awareness – Appraisal of Resources*

Facet	Exemplary Quotations
Importance of resource	<p>“you gotta have water to feed stock and grow”</p> <p>“Water is becoming critical on farms. Not just stock water but water for crops. Gives you that assurity.”</p> <p>“If we hadn’t had that rain, my gosh, you know, and things weren’t looking as good as they were., things would be a lot different.”</p>
Unavailablability in drought	<p>“ you’re biggest problem in a long term drought is lack of dry matter... even all the tussocks just get eaten right down”.</p>
Limited	<p>“Even in the best situation you’ve only ever got grass for you know, 3 months probably.”</p>
Very expensive	<p>“there is money gone that will never be recouped. Money that spend on feeding livestock. You never actually get that back.”</p> <p>“ pouring money out onto the ground for the sheep”</p>
Time consuming	<p>“feeding’s the biggest time you know, killer during drought if you’re feeding.”</p>
Need to do more	<p>“ if we get another 3 year drought where we just, like we had, we’d be able to irrigate as normal on all our irrigation area. But, that doesn’t drought-proof a farm.”</p>
Still recovering	<p>“we aren’t out of it, ‘cos we gotta wait about 3 years now to get that stock numbers to breed up stock numbers. Back up to where we were.”</p> <p>“You know we're not out the drought for a long time, financially.”</p> <p>“I’ve got more debt than I ever have to be honest.”</p>
Increase in expenses	<p>“the feed price goes through the damn roof”</p> <p>“ you’d put crops in, and wouldn’t see nothing, and you know all that expense just down the drain”</p>
Reduced income	<p>“They end up not paying you anything for the stock”</p> <p>“I wasn’t really earning anything.”</p>
Need to prioritise expenses	<p>“what you going to buy? You probably need something but do you really need it? You got to be careful of that.”</p>

Comparison to Others. In the context critical awareness, comparison to others was something discussed by participants as a method of information gathering. Comparisons were used to determine how they were by travelling comparatively to others, exploration of what others were doing and as a method of normalising the experience of drought. These comparisons enabled individuals to consider their situation in relation to others, and ensure they were considering all possibilities with regard to the management of drought. The table below demonstrates this theme through exemplary quotations.

Table 9: *Quotations that Exemplify Critical Awareness - Comparison to Others*

Facet	Exemplary Quotations
Comparison of situation	<p>“It was bare up there but they were a lot better off than we are down this way. In a bigger way.”</p> <p>“you would sort of leave drought here and you go up and it got lush and lush and you’d come back and it was the reverse you know”</p>
Comparison of stock management to others.	<p>“we decided to carry more sheep through the drought and feed them which means when it ended we had more sheep to breed from and take off again with.”</p>
Normalisation of experience through drought.	<p>“ everyone was in the same situation. No matter how big your property was or how big your turnover was, it still worked on the same percentage basis.”</p> <p>“I think most people spent plenty of time second guessing themselves as to whether or not they were doing the right thing”</p>

Understanding of Circumstances. As displayed in Table 10 on the following page, understanding of circumstances is related to preparedness in that these statements highlight a critical awareness of drought. Understanding of circumstances includes knowledge about droughts and their impacts, one’s own influence on the

situation and the assumption that the weather is changing and drying up. These beliefs informed decisions prior to and during the drought.

Table 10: *Quotations that Exemplify Critical Awareness – Understanding of circumstances*

Facet	Exemplary Quotations
Drought impact on community	“once the farmers stopped buying a lot of items at the supermarket the bottom line goes down. People cancel their newspapers because you know, that’s a few more dollars per week that they could save, so. Everyone was effected by it and then the ripple effect goes out to machinery people, ah, stock and station agents, merchandise people, you know”
Influence of stock management	“you’re feeding grain but you’re also running too many sheep on your property anyway, and that’s why you’re having to feed them.”
Weather patterns have changed	“The normal season is now half dry. Sort of thing. I think anyway. And when you do get a few good years, you just make the most of it.”

Accessing Information. Participants described accessing information related to drought and business practices which informed actions in the midst of drought. As seen in Table 11 on the following page, accessing information was not just about accessing any information but also about being able to utilise the most relevant information and disregard that which is not useful. Participants described accessing information from a range of sources including professionals, seminars and the internet to help make decisions.

Table 11: *Quotations that Exemplify Critical Awareness – Accessing information*

Facet	Exemplary Quotations
Using professionals as information	“[live stock agents] they can tell you what people are doin’ and what’s workin’ and what’s not”
Accessing seminars	“you go along and spend the day, or half a day and just find out how it’s done. And listen to people speak that have done it on the mainland”
Selectively accessing information	“if you’d implemented everything they’d said then you’d probably still be chasing your tail around.” “ pick up as much information as you can to go and do it yourself.”
Using the internet.	“the internet’s a great thing. You can jump on and get anything. And you can find things so easily”

Feeling Accountable and Responsible. Feeling accountable was considered under preparedness as it emerged as a motivating factor for change for some participants, particularly in regards to farmer’s role in the creation of dust storms through farming practices. Feeling accountable and responsible arose due to a critical awareness of the need to change to prevent the same things occurring in future drought. Table 12 contains quotations that exemplify this.

Table 12: *Quotations that Exemplify Critical Awareness - Feeling Accountable and Responsible*

Facet	Exemplary Quotations
Self as responsible	“Well you just kind of think, oh well I’ve done the wrong thing here.” “the sheep were in the same paddock and I went home. I should have taken them out of the paddock and put them somewhere else.” “And the worst thing was killin’ ‘em [the sheep]. That was the worst thing.”
Regret	“I think I’d have second thoughts about it [decisions] knowing what I know now”

Having Reserves & Buffers. The importance of having reserves and buffers to ease the stress arising from the drought was a common theme. Having reserves, including financial reserves, having stock and crops to buffer through drought, as well as utilising natural buffers such as tussock grasses are facets of this constituent theme as seen in the table below. Those with reserves were better prepared for drought and more able to mitigate the negative impacts of drought.

Table 13: *Quotations that Exemplify Having Reserves & Buffers.*

Facet	Exemplary Quotations
Financial reserves	<p>“we were lucky enough to have a little bit in reserve. It makes a huge difference.”</p> <p>“that was the big thing that helped us through this drought. That we had some money put away”</p>
Buffer system	<p>“With cattle we do trade in and out”</p> <p>“I did grow a crop of poppies last year, but you’d be looking at things like that that you can make a bit more money on. So it all comes down to how much you can make.”</p> <p>“Sheep as a primary income, but yeah , we grow fodder crops ah sometimes to get through that winter period”</p> <p>“the tussock’s you know, not as palatable as grass but it’s like a shed full of hay basically”</p>
Diversity	<p>“ diversify as much as possible, that’s really been the plan.”</p> <p>“you’ve gotta have a bit of everything these days, you just can’t rely on wool, not these days.”</p>

Sustainable Practices. Awareness of own influence on farming through drought and of strategies to be more sustainable in the long term emerged as a theme in the current study. This is epitomised by the following quote where a farmer was discussing changes they had made following a previous drought to ensure water availability in any following droughts:-

The last drought we had, after that I dug another dam, you know, to what I could afford. And I done that because I thought, “Gee, I’m not goin’ through this again. I’m going to make sure I got two good supplies of water”. Which I am pleased I did because that second dam I dug didn’t go dry this time.

Before it went dry ‘cos it’s only a very small hole, but I made it a lot bigger.

– Male farmer

Sustainable practices related to financial sustainability, ‘greenness’ or the attempt to minimise farming impacts on the land, and working with the environment. The table below includes quotes that illustrate these facets.

Table 14: *Quotations that Exemplify Sustainable Practice*

Facet	Exemplary Quotations
Practices to preserve land	“ farmers have to be pretty good conservationists, because our income relies on that.”
Reducing water waste	“ if it looks like it’s going to rain we just turn the bore off”
Financial sustainability	“we try and run a fairly low input. On medium output I guess. Low cost operation. You keep your cost down well you don’t need to make as much.”
Working with land and weather	<p>“work with nature rather than against it.”</p> <p>“ we don’t want to be fighting the environment the whole time”</p> <p>“We’d rather sell the sheep to get to a level that’s sustainable, even with, even in the drought, to have a certain number of sheep, um, just eating grass”</p>

Proactivity. This constituent theme is reminiscent of pre-emptive coping where farmers discussed actions taken prior to the onset of drought or as soon as it was identified. Forward planning and thinking, along with acting quickly were

strategies identified by farmers in the current study as necessary to reduce the impact of drought. Table 15 displays quotes that exemplify proactivity.

Table 15: *Quotations that Exemplify Proactivity*

Facet	Exemplary Quotations
Forward financial planning	“ the years before that we were able to put a few, you know some money away”
Forward business planning	“we just try and nut it out and do the sums and, on it, and work out what’s the best way, what’s the best way to handle a tough situation”. “try and do it as soon as you can. As soon as you recover. And when the finances are available to you, do it then. And not to wait.” “ sitting down and logically thinking though what’s happening, think about how long it’s gonna happen for, whether you agist some stock, feed some stock, a combination of both, sell a bit of stock, yeah, I guess just sitting down and having good planning.” “looking at books at the end of the financial year, look at where your moneys coming from, where are you starting to make your money. Is money from one part of your business starting to drop off?”
Acting quickly	“You have got to have a bit of a gut instinct” “ You have got to make the decision, no point leaving it to the last minute.” “you’ve just gotta be a bit cautious and, and try and act early, if you think it’s going to deteriorate.”

Positivity

Positivity was an emergent theme in the current study embodying the living of life well. Included in this theme are constituents of work-life balance, optimism, having meaning and purpose, compassion, acceptance, gratitude and humour which are described in more detail below.

Work-life balance. Separating oneself from work and having a balance in life was raised by participants as an important aspect of managing stress. This is captured by a statement made by a male farmer discussing the benefits of balance:-

It is amazing that if you can get away from the place, that's very, you know. It just grinds you down if you're here every day. – Male farmer

As demonstrated in Table 16, farmers discussed work-life balance in the context of having a break from the stress associated with farming in drought. This included using of sport as a break and distraction, using hard days as a reason to stay away from work, taking holidays through drought and insistence of doing this , having interests other than farming, and the necessity and benefits o taking a break.

Table 16: *Quotations that Exemplify Work-Life Balance*

Facet	Exemplary Quotations
Sport as a break and an opportunity to relax with friends	<p>“it was just such a good, so good, just to get away from the farm [to play lawn bowls] and just you know, you just forgot all about everything, you know, and that was really good.”</p> <p>“I am quite involved with sport with kids and things like that and that takes you off the place at weekends”</p>
Dust storms as an opportunity to take a break	<p>“ there were 3 or 4 horrific days where it was just you know, clouds of dust blowing off the place, and I just used to go home on those days. Get away from it.”</p>
Taking holidays through drought for the break	<p>“ we have a couple of weeks holiday camping up on the NW coast each year and we still did that.”</p>
Benefits of taking a break	<p>“it was just such a good, so good, just to get away from the farm and just you know, you just forgot all about everything, you know, and that was really good.”</p>

Table 16 continued.

Facet	Exemplary Quotations
Necessity of taking a break	“Drought is a very stressful thing. Stressful on the farmers, stressful not only on the animals and the cash flow and yeah, it’s a multitude of things. You got to get out and about, you can’t be stuck on the farm”
Taking weekends rather than working endlessly	“ we try and work 5 days a week. Weekends are for weekends” “Work hard during the week, play hard during the weekend.”
Not being solely focussed on the farm	“You know, I think of me farm but I also got other interests”

Optimism. In the psychological literature optimism has been widely researched and is considered a general disposition to expect positive future outcomes (Carver, Scheier & Segerstrom, 2010). Optimism as identified in the current study is characterised by a focussing on the positive and holding hope for the future. Participants used comparison to focus on the positive of their situation and put things in perspective. Comparisons to others enabled these farmers to consider themselves as being better off and comparison of the economic environment and climatic conditions to those previously served as a source of hope. Other strategies individuals used that reflect optimism involved focussing on positive aspects of the experience and considering that things could be worse. These are demonstrated on the following page in Table 17.

Table 17: *Quotations that Exemplify Optimism*

Facet	Exemplary Quotations
Focus on positive- now it is better than before	“sheep prices went through the roof at the end there and we were able to make back the loss pretty quickly. It looked like it was going to take forever but then things went in our favour.”
Focus on positive aspects of experience	“you could see bits of broken um, horse shoes, and things from the past. Umm, sometimes a broken bottle, or some little bit of rubbish, or some broken umm, grass arrows that have been left, or horse drawn things and they’re broken and been lost and you can kinda see them on the ground again. So that is interesting”
Focus on positive – it could be worse	“it wasn’t too bad here, but the other places on the other side of the highway, yeah, we had tanks and troughs and all that set up.”
Self description as positive	“I’m a fairly positive person. I don’t let too many things get me down “
Hope for the future	“one day it will rain. One day we’ll be able to have the cows and that back” “ there is still hope. Hope that it’s going to rain”.
Comparison to others	“Some people have been caught out really bad here, some people got their arse really kicked. They lost their family farm and I know got their arse really kicked.”

Meaning and Purpose. Meaning and purpose was expressed by a moderately through the current sample in the experience of drought. Generally meaning and purpose was expressed as a motivating factor for the continuation of farming despite adversity. This included the appraisal of farming as a challenging and as enjoyable, as a lifestyle choice, identifying the greater good in farming, seeing the farm as a family heirloom to pass on, and in one case the objectifying the business as an asset that is being built, and consequently sold if things don’t go well. These are exemplified by quotations in Table 18.

Table 18: *Quotations that Exemplify Meaning and Purpose*

Facet	Exemplary Quotations
Farm work as challenging and enjoyable	<p>“life can’t be boring, if it was boring it’s too much of a chore. I’d get out and sell the place up, it’s as simple as that.”</p> <p>“ having the seasons change all the time, to me, that’s the part of it you like. Because you’re trying to guess and you’re trying to use your experience.”</p>
Farming as a life-style choice	<p>“on the farm you work when there’s work to be done. And that’s the good part about it. “</p> <p>“It’s a lifestyle, that once you get it in your blood it’d be hard to give up. I don’t think I could go back living in a town now.”</p>
Work as an asset that is being developed	<p>“farming is a more long-term thing it’s a capital gains sort of set up as well, land values you hope keep going. You’ve put in infrastructures so you, yeah you’re building an asset”</p>
The farm as something to pass on to the children	<p>“ I’ve got a son now. And who knows if he’ll want to be a farmer, he’ll probably be a brain surgeon or something. Um, yeah, I hope someone, someone from the family will take it on”</p> <p>“I’ve got a son that’s mad keen on farming but, what’s the point of leaving him a place that’s so buried in debt that he won’t live long enough to get it back”</p>
Seeing the greater good in farming	<p>“ people on the land, they’ve got to be encouraged to stay there and produce food. For what is it, 6 billion on the planet.”</p>

Compassion. Caring about others, including significant others, friends, community members and even livestock was expressed by a moderate proportion of participants. As seen in Table 19 on the following page, this was demonstrated in statements regarding concern for others, the desire to share relief from drought and the organisation of events to do this and care about the welfare of stock and animals under their care.

Table 19: *Quotations that Exemplify Compassion*

Facet	Exemplary Quotations
Concern for the welfare and wellbeing of others	<p>“we’re not all made the same and there was even mates of mine that, you know, were battlin’ an, an I helped ‘em where I could”</p> <p>“I was really worried about some of the people around here.”</p>
Desire to share relief from drought	<p>“it was a real, good to see ‘em there because I knew they was havin’ a battle and it just really broke things for them and you know, you could see ‘em smile again .”</p>
Care about the welfare of stock	<p>“It was disheartenin’. You see no grass and just see rocks an, rocks an bear paddocks. And uh, the sheep waiting at the gate to feed ‘em”</p>

Acceptance. The role of acceptance in wellbeing research has been identified as contributing to psychological flexibility and the experience of vitality (Hayes, Strosahl & Wilson, 2003). For most participants in the current study, acceptance was evident through attitudes towards drought, farming and life in rural regions. This included not worrying about things that cannot be changed, taking one day at a time, continued work through drought, droughts as a part of life and being matter-of-factual about life and the survival of the farm. Examples of these are displayed in Table 20 on the following page.

Table 20: *Quotations that Exemplify Acceptance*

Facet	Exemplary Quotations
No point worrying about what cannot be changed	“if you can’t do anything about it, there is no point in worrying about it. That’s always been my philosophy about heaps of stuff. Just take it in your stride. No one’s forcing anyone to farm.”
Taking one day at a time	“ you just got to take each day as it comes, you couldn’t, you had to stop your problems and think well, everyone else is in the same situation. “
Acceptance of rural decline	“Yeah, well there just wasn’t the work. You can’t really blame anyone. They could go to Hobart and get a decent job, paid regularly”
Work continues even in drought	“If you’ve got work to do, you do your work around it.” “At the end of the day you still had to do your job and get through it.”
Drought as a part of life	“It’s just, that’s just part of, part of life. We’ve seen droughts before.” “ drought’s part of our business and we should be able to handle it. We should be able to structure our business to ride through droughts and still do what we do”
Matter of factual about survival of the farm	“One minute you might be here and the next you might not. There’s always someone doing it worse than me” “If it all goes belly up, it all goes belly up. I’ll look back and go well at least I had a go”
Matter of factual about life and death	“I don’t believe anyone’s gonna save my arse, if, when it turns bad, if, when I’m gonna go I’m gonna go and that’ll be the case”

Gratitude. This constituent theme emerged with moderate strength in the current study and is epitomised by statements about appreciation and being lucky. Gratitude is considered in the literature as an orientation towards noticing and appreciating the positive in life (Wood, Froh & Geraghty, 2010). As shown in Table

21, participants recognised and were grateful for the assets they held and for assistance during the drought.

Table 21: *Quotations that Exemplify Gratitude*

Facet	Exemplary Quotations
Appreciation of assets	“the two bores on this place didn’t let us down so, that was another thing I didn’t have to worry about. Which was lucky.”
Appreciation of assistance	<p>“they could see that the guys on the land were, you know, strugglin’ and I think that’s why they, one way that they thought they could help. Which they did”</p> <p>“You might have only got a couple of bags of oats and a couple of bales of hay, but it probably just lifted you for that week. You knew that someone else was thinkin’, caring.”</p>

Humour. Presenting moderately across the participants in this study, humour was depicted in the current sample as something referred to that was a source of relief in drought and through the use of humour in conversation. Table 22 gives examples of quotations that exemplify humour.

Table 22: *Quotations that Exemplify Humour*

Facet	Exemplary Quotations
Use of humour to lighten mood.	<p>“ yeah, every now and again you might say, oh it’s pretty dry here, or what did you do with all the grass? Yeah, yeah it’s better to have a joke about it, then to go into depth, really.”</p> <p>“there is a certain amount of black humour that ah, farmers tend to use. We’re all in the same boat. If ah, if one sinks we’re all going to sink, but yeah you just get through it that way”</p>

Social Connectedness

Social connectedness in the literature, relates to the perceived quality and number of connections a person has to the community, including friends, family and acquaintances. It has been identified as having protective effects in mental health and wellbeing research and an important resource in stress management (see Townsend and McWhirter, 2005 for a review of the literature on connectedness). Social connectedness emerged as a key aspect of experience for the participants in this study. Rather than presenting as a broad general concept, social connectedness was discussed by participants relative to drought, making it a more situationally specific construct in the current study. Important in this theme are the connections not only to other people but to the community more generally. Three constituent themes were apparent, relating to different aspects of connectedness in the experience of drought. These included social support, community and collaboration. These are discussed in more detail below.

Social support. Social support was represented strongly in the current population and embodies the perceived benefits of social contact and connection with others. Benefits from having social relationships included the opportunity for relaxation, distraction, and support. These are demonstrated with quotations in Table 23 on the following page. Connections with others facilitated an overall feeling of being understood. What also emerged was the difference perceived in understanding and support from rural compared to urban people, with shared experience considered a foundation for understanding and support.

Table 23: *Quotations that Exemplify Social Support*

Facet	Exemplary Quotations
Friends as a distraction and source of mutual support	<p>“You could talk about it, well then you’d try and not talk about the drought, you’d talk about everything else.”</p> <p>“Well everyone was going through a common thing, so, so it ah, there was always that discussion, level of support.”</p>
Relaxation and distraction through socialising	<p>“we’d play a bit of sport, bowls and things like that so, every Saturday we’d make a break and have half a day off, a few beers afterwards, so that’d ease the pressure a bit. For a couple of hours”</p>
Family as support	<p>“Yeah, my family that keeps it, that keeps me going”</p>
Giving support to others	<p>“there was even mates of mine that, you know, were battlin’ an, an I helped ‘em where I could and you know, we talked a lot, you get phone calls, and we’d talk a lot about it which was good.”</p>
Feeling understood	<p>“you kinda know people and, in my area, in the local area, kinda know what was goin’ on.”</p> <p>“If people understand what you’re going through ah yeah, it works out fine.”</p>
Rural-Urban divide in support and understanding	<p>“I think there has to be some work done on getting some understanding in the urban sector. Um, yeah, they don’t tend to understand. They can’t, they can’t quite work out what um, what farmers are on about.”</p>

Community. The constituent theme of community consists of statements concerning the experience and benefits of being involved with the local community. Involvement included organisation of and participation in events and committees. The identified benefits that are gained through involvement include having a reason to take a break or to be distracted, the opportunity to have contact and talk to others in a similar situation both personally and for the wider community more generally. Table 24 on the following page displays the facets and quotes that exemplify community.

Table 24: *Quotations that Exemplify Community*

Facet	Exemplary Quotations
Organisation of community events	“we put a team, a local fire brigade team basically in the local competition and started that up now, it must have been the second year of the drought probably. And that was just, it’s just an outlet.”
Involvement in committees and groups	“You just gotta get involved in a few other committees so you got out there. You had to sort of force yourself. You might be able to go to a meeting and just have a beer or something with people” “I’d have a couple of meetings a month and catching up with different people and that sort of thing, so it’s good, healthy.”
Participation in community events	“probably just gets you out in the middle of winter on a Wednesday night.”
Benefits of community events	“I suppose, community, things like that fodder drive and everything that you actually got people together to talk about things a bit, I mean, that’s the important thing” “But they were, you know, it was really good. I think it all helped yep, when you help each other” “ it just gets everyone talking again, ‘cos everyone had just closed down. And yeah, just come out, and have a few beers and play a bit of eight ball and go home.”

Collaboration. The constituent theme of collaboration was represented moderately in the current study and highlighted the collegial nature of rural community members. Collaboration is closely linked to social support, as it emphasises benefits of social resources. As demonstrated in Table 25, collaboration in this context is considered a source of information and a medium for problem solving. Connectedness in this context relates to the opportunity to work with other people, resulting in more informed and resilient business strategies and a decrease in workload.

Table 25: *Quotations that Exemplify Collaboration*

Facet	Exemplary Quotations
Working collaboratively with others	<p>“Yeah I said, but both me other, both me parents I said, got any agistment? He said yes. So we went in halves with them., He fattened them up and he got half the money and I got the other half.”</p> <p>“I’ve got a couple of good mates that are both retired and they come and help me out. You know, and I, we call it the barter system”</p>
Bouncing ideas and information off others	<p>“A good group of friends that use each other as sounding boards. Okay this is, you’re not in it by yourself, we’re all in it so let’s bounce a few ideas around and see which are the best ways to deal with it.”</p> <p>“Everyone was happy to bounce ideas around so yeah, that side of it was good.”</p>

Reflective practice

Reflective practice differs from preparedness in that it surmises coping with the present drought in a thoughtful manner. Reflective practice is a term often used to describe the practice of constantly learning from experiences through analysis and reflection (Bolton, 2010). In the current study, reflective practice consists of prominent constituent themes relating to adaptability and flexibility, the application of a broad skill base, calculated risk taking and learning, Reflective practice in the current study involves the ongoing assessment of situations, application of skills and knowledge, and the development of new skills and knowledge where necessary.

Adaptability & Flexibility. Psychological literature suggests that adaptability and flexibility is protective of mental health (Kashdan & Rottenberg, 2010). In this study the need for adaptability and flexibility is captured by the following statement:-

You've got to adapt or be at your own peril – Male farmer

and was a prominent theme in the current study. As depicted in Table 25, flexibility and adaptability is considered strategic with the adaptation of business to adjust to weather and economic condition and application of new approaches to better manage drought, including people management, stock breeding and change of focus from stock to crops and vice versa. Comment on these was made by most participants. There was also some discussion about adaptation to drying climates.

Table 26: *Quotations that Exemplify Adaptability & Flexibility*

Facet	Exemplary Quotations
Change in people management in drought	<p>“ we started doing a lot of things that we would’ve got employed other people to do.”</p> <p>“we tried to use ourselves, you know the people, including my brother and I who work on the place full time to try and do things ourselves that we would have employed other people to do.”</p>
Change in stock breeding in drought	<p>“Ah we breed the odd British breed, put a British breed over to produce a fat lamb. During the drought we just cut that out. There was no point trying to sell a small runty lookin’ lamb”</p>
Adaptation to make the most of market demands	<p>“there are times when you, when you gotta grow crops and grow things you know, if fat lambs are only \$30 now I’d be tryin’ to, oh I did grow a crop of poppies last year, but you’d be looking at things like that that you can make a bit more money on.”</p>
Making business decisions to best suit conditions	<p>“if it’s getting a bit tight in that one then we’ll move a few that way and you know, if we have more rain down that end of the place then the stock will start moving down, we’ll start moving stock down that way and that person will get more stock because they have had more rain.”</p>
Flexibility in sale price	<p>“The lot of it will always go, it’s just a matter of what price you want to let them go at.”</p>

Table 26 continued.

Facet	Exemplary Quotations
Adaptation to drier climate	“Everything seems yeah, either boom or bust. I suppose you’ve just got to try and adapt to it as well as you can.”
Personal change if unable to continue farming	Well yeah, as I say , if things got so bad, you know I’ll just get rid of it [the farm].
New crops to maximise income	“ we’re trying poppies this year. Um, yeah, after that we got that big rain in August, early august, 60mm we thought we might give it a go.” “ we’re getting into a lot more cropping now. Even though it’s a small area of the farm, it’s actually quite a large income component of the business.”
New strategies to minimise expenses	“there are plenty of things that we’ve tried to do. Try to conserve your own water, try and build your reserves up.”

Applying broad skill base. Related to adaptability and flexibility, applying a broad skill base involves the recognition of skills and application of these in drought in order to limit expenses and maintain an income. Quotations that illustrate this constituent theme are listed below in Table 27.

Table 27: *Quotations that Exemplify Applying Broad Skill Base*

Facet	Exemplary Quotations
Multi-skilled	“I’ve done, I’m sort of doing a bit of wool classing as well”
Having other work in drought	“I do some contract work. A bit of contract ploughing and you know, just things like that.” “I occasionally do a little bit of wood cutting. And we get royalties from woodcutters, and people buying rocks.” “we used to do a bit of contracting during the drought, down in Cygnet, Dover, Geeveston way.”

Calculated risk taking. Calculated risk taking embodies a process of considering the factors pertinent in drought and making informed decisions. Importance of good decisions, especially in drought, the weighing up of decisions prior to making them, setting limits to ensure not making a loss, risk taking and seeking advice to assist in decision making process were all facets of calculated risk taking and are depicted in Table 28.

Table 28: *Quotations that Exemplify Calculated Risk Taking*

Facet	Exemplary Quotations
Importance of good decisions	“when you think you’re heading into a drought, of course the decision you make then, it can, it can sort of effect you financially quite significantly from then on.”
Weighting up decisions	“there are times when you can take a gamble on things, and you will make, you’ll make more money sort of, by doing that. Buying when things are cheap. Hoping that its gonna rain. And if it does rain you make money, and it’s just a, weighing up the odds I guess”
setting limits	I set meself a limit, that I can, that I think I can make money out of ‘em. If you buy, it’s like buyin’ anything, you can’t go over the fence or you cut your profit margin. You just don’t want a heap of work and then get out the same as what you paid for ‘em, you gotta make something.
Risk taking	“There’s a wide risk with farmin’ anyway. It’s like takin’ one big gamble. That’s all it is.”
Seeking advice to help make decisions	“It’s quite expensive but we believe it’s worth it at the end for the output. So yeah,. Basically he checks every sheep every year.”

Learning. Evident in the current study and captured by the statement:

You’re always trying to keep learning the new ways – Male farmer

Learning is a drive in participants to be acquiring new information and skills in order to improve their business. As seen in the table following, the facets of learning that were raised by participants included learning from experience, education and training

and learning from others. Learning from experience and education and training were related to preparation for and better management during drought. Learning from others included a range of sources such as family, neighbours and professionals.

Table 29: *Quotations that Exemplify Learning*

Facet	Exemplary Quotations
Learning from experience	<p>“The last drought we had, after that I dug another dam, you know, to what I could afford. And I done that because I thought, “gee, i’m not goin’ through this again. I’m going to make sure I got two good supplies of water.” Which I am pleased I did because that second dam I dug didn’t go dry this time”.</p> <p>“prices always go up at the end of it. So one lesson I’ve had is that you’ve gotta have sheep there to sell when the drought breaks”</p>
Education and training	<p>“we did a fair bit on drought and signs of drought, you know, like don’t wait until you know, you’re totally in the drought and think well we’ve got 5000 head and they’re all starving.”</p>
Learning from family	<p>I fill me stock up, yeah. Me old dad passed that down. Stock up first, if you got any surplus, sell the surplus.</p>
Learning from other farmers	<p>“they said “oh it’s the worst thing that’s ever happened”. Because it’s such a good feed and it filled a gap when they needed it, like in winter time. It fills a gap. So they’re pretty highly valued for us”</p>
Learning from professionals and other farmers.	<p>“you talk to other people, and what they’re doin’, and probably union reps and like rockets and elders a bit more.”</p>

Perseverance

it can be very demoralising at times. But you pick yourself up, you roll onto the next thing and you go well, that was a bit of a shocker and you keep going

– Male farmer

As the quote from the male farmer on the previous page expresses, the farmers in this study were importunately farming in the face of drought. Perseverance emerged as an integral part of the experience of farming through drought. In the current study perseverance is encapsulated by prominent constituent themes of sustained effort and little reward and tolerance of unpredictability and uncertainty which are described in more detail below.

Sustained Effort and Little Reward. Long hours, limited break, repetitive work and little sense of achievement or accomplishment are apparent in the stories of drought for the farmers in this study, as described in the following quote:-

Sometimes you wonder what the bloody hell you're doing there for, you just have one of those days where there's dust and you're feeding sheep and, you just go, 'oh crap, when's it gonna end?' – Male farmer

Sustained effort highlights the prolonged and trying nature of farming in drought and the need to continue despite a lack of accomplishment. Table 30 describes the constituent theme of sustained effort with little reward with exemplary quotations.

Table 30: *Quotations that Exemplify Sustained Effort with Little Reward*

Facet	Exemplary Quotations
No break	<p>“ you look out and you can see the effects of the drought or you can see that everything is burnt and so yeah. It is your problem. It's more of a 24 hour thing.”</p> <p>“ when you're working and you live here it's hard to get away from it.”</p>
Long hours and repetitive work.	<p>“ you was out there from daylight to daylight. And most of the time you were feedin' or movin' sheep.”</p> <p>“ you were just doin' the same thing, and no variety”</p>

Table 30 continued

Facet	Exemplary Quotations
No results	“all the work just revolved around the drought. You’d put crops in and wouldn’t see nothing, and you know all that expense just down the drain.”

Tolerance of Unpredictability and Uncertainty. Farmers describe uncertainty as part and parcel of farming, but what is evident in this study is that these people worked with and managed it as best as possible, tolerating uncertainty. This is portrayed in the following two statements:-

That’s the other big gamble, when the drought’s going to end. If you knew that then everyone would do it easy – Male farmer

If you’re a good manager you can manage. You can manage drought, you can manage fire. I suppose you manage anything but you can’t manage when it comes though.

– Male farmer

The farmers in this study recognise the unpredictability and uncertainty of weather that they are faced with, however expressed they felt less certain that it will rain and for how long, even after the drought had broken making farming harder to manage. The table on the following page demonstrates quotations that illustrate a tolerance of unpredictability and uncertainty.

Table 31: *Quotations that Exemplify Tolerance of Unpredictability and Uncertainty*

Facet	Exemplary Quotations
Managing uncertainty	<p>“Not knowing when it was going to end I think was the worst part. And you somewhat wonder if it has.”</p> <p>“ it’s always a bit of a gamble because you don’t know if it’s going to rain or not”</p>
Unpredictability	<p>“we’ve never had a drought go for so long”</p> <p>“ we’ve always been used to missing a season, or a bad drought was missing out on years worth of seasons. But the latest one we had was a 5 year drought. Which is unheard of in Tassie”</p> <p>“ Farmin’s just a gamble.”</p>
Tolerance of unpredictability and uncertainty	<p>“The heavens control it. If you get good rains, at the right time, even if your don’t get a lot, but if you get the rain at the right time you manage and get through it.”</p>

Solastalgia

Solastalgia as presented in the current study involves an acknowledgment of change, particularly in relation to social resources and recognition of visual reminders of drought. For some this resulted in descriptions of distress and reference to the ease of times past, for example a male farmer stated that “it was a lot easier farming then than it is now”.

Change – social resources. Change in this constituent theme as described in the following table, related to descriptions of loss of social mass in rural towns during drought, displayed in experiences with sport clubs, community groups and in the available workforce, and the selling of small farms.

Table 32: *Quotations that Exemplify Change – Social Resources*

Facet	Exemplary Quotations
Loss of social mass in rural towns	<p>“ A lot of people have probably moved away now, but I mean their pool and that used to be a thing, and their hotels. That’s all gone”</p> <p>“you kinda don’t see the people that used to be around as much, ‘cos the bigger farms come in and buy. So you still get to see people, but it’s not, it’s not the same.”</p>
Lack of sports club members	<p>“There’s a lack of players. Um, most of the young blokes go to Hobart now to work, so a lot of them sort of tend to play down there”</p>
Lack of members for community groups	<p>“[local show] just basically about to fold because it’s just, lack of numbers coming because of lack of people in the area and there is not the people to help and run it.”</p> <p>“ we’ve got two [fire] trucks there and we’ve got enough people to take one truck out of the shed”</p>
Lack of workforce	<p>“there’s lots of shearers gettin’ old. Yeah, there’s not a lot of young shearers around”</p>
Visual loss	<p>“farmers have sold out, and Gunns and that have bought their properties and, plant to mount the trees”.</p>

Visual reminders. Visual reminders of drought surfaced as a recurring source of distress for some farmers. Evident in this constituent theme is the impact of visual scenes on the wellbeing of farmers. As depicted in the table on the following page, these reminders cued thoughts of regret and disappointment, served as a reminder of the hardships of farmers and instilled the fact that the drought was all encompassing.

Table 33: *Quotations that Exemplify Visual Reminders*

Facet	Exemplary Quotations
Constant visual reminder of drought	“It was disheartenin’. You see no grass and just see rocks an, rocks an’ bare paddocks. And uh, the sheep waiting at the gate to feed ‘em”
Impact of visual on wellbeing	“when you sit at this table and see clouds of dust and that blowing and looking out and seeing bare paddocks and seeing the stock that’s in it, yeah, it’s right there with you.” “ I suppose you’d wake up in the morning, same old thing, look out the door and its brown and dust, worst days are dusty days, really windy days, probably the most depressing.”

Questionnaires.

This study gathered data about the experience of drought through interviews and the completion of questionnaires with each participant and are listed in Table 33 on the following page. As noted in the table below, the DASS was left unanswered by four participants. Those that did respond scored predominantly in the normal range with three scoring in the moderate to severe range for depression, one scoring extremely severe for anxiety and two scoring mild and severe for stress. From the scores it is evident that participant H was suffering a significant level of distress and this was evident in the interview, however scores are confounded by a recent medical illness, rather than attributable to the experience of drought per se. Similarly with participant G, he was experiencing relationship difficulties at the time of interview and this might have played into his questionnaire results. As for the sense of coherence scale, there are no available cut-off scores and all participants resulted in similar scores giving little information on differences in relation to the experience of drought. Only two participants scored as demoralised (cut-off of 36) in the current study. Those scoring higher on demoralisation were still in the midst of financial

debt and physical illness, and therefore not as able to take advantage of the relief from rain. The resilience scale was another scale without cut-off scores but highlighted the most variability between participants. The Connor-Davidson Resilience Scale is a measure of self-appraised general resilience, of not being overwhelmed by stress, tolerant of unpleasant emotions, seeing challenge in life events and drawing meaning from experience. Participants scoring high on this questionnaire are theoretically coping better, despite the stressors of drought than those scoring lower.

Table 34: *Participant Questionnaire Scores*

Participant	Resilience	Demoralisation	Sense Of Coherence	Depression	DASS Anxiety	Stress
A	66	27	42.5	Normal	Normal	Normal
B	80	12	42	-	-	-
C	88	10	34	-	-	-
D	63	15	41	Normal	Normal	Normal
E	67	14	39.5	Normal	Normal	Normal
F	73	15	42	-	-	-
G	48	34	42	Moderate	Normal	Normal
H	53	51	47	Severe	Extremely Severe	Severe
I	87	6	42	Normal	Normal	Normal
J	51	39	38	Moderate	Normal	Mild
K	66	11	40	-	-	-
L	81	21	42	Normal	Normal	Normal
M	82	23	43	Normal	Normal	Normal

Questionnaires were used in the intrapersonal triangulation of data, however, these scores were not as useful in the qualitative data analysis process as first considered. Initially data was presented based on the dichotomisation of the resilience and demoralisation scales, however structures of experience remained similar across participants. For this reason a division of participants based on questionnaires was abandoned.

Discussion

This study sought to explore the experience of farmers in Tasmania, following a particularly prolonged drought. On a backdrop of climate change, and the possibility of droughts becoming more frequent and severe, participants described their story and from this data six major themes emerged. These themes were preparedness, positivity, social connectedness, reflective practice, perseverance and solastalgia. These themes seem to move from more general personal and practice aspects of experience, through to more experiential and situation specific aspects of experience. Presented visually in Figure 3 on the following page, the data also funnels from more to less prevalent as presented by the size of each oval. The emergent structure is not a hierarchical figure but is presented to the reader to give a pictorial representation of the data. The funnel-like figure was considered as data was difficult to represent in a linear fashion. Solastalgia is presented as a separated theme in this model as it related to specific observations of change and resultant emotional responses.

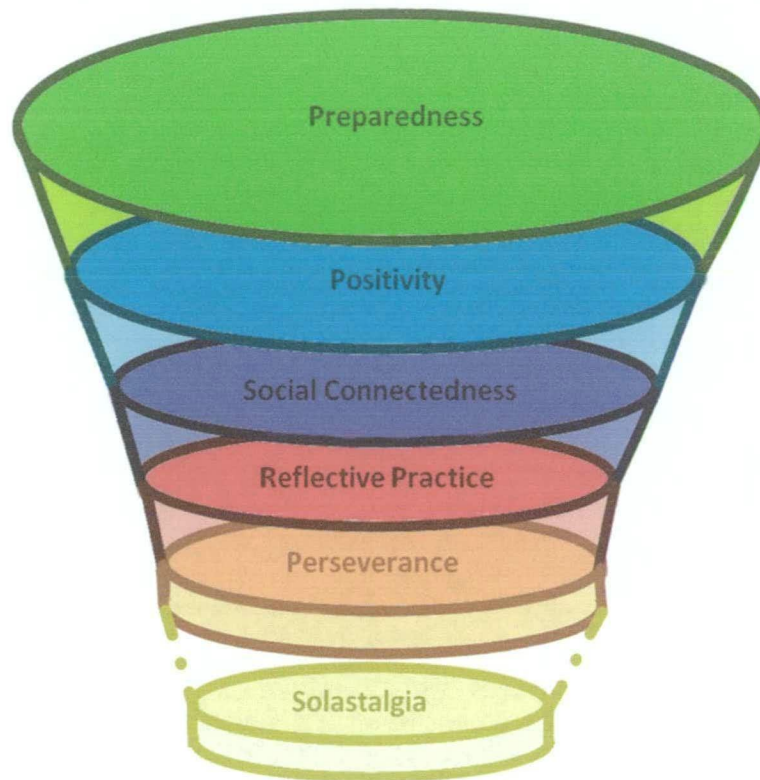


Figure 3: *Visual Representation of Data in the Current Study*

It was interesting to note that although climate change was discussed in the current study, it was not in the foreground of the data. A few participants felt that climate change was a real and immediate concern, and were making long term changes to accommodate weather variation, however most remained uncertain and focussed on the here and now of the experience of drought as a natural event. For this reason climate change did not come through strongly once data analysis was underway, and consequently fades following further analysis.

The following section explores the emergent themes further drawing on important aspects with reference to the current stress and coping literature.

Preparedness

There has been a move towards preparedness at a policy level, specifically in relation to acute and severe natural disasters such as hurricanes, fires, floods and droughts to enhance community resilience (Trigg, 2007). At the individual level, pre-emptive coping constructs such as anticipatory, preventative and proactive coping are constructs that can be drawn into the notion of preparedness as they relate to the mitigation of distress due to prior coping efforts. These constructs differ in the appraisal of time until the next event and certainty that an event will occur. Anticipatory coping aims to deal with certain events in near future, preventative coping to reduce likelihood of events in future with preparation just in case, and proactive coping a general building of resources and promotion of growth to achieve personal goals (Scwarzer & Luszczynska, 2008).

Pre-emptive coping examples are considered in relation to the current study. For example, some farmers reported saving money and limiting expenses in order to have financial reserves prior to drought. This anticipatory coping is discussed by a male farmer stating “the years before that we were able to put a few, you know some money away... that was the big thing that helped us through this drought”. Forward planning enabled this farmer to ride through the financial expenses and reduction in income that is related to drought. Preventative coping approaches, such as the building of more and bigger dams and the development of irrigation systems prior to this drought were also discussed. By planning ahead just in case another bad drought came along, these farmers were able to prevent a situation occurring where they found themselves without water again. Finally an example of proactive coping is the attendance to college to increase knowledge and skills related to farming. Generally these farmers developed a broad knowledge base around farming, business

management and alternative approaches to farming that resulted in better recognition of the signs of drought and better management procedures. Where pre-emptive coping strategies were discussed, participants recognised a reduction of current drought related stressors.

Although pre-emptive coping approaches predate stressful events, this study highlights a need to consider role of anticipatory, preventative and proactive coping as an influence on the experience of farming in the context of drought and climate change. Planning ahead can influence the resources that individuals have and the stressors experienced through drought. Where farmers stored finances, water and feed prior to the drought they described a reduced impact of drought compared to others. Preparation for drought through recognition of problems, and increase in resources plays a role in mitigating the degree of distress suffered by people throughout and following drought (Zamani, et al., 2006).

Positivity

Positivity in the current project involves the positive constructs of acceptance, compassion, optimism, having meaning and purpose, a work-life balance, gratitude and humour. The high prevalence of these in the data and in other qualitative drought research suggests they are important in the experience of drought and managing stress for farmers (Caldwell & Boyd, 2009).

Optimism has been studied at length in relation to its benefits on health and wellbeing (Carver, et al., 2010; Scheier & Carver, 1992; Peterson, 2000). Individuals that are optimistic anticipate good in future events rather than bad and are less likely to experience distress under pressure (Carver, et al., 2010). In situations appraised as uncontrollable, optimists are also more likely to accept their situation rather than use

denial (Scheier, Weintraub & Carver, 1986). In general optimists are more likely to employ effective coping strategies in the management of stress and less likely to use disengaged coping such as behavioural disengagement (see Solberg Nes & Segerstrom, 2006 for a review of the literature). In the current study a number of comments regarding optimism arose in the data. For the reasons stated above, it would be expected that farmers who are more optimistic would be better equipped to deal with stressors of drought, hold more hope for the future and therefore experience less distress.

Positive emotion as a response to the drought can be considered with regard to positive coping theory. Positive coping theory states that when a stressor requires sustained coping that meaning focussed coping can counter this by drawing positivity from the experience and feeding back into sustained coping, restoring resources in order to function more effectively (Folkman, 2008). In articles discussing positive coping and the broaden-and-build theories, humour and gratitude are two such emotions that have been highlighted for the role that these positive emotions play in the coping process (Wood, Froh & Geraghty, 2010). Similarly, the broaden-and-build theory may also help explain the experience of drought by some of the farmers. This theory proposes that positive emotions enable a person to consider alternative approaches to problems through previous learning opportunities, can remedy negative emotions and ultimately enhance resiliency (Fredrickson, 2004). The use of positive emotion has been found to be an important part of being resilient in rural people (Hegney, et al., 2007), and to moderate stress and mediate recovery (Ong, et al., 2006). Facilitating positive emotion prior to and during drought might help in building coping repertoires, reducing distress and the need for sustained coping efforts by these farmers through drought.

Positivity in this study is reminiscent of living life well and having a balanced approach in managing drought. A construct in the literature that is similarly related to living well is that of eudaimonia. Eudaimonia is considered a type of well-being that results from undertaking pursuits and goals that are in line with personal values, but also relates to the achievement of balance and harmony in life (Compton, 2005). Dating back to ancient Greek philosophy, it has been differentiated from hedonic pleasure, the experience of pleasure and undertaking of pleasurable activities. Only a weak link has been established between hedonic conceptions of happiness and well-being, in contrast to eudemonic notions (Peterson, Park & Seligman, 2005; Ryan & Deci, 2001; Waterman, Schwartz & Conti, 2008). Farmers achieving balance in life such as those in the current study are living life according to their values should therefore experience a higher degree of well-being, even when faced with stressors such as those produced by drought.

Another construct related to vitality and the living of life well despite negative experience is that of psychological flexibility. Psychological flexibility is the action of being present with the moment and guided by our values, through having full openness and awareness of our experience (Hayes, et al., 2003; Kashdan & Rottenberg, 2010). Individuals are asked to accept negative as well as positive, rather than denying, fighting, running away or becoming overwhelmed (Hayes, et al., 2003). Although denial is considered beneficial for short-term stressors, acceptance is considered beneficial when stressors are sustained longer-term contributing to psychological flexibility and the experience of vitality (Hayes, et al., 2003; Sheier & Carver, 1992). Those with greater psychological flexibility are considered to have a greater quality of life because they can respond more effectively to challenges and

problems in life (Kashdan & Rottenberg, 2010). These individuals are also able to derive a sense of meaning and purpose through living. (Hayes, et al., 2003).

Responding effectively to problems and enjoying opportunities for living well enabled the farmers in this study to experience lowered stress, despite the ongoing problems associated with drought.

Social Connectedness

Social connectedness has been identified as important factors in human development, health and wellbeing, and as a resilience building factor (Dean & Stain, 2007; Thoits, 1995). Although it is beyond the scope of this study, Townsend and McWhirter (2005) offer a review on the literature on connectedness, highlighting the protective effects of social connections and the importance of the construct in mental health and wellbeing research. Perceived emotional support buffers the detrimental effect of chronic strains and stressful life events on physical and mental health (Thoits, 1995). The current study supports these findings, identifying shared experience and connectedness as playing an important role in feeling understood and providing avenues to facilitate the management of prolonged stress as experienced in drought.

This finding has been found in other studies on farming families and drought. Calwell and Boyle (2009)'s study participants identified social connections as something that resulted in them to feeling more understood and supported. An avoidance of negative social influences was also reported by some these families as a protective move to ensure those around them provided such support and understanding. This is supported by Stain and associates' (2008) study finding that greater community support was a protective factor with those perceiving lower

community supports being more likely to experience a higher degree of distress in the face of drought.

An important note is that support can be weakened or strengthened during episodes of chronic stress (Thoits, 1995). Due to the prolonged nature of some stressors, social supports may erode, leaving a person more vulnerable to negative impacts of such stress. Alternatively, when chronic stress is experienced by a group of people it can encourage a collective mobilisation where people work together to manage the stress (Thoits, 1995). In the current study, segregation was reported in relation to rural and urban connections by participants due to feeling less understood and supported by those not sharing the similar experience. Local supports appeared to be strengthened due to the mutual experience of drought and with the organisation of community events such as eight-ball nights and drought relief events.

Reflective Practice

Reflective practice emerged in the current study as a process by which farmers were attempting to grow and improve through the experience of drought. These farmers were aware of their situation, able to assess where flexibility and adaptation was necessary in order to reduce expenses and maintain an income through drought. They were also in a process of reflecting on their situation and practice to identify changes necessary, and where different approaches to solving problems in drought were needed. Although there are some similarities of this theme with preparedness, reflective practice is differentiated from preparedness in that it relates to the experience of managing drought once it has occurred and growing from this experience.

Reflective practice is also an aspect of hardiness. Hardiness has been a long standing concept implicated in research on stress and coping (Maddi, 2002, 2005). It is considered a personal resource or global personality trait involving interrelated attitudes of control (rather than powerlessness), commitment (rather than alienation), and challenge (rather than threat), which are suggestive of a better way of coping with stress (Maddi, 2005). Similar to sense of coherence it is evident in its description that hardiness incorporates both personal resource and appraisal resulting in hardy people who experience a lower degree of distress when confronted with adversity. In the current study, hardiness has the potential to explain how some farmers are better able to acknowledge and utilise resources available throughout drought and may be an important construct to consider in future research in coping with drought and adaptive with climate change.

Within this literature, coping strategies are considered as either transformational or regressive, with hardy individuals more inclined to utilise transformational coping strategies to manage stressors (Maddi & Hightower, 1999). Transformational coping attempts to problem solve complex issues of a stressful situation through positive reinforcement, decisive actions, deepened understanding, broadened perspective and through seeking of instrumental help. In contrast regressive coping attempts to provide relief from stressful situations via escape and stoical persistence. Farmers utilising transformational coping strategies in the current study were more likely to be acting to improve their situation. For example, where efforts cannot be made to change the influence of weather on the farm, participants sought to change the influence of the farm on themselves through attending information sessions and creating support opportunities through local clubs and relief events.

Reflective practice is also a fundamental component of resilience. The majority of farmers in this study presented as resilient. These farmers were able to reflect on their situation and problems that confronted them, applying pre-learnt knowledge and skills and identifying where novel approaches to problems were necessary. Captured by the statement of a male farmer “we’ve become a little bit better at managing too”, these farmers also consider themselves to have learnt and grown from their experience.

Investigating the saying “what does not kill us makes us stronger”, a study by Seery and associates (2010) found that low to moderate previous adversity was associated with less distress when faced with current adversity, however more lifetime adversity was associated with higher levels of distress. The benefits from the experience of low to moderate adversity were suggested to be due to the ability of such people to learn from past experience, developing coping mechanisms and support networks to buffer stress from the experience. These findings might help to explain why studies such as Caldwell and Boyd’s (2009) show that drought can lead to enhanced resilience for some people, and a breakdown in others.

Perseverance

Perseverance was less prominent than other themes emerging from the current study but remained an important aspect of farming through drought. Every farmer referred to the chronic nature of drought, the unpredictability of rain and income and uncertainty in decision making, however each farmer was still farming and willing to continue this. Perseverance in the current study was implicit in the conception of farming, rather than directly referred to in conversation, underlying participant comments regarding uncertainty and unpredictability as an aspect of

farming. These individuals are able to manage these uncertainties and continue farming despite crop failure, hungry stock and reduced income.

In considering perseverance it is important to draw on aspects of resilience. The moderating affects of resilience on the appraisal and management of stressful events enables resilient individuals to better manage these situations (Ong, et al., 2006). As mentioned previously, most participants scored relatively high on the CD-RISC, suggesting this is a resilient sample. Given resilience is defined as a process of managing, recovering and growing from potentially distressing events; it would indeed play a role in the ongoing persistence described by the people in this study. Without a degree of resilience these individuals would find it difficult to continue through and recover from prolonged hardship as can be induced by drought.

Comprehensibility and manageability from the sense of coherence also relate to perseverance in the current study. When considering comprehensibility, farmers were unlikely to report predictability and consistency in relation to farming in general, but especially in relation to drought. Perhaps in being able to clearly define the problems they were faced with, uncertainty becomes more tolerable for these farmers. Manageability on the other hand is the degree to which an individual feels that they have the resources to effectively deal with problems. This is a necessary aspect of sustaining efforts in drought. The importance of resources is highlighted in a study by Freedy, Shaw, Jarrell and Masters (1992) looking at short term adjustment following an acute environmental disaster, Hurricane Hugo. Distress was related to resource loss and resource loss was more important than individual coping behaviours and personal characteristics in predicting distress. Resources have been less explored in the context of prolonged environmental events such as drought (Zamani, et al., 2006); however it is clear to see that without a sense of

manageability, farmers are likely to become overwhelmed by the experience and less effective in coping with drought.

Solastalgia

Solastalgia here is related to loss, particularly with regards to the appraisal of the world and the external influences on the individual. In the current study farmers recalled the sights of drought and the impacts these had on them, especially in regards to dust storms and the dryness of the area. They also referred to change through drought, but also more generally such as that of rural decline. Most participants' descriptions were not accompanied by expression of distress but more of an acceptance and acknowledgement of change as part of life and as motivational influences on farming. An exception of this was female farmer scoring low on resilience and high in demoralisation described distress accompanying the acknowledgement of change. This is captured by the statement from a female farmer "it destroys you really, to see the land going into trees". This female farmer felt that farmland sold to forestry was visual evidence of rural decline and a steady move towards the extinction of future agriculture.

Although solastalgia is a newly introduced term the literature, it was apparent in the current study that there is an acknowledgement of change from all farmers. The description of past times as easier and towns as socially fuller is emblematic of nostalgia, where comfort was once provided from place but is not any more. Distress due to these changes was also described by some participants. Satore and associates (2008) noted similar observations from participants regarding drought. Individuals reported distress at the visual reminders of drought, reporting an impact of the physical environment on wellbeing. The emergence of the theme solastalgia suggests

that physical environment and surroundings play an important role in the experience of drought.

Points of Consideration

In exploring drought, this study incidentally explored a phase of recovery from drought, following the breaking of drought in Tasmania in 2009. This may have had unintended influence on the outcomes of questionnaire measures and the content of interviews. Demoralisation refers to a lack of hope in the future and is a scale that may have been influenced by the stage of drought that farmers were in. Two participants expressed a lack of hope for the future for example a male farmer stated the following when considering passing the farm onto his son:-

There's still a tremendous amount of uncertainty. They say if we get a series of good or even average years, and we can cut the debt and get some surplus capitol to spend on things then ah, yep I can see a future in it. But if we drop into another series of droughts then I can't see any future, and, the, all the talk about to produce double the amount of food, ah, is getting harder and harder - Male farmer

Whether or not scores and prevalence of comments related to a lack of hope would have differed in the midst of drought remains unknown, however it would have been interesting to get a picture of demoralisation prior to the drought breaking.

Participants may have experienced a renewed hope that might not have presented prior to this relief. For this reason demoralisation might be less useful in the context of the current study, recovery from drought, but still an important construct when considering distress as a result of drought.

Resilience plays an important role in endurance and recovery and as a process of bouncing back and is therefore an important aspect of the experiences in the current study. The advantages of interviewing participants meant that a comprehensive picture of the process of recovery could be attained. Although drought had ended, it was evident that a degree of suffering and hardship remaining but participants continued to manage and cope with these stressors and find meaning and value in their work. Resilience in this context is not a measure that can be administered but a process that was evolving as individuals rebuild resources and recover following the prolonged resource drain caused by drought. Sticking strictly to the concept of resilience as described by the Connor Davidson Resilience Scale would have limited the picture of resilience that emerged from the study. Remaining open to the data in this study enabled a more enriched picture from the data and a more descriptive understanding of experience and resilience in the recovery from drought.

Sense of coherence was initially considered as a concept that might help to explain the different approaches farmers take to cope with drought. SOC is considered to influence the appraisal of situations and therefore potentially plays a role in the varying impacts that drought has on individuals. Interestingly in the current study, scores on the sense of coherence scale were similar with all participants scoring moderately in regards to the total possible SOC score. Although there is little research on sense of coherence and coping with weather events such as drought, there has been previous research looking at work related factors. A study by Holmberg, Thelin and Stiernstom (2004) on rural men in Sweden found that those with a greater sense of coherence are less likely to experience work as uncontrollable and demanding (Holmberg, et al., 2004). Given the nature of farming was expressed

by participants as uncontrollable and uncertain, this scale may be less useful in explaining differences within this population.

Following from the discussion above, another area of consideration in the current study was the use of questionnaires in qualitative research. Although questionnaires can be useful in the representation of an individual, they can also be limiting. Questionnaires influence data through preconceived ideas of the variable being tested. The variables are defined in a specific way, assessed accordingly and can skew data, or force its presentation through dichotomies of high and low. In the current study for example, there were a range of resilience levels present in the current study. Through discussion of the experience of drought with each individual, there was a resilience, sometimes qualitatively different, that was present for each individual. For this reason the phenomenological analysis set aside scores on questionnaires to better explore experience of drought through stories. This approach does not assume knowledge but remains open to the range of possible influences in the exploration of phenomena, and was best suited to the research question of the current study.

Phenomenological research is an approach that explores phenomenon through the lived experience. It is not without limitation and one such limited is the truthfulness and forthcomingness of the individuals being interviewed. If a participant is deceitful in their description of the phenomenon, then it is not the authentically experiential structure that is revealed but the contrived phenomenon how the person has presented it. In saying this, all research dependent on participant accounts are equally as susceptible to this vulnerability. Triangulation is one method of attenuating the potential for this type of error. The number of participants, the

length of interviews and the use of questionnaires help to counter this in the current study, however, it can never be completely ruled out in any research.

Stressed in the beginning of this study is the necessity for qualitative research to meet validity criteria, which ensures show sensitivity to context, commitment and rigour, coherence and transparency, and impact and importance (Smith, 2008). The way in which these criteria were addressed by the current study is listed in Table 35 on the following page.

Table 35: *Validity Achievement in the Current Study*

Validity Criteria	Achievement in the current study
Sensitivity to Context	Research question to meet a gap in the literature: What is the subjective experience of drought in the context of climate change in Tasmania? How does this relate to stress and coping research? How does this relate to research existing with regard to the experience of drought? Participants were given the choice of when and where interviews were discussed and determined the majority of the content of these interviews.
Commitment & Rigour	Interviews of ~1 hour and from 13 participants to cover all important aspects of experience as determined by interviewees. In depth analysis involving several reiterations of the data Consideration of a variety of models for which to arrange and organise the data.
Coherence & Transparency	Process of analysis discussed in text and through appendices Data presentation revised several times in process of analysis and in consultation with a supervisor. Qualitative and quantitative approaches considered and reflected upon throughout analysis and discussion.
Impact & Importance	Described throughout the results and discussion sections.

Directions for Future Research

The current study explored the experience of drought at a time where farmers were recovering from the prolonged stressors that had preceded them. These farmers had experienced relief in the form of rain and regeneration of grass and life on the farm, however were still in a mode of catch up. It would have been interesting to explore the experience of drought at various time points with each individual, including the lead up to drought, throughout drought and following recovery. This would have enabled a better exploration of coping as a preparatory as well as a reactive effort to manage stress. A replication of the phenomenological method of the current study in different rural groups, and in relation to different climate and environmental changes would also be useful order to substantiate findings of the current study.

Although exploration of drought and coping was the focus of the current study, there was no directly enquiry about the presence of other constructs such as hardiness and positive emotion through drought. Considering the research emerging on the benefits of positive emotion and their role in coping, it would be interesting to explore the presence of positive emotion throughout prolonged stress such as that presented to farmers in drought. Assuming the adaptive qualities of such emotions, strategies to enhance these emotions could also be explored and followed to better determine their role in coping with extended stressors.

Summary

Each story that is presented in this study is unique, giving insight into the individual as well as the nuances of rural life and complexities that make up the human experience. Although differences were apparent, there were strong

commonalities between participants in their descriptions of farming in drought. The prominent themes emerging in the current study were those of social connectedness, positivity, reflective practice, preparedness, perseverance and solastalgia. These themes depict tales of struggle and hardship as well as strength, community, resilience and perseverance. These are stories of survival and even growth from an experience of chronic stress as presented to farmers in drought.

References

- Albrecht, G. (2005). 'Solastalgia' a new concept in health and identity, *Philosophy Activism Nature*, **3**, 41-55.
- Albrecht, G. (2006). Solastalgia, *Alternatives Journal*, **4**, 34-36.
- Albrecht, G., Satore, G., Connor, L., Higginbotham, N., Freeman, S., Kelly, B., Stain, H., Tonna, A. & Pollard, G. (2007). Solastalgia: The distress caused by environmental change, *Australasian Psychiatry*, **15**, S95-99.
- Antonovsky, A. (1979). *Health, Stress and Coping*. San Francisco: Jossey-Bass Publishers.
- Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion, *Health Promotion International*, **11**, 11-18.
- Antonovsky, A. (1993). The structure and properties of the sense of coherence scale, *Social Science Medicine*, **36**, 725-733.
- Antony, M., Beiling, P., Cox, B., Enns, M. & Swinson, R. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample, *Psychological Assessment*, **10**, 176-181.
- Aspinwall, L. & Taylor, S. (1997). A stitch in time: Self-regulation and proactive coping, *Psychological Bulletin*, **121**, 417-436.
- Becker, C., Glascoff, M. & Felts, M. (2010). Salutogenesis 30 years later: Where do we go from here?, *International Electronic Journal of Health Education*, **13**, 25-32.
- Berry, H., Kelly, B., Hanigan, I., McMichael, A., Welsh, J., & Kjellstrom, T. (2008). *Rural Mental Health Impacts of Climate Change*, Garnaut Climate Change Review.

- Bi, P. & Parton, K. (2008). Effect of climate change on Australian rural and remote regions: What do we know and what do we need to know? *Australian Journal of Rural Health*, **16**, 2-4.
- Bigbee, J. (1985). Hardiness: A new perspective in health promotion, *The Nurse Practitioner*, **10**, 51, 54-56.
- Bolton, G. (2010). *Reflective Practice, Writing and Professional Development* (3rd edition). California: SAGE publications.
- Bonnano, G. (2004). Loss, trauma and human resilience: Have we underestimated the human capacity to thrive under extremely aversive events?, *American Psychologist*, **59**, 20-28.
- Bureau of Meteorology (2009), *Living with Drought*, BOM. Retrieved March 24, 2009 from <http://www.bom.gov.au/climate/drought/livedrought.shtml>
- Caldwell, K. & Boyd, C (2009). Coping and resilience in farming families affected by drought, *Rural and Remote Health*, **9**, 1088, Retrieved April 6, 2009 from <http://www.rrh.org.au/>
- Carver, C., Scheier, M. & Segerstrom, S. (2010). Optimism, *Clinical Psychology Review*, **30**, 879-889.
- Clarke, D & Kissane, D (2002). Demoralisation: its phenomenology and importance, *Australian and New Zealand Journal of Psychiatry*, **36**, 733-743.
- Clarke, D., Kissane, D., Trauer, T & Smith, G. (2005). Demoralisation, anhedonia and grief in patients with severe physical illness, *World Psychiatry*, **4**, 96-105.
- Compton, W. (2005). *Introduction to positive psychology*. Australia: Thomson/Wadsworth.

- Connor, K. & Davidson, J. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC), *Depression and Anxiety*, **18**, 76-82.
- Dean, J. & Stain, H. (2007). The impact of drought on emotional wellbeing of children and adolescents in rural and remote NSW, *The Journal of Rural Health*, **23**, 356-364.
- Department of Agriculture, Fisheries and Forestry. Exceptional Circumstances. Retrieved March 31, 2009 from http://www.DAFF.gov.au/drought_links
- Department of Climate Change and Energy Efficiency (2009), *Tasmania: Summary of Projected Impacts*. Retrieved March 25 209 from <http://climatechange.gov.au/impacts/regions/tas.html>
- Eriksson, M. & Lindstrom, B. (2005). Validity of Antonovsky's sense of coherence scale: a systemic review, *Journal of Epidemiology and Community Health*, **59**, 460-466.
- Folkman, S. (2008). The case for positive emotions in the stress process, *Anxiety, Stress & Coping*, **21**, 3-14.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample, *Journal of Health and Social Behavior*, **21**, 21 9-239.
- Folkman, S. & Moskowitz, J. (2007). 'Positive affect and meaning-focused coping during significant psychological stress'. in Hewstone, M., Schut, H., de Wit, J., van den Bos, K. & Stroebe M. (Eds.), *The scope of social psychology: Theory and applications* (pp. 193–208). Hove, UK: Psychology Press.
- Fredrickson, B. (1998). What good are positive emotions? *Review of General Psychology*, **2**, 300–319.

- Fredrickson, B. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions, *American Psychologist*, **56**, 218–226.
- Fredrickson, B. (2004). The Broaden-and-Build theory of positive emotions, *Philosophical Transactions of the Royal Society B: Biological Sciences*, **359**, 1367-1377.
- Freedy, J., Shaw, D., Jarrell, M. & Masters, C. (1992). Towards an understanding of the psychological impact of natural disasters: An application of the conservation of resources stress model, *Journal of Traumatic Stress*, **5**, 441-454.
- Frenz, A., Carey, M., Jorgensen, R. (1993). Psychometric evaluation of Antonovsky's Sense of Coherence Scale, *Psychological Assessment*, **5**, 145-153.
- Fritze, J., Blashki, G., Burke, S. & Wiseman, J. (2008). Hope, despair and transformation: Climate change and the promotion of mental health and wellbeing [Electronic version], *International Journal of Mental Health Systems*, **2**, 13. Retrieved April 6, 2009 from <http://www.ijmhs.com/content/2/1/13>
- Greenhill, J., Mildenhall, D. & Rosenthal, D. (2009). Ten ideas for building a strong Australian rural health system, *Rural and Remote Health*, **9**, (online) 1206.
- Hayes, S., Strosahl, K. & Wilson, K. (2003). *Acceptance and Commitment Therapy: And experiential approach to behaviour change*. New York: Guilford Press.
- Hegney, D., Buikstra, E., Baker, P., Rogers-Clark, C., Pearce, S., Ross, H., King, C. & Watson-Luke, A. (2007). Individual resilience in rural people: a Queensland study, Australia, *Rural and Remote Health*, **7**, 620 (online).

- Henry, J. & Crawford, J. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample, *British Journal of Clinical Psychology*, **44**, 227-239.
- Hobfall, S. (1988). *The ecology of stress*, New York: Hemisphere Publishing Corporation.
- Hobfall, S. (1989). Conservation of resources: A new attempt at conceptualizing stress, *American Psychologist*, **44**, 513-524.
- Hobfoll, S. (2002). Social and psychological resources and adaptation, *Review of General Psychology*, **6**, 307-324.
- Holmberg, S., Thelin, A. & Stiernstrom, E. (2004). Relationship of sense of coherence to others psychosocial variables, *European Journal of Psychological Assessment*, **20**, 227-236.
- Horton, G., Hanna, L. & Kelly, B. (2010). Drought, drying and climate change: Emerging health issues for ageing Australians in rural areas, *Australasian Journal on Ageing*, **29**, 2-7.
- Kashdan, T. & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychological Review*, **30**, 467-480.
- Kissane, D., Wein, S., Love, A., Qing Lee, X., Lee Kee, P. & Clarke, D. (2004). The Demoralisation Scale: A report of its development and preliminary validation, *Journal of Palliative Care*, **20**, 269-277.
- Kobasa, S. (1979). Stressful life events, personality, and health: An inquiry into hardiness, *Journal of Personality and Social Psychology*, **37**, 1-11.
- Lazarus, R. (1993). Coping theory and research: Past, present and future, *Psychosomatic Medicine*, **55**, 234-247.

- Lazarus, R. & Folkman, S. (1984). *Stress, appraisal, and coping*, New York: Springer Publishing Co.
- Leipold, B. & Greve, W. (2009). Resilience: A conceptual bridge between coping and development, *European Psychologist*, **14**, 40-50.
- Lindstrom, B. & Eriksson, M. (2005). Salutogenesis, *Journal of Epidemiological Community Health*, **59**, 440-442.
- Lindström, B. & Eriksson, M. (2006) Contextualizing salutogenesis and Antonovsky in public health development, *Health Promotion International*, **21**, 238-244.
- Lovibond, S. & Lovibond, P. (1995). Manual for the depression anxiety stress scales. Sydney: Psychology Foundation.
- Luthar, S. & Cicchetti, D. (2000). The construct of resilience: Implications for interventions and social policies, *Development and Psychopathology*, **12**, 857-885.
- Maddi, S. (2002). The story of hardiness: Twenty years of theorising, research and practice, *Consulting Psychology Journal: Practice and Research*, **54**, 175-185.
- Maddi, S. (2005). On Hardiness and other pathways to resilience, *American Psychologist*, **60**, 261-262.
- Maddi, S. & Hightower, M. (1999). Hardiness and optimism as expressed in coping patterns, *Consulting Psychology Journal: Practice and Research*, **51**, 95-105.
- Maddi, S. & Kobasa, S. (1984). *The hardy executive: Health under stress*. Homewood, IL: Dow Jones-Irwin.
- Mullane, M., Dooley, B., Tiernan, E. & Bates, U. (2009). Validation of the Demoralization Scale in an Irish advanced cancer sample, *Palliative Support and Care*, **7**, 323-330.

- Nicholls, N. & Collins, D. (2006). Observed climate change in Australia over the past century, *Energy & Environment*, **17**, 1-12.
- Ong, A., Bergerman, C., Bisconti, T. & Wallace, K. (2006). Psychological resilience, positive emotion and successful adaptation to stress in later life, *Journal of Personality and Social Psychology*, **91**, 730-749.
- Peterson, C. (2000). The future of optimism, *American Psychologist*, **55**, 44-55.
- Peterson, C. Park, N. & Seligman, M. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies*, **6**, 25-41.
- Roisman, G. (2005). Conceptual clarifications in the study of resilience, *American Psychologist*, **60**, 264.
- Ryan, R. & Deci, E. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being, *Annual Review of Psychology*, **52**, 141-166.
- Sartore, G., Kelly, B., Stain, H., Albrecht, G. & Higginbotham, N. (2008). Control, uncertainty, and expectations for the future: a qualitative study of the impact of drought on a rural Australian community, *Rural and Remote Health*, **8** (online), 950.
- Scheier, M. & Carver, C. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update, *Cognitive Therapy and Research*, **16**, 201-228.
- Scheier, M., Weintraub, J. & Carver, C. (1986). Coping with stress: Divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology*, **51**, 1257-1264.

- Schwarzer, R. & Luszczynska, A (2008). Reactive, anticipatory, preventative and proactive coping: A theoretical distinction, *The Prevention Researcher*, **14**, 22-24.
- Seery, M., Holman, E. & Silver, R. (2010). Whatever does not kill us: Cumulative lifetime adversity, vulnerability and resilience, *Journal of Personality and Social Psychology*, **99**, 1025-1041.
- Smith, J. (Ed.) (2008). *Qualitative Psychology: A practical guide to research methods* (2nd ed.). London: SAGE publications.
- Solberg Nes, L., & Segerstrom, S. (2006). Dispositional optimism and coping: A meta-analytic review, *Personality and Social Psychology Review*, **10**, 235-251.
- Stain, H., Kelly, B., Lewin, T., Higginbotham, N., Beard, J. & Hourihan, F. (2008). Social networks and mental health among farming populations, *Social Psychiatry Psychiatric Epidemiology*, **43**, 843-849.
- Thoits, P. (1995). Stress, coping and social support processes: Where are we? What next? *Journal of Health and Social Behavior*, (Extra issue), 53-79.
- Townsent, K. & McWhirter, B. (2005). Connectedness: A review of the literature with implications for counselling, assessment and research, *Journal of Counseling and Development*, **83**, 191-201.
- Trigg, J. (2007). *Characteristics of a disaster-resilient community: A guidance note, a report for the DFID Disaster Risk Reduction Interagency Coordination Group*. Retrieved March 13, 2011 from www.phree-way.org/resources/documents/characteristics-resilient.doc

- Waterman, A., Schwartz, S. & Conti, R. (2008). The implications of two conceptions of happiness (hedonic enjoyment and edaimonia) for the understanding of intrinsic motivation, *Journal of Happiness Studies*, **9**, 41-79.
- White, D. (2000). Implementing drought policy in Australia, *Agricultural Science*, **13**, 27-32.
- Wood, A., Froh, J. & Geraghty, A. (2010). Gratitude and well-being: A review and theoretical integration, *Clinical Psychology Review*, **20**, 890-905.
- Yu, X. & Zhang, J. (2007). Factor analysis and psychometric evaluation of the Connor-Davidson Resilience Scale (CD-RISC) with Chinese people, *Social Behavior and Personality*, **35**, 19-30.
- Zamani, G., Gorgievski-Duijvesteijn, M. & Zarafshani, K. (2006). Coping with drought: Towards a multilevel understanding based on conservation of resources theory, *Human Ecology*, **34**, 677-692.

Appendices

COPY

MEMORANDUM

Private Bag 01 Hobart
Tasmania 7001 Australia
Telephone (03) 6226 2764
Facsimile (03) 6226 7148
Marilyn.Knott@utas.edu.au
<http://www.research.utas.edu.au/index.htm>



HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

FULL COMMITTEE APPLICATION APPROVAL

5 August 2009

Dr Ali Maginness
Rural Clinical School
Private Bag 3513
Hospitals' Campus Brickport Road 7320

Ethics reference: H0010725

The experience of extreme weather, perception of climate change and coping in extended periods of drought.

Elysia Chase (Masters)

Dear Dr Maginness

The Tasmania Social Sciences HREC Ethics Committee approved the above project on 04 August 2009.

All committees operating under the Human Research Ethics Committee (Tasmania) Network are registered and required to comply with the *National Statement on Ethical Conduct in Human Research* (NHMRC 2007).

Therefore, the Chief Investigator's responsibility is to ensure that:

- 1) All researchers listed on the application comply with HREC approved application.
- 2) Modifications to the application do not proceed until approval is obtained in writing from the HREC.
- 3) The confidentiality and anonymity of all research subjects is maintained at all times, except as required by law.
- 4) Statement 5.5.3 of the National Statement states:

Researchers have a significant responsibility in monitoring approved research as they are in the best position to observe any adverse events or unexpected outcomes. They should report such events or outcomes promptly to the relevant institution/s and ethical review body/ies and take prompt steps to deal with any unexpected risks.

- 5) All participants must be provided with the current Information Sheet and Consent form as approved by the Ethics Committee.

- 6) The Committee is notified if any investigators are added to, or cease involvement with, the project.
- 7) This study has approval for 4 years contingent upon annual review. A *Progress Report* is to be provided on the anniversary date of your approval. You will be sent a courtesy reminder closer to this due date.
- 8) A *Final Report* and a copy of the published material, either in full or abstract, must be provided at the end of project.

Yours sincerely

Emily Freeman

for

Ethics Executive Officer

Appendix B: Participant Consent Form

CONSENT FORM

Title of Project: The subjective experience of extreme weather, perception of climate change and coping in a drought population

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me prior to my consent and contact details have been provided to me for any enquires.
3. I understand that the study involves participating in a recorded interview and completing 4 questionnaires and this will take approximately 60-75 minutes to complete. I understand that interviews will be transcribed and that I will have access to these transcriptions to review and amend as necessary.
4. I understand that participation involves the risk(s) that the information discussed during the interview may elicit distressing thoughts and / or emotions, and that support will be provided if need be.
5. I understand that all research data will be securely stored on the University of Tasmania premises for five years, and will then be destroyed.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researchers will maintain my identity confidential and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I agree to participate in this investigation and give permission for Elysia Chase from the University of Tasmania in Hobart to contact me.
10. I understand that I may withdraw at any time without any effect, and if I so wish, may request that any data I have supplied to date be withdrawn from the research and returned to me, if this request is made before April 2010.

Name of Participant: _____

Phone number: _____

Signature: _____

Date: / / 20

Statement by Investigator

☐ I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation

If the Investigator has not had an opportunity to talk to participants prior to them participating, the following must be ticked.

☐ The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of investigator _____ Signature of investigator _____ Date _____

PARTICIPANT INFORMATION SHEET

SOCIAL SCIENCE/ HUMANITIES

RESEARCH

STUDY ON THE EXPERIENCE OF DROUGHT

Invitation

You are invited to participate in a research study into the impact of drought, perception of climate change and coping in farming families in the midlands of Tasmania. The study is being conducted by Elysia Chase as a Clinical Psychology Masters thesis under the supervision of Dr. Ali Maginness, Clinical Lecturer in Psychology with the Rural Clinical School, University of Tasmania.

1. 'What is the purpose of this study?'

The purpose of this study is to investigate the experience of drought in farming families, how these people are coping with the current stressors facing farmers, and to identify what factors might contribute to more effective approaches to living in drought.

2. 'Why have I been invited to participate in this study?'

You have been invited to join this study as you are a farm owner affected by drought in the Tasmanian midlands.

3. 'What does this study involve?'

Being part of study will involve participating in an interview with the researcher, and discussing what you perceive to be the current stressors facing farmers in the Midlands, and your perception of climate change. This interview will be recorded, and it is expected that the interview will last approximately 45- 60 minutes. Following the interview you will be asked to complete 4 short questionnaires assessing coping, health and well being. The whole process should take approximately 60-75 minutes. This information will be kept in a locked filing cabinet at the University of Tasmania for five years, after which time it will be destroyed.

It is important that you understand that your involvement in this study is voluntary. While we would be pleased to have you participate, we respect your right to decline. There will be no consequences to you if you decide not to participate. If you decide to discontinue participation, you may do so without providing an explanation. You may choose to withdraw all data from the study at any time up until write-up commences in April 2010. All information will be treated in a confidential manner, and your name will not be used in any publication arising out of the research. All of the research will be kept in a locked cabinet in the School of Psychology in Hobart for five years, after which time it will be destroyed.

4. Are there any possible benefits from participation in this study?

If we are able to take the findings of this small study and link them with a wider study, it may lead to increased understanding as to the farmers' perception of climate change and their experience of drought. This information can then be used to identify effective coping strategies and the development of programs that can be implemented to assist others.

5. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study. However, if you find that the interview brings up distressing thoughts or emotions you will be provided with the contact details of the researcher and of agencies that provide help and support on this information sheet.

6. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact Elysia Chase, echase@utas.edu.au or Dr Ali Maginness (ph 6430 4585/ 0438 824 330) and they will be able to discuss the project with you. Following transcription a copy of your interview will be made available to review and amendment. Once we have analysed the information we will be mailing / emailing you a summary of our findings. You are welcome to contact us at that time to discuss any issue relating to the research study.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study should contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [H10725].

Thank you for taking the time to consider this study.

If you wish to take part in it, please sign the attached consent form and contact Elysia Chase or Ali Maginness on the number or email address above.

This information sheet is for you to keep.

Agencies that can help

Beyond Blue: 1300 224 636 www.beyondblue.org.au
National 24 hour hotline on depression and anxiety (local call).

Lifeline Telephone Counselling: 13 11 14 www.lifeline.org.au
Free, confidential and anonymous 24 hour counselling service, information and support.

General Practitioner

You may like to discuss your situation with your GP who can then refer you to an appropriate agency.

University Psychology Clinic, Hobart: 03 6226 2805

Free service. This clinic is staffed by University students on professional placement as part of their postgraduate studies in Psychology.

Appendix D: *Interview Schedule*

Phenomenological research requires a relatively open approach to interviews. To start the interview off however, we will be asking the following question:-

“We’re interested in how farming families are responding to drought situations. Tell me how things are for you?”

From this point the participant will be encouraged to expand on their answer, and that the discussion will cover the key areas of interest (work, relationships & family, community). If necessary the researcher will prompt the participant to discuss these areas, and will use open questions to encourage this. And examples of this type of question is -

“What about your work situation?”

To explore coping responses to the current situation, if this does not naturally arise during the interview, the researcher will prompt the participant to discuss this with the question –

“What sort of things have you found have helped you?”

In addition to this, participants will be encouraged to expand on their perceptions, opinions and beliefs pertaining to climate change. The researcher will not offer comment as whether or not this is occurring but seek to elicit commentary on what each participant considers is happening, particularly in relation to the current drought. If needing prompting, the following question will be used as a prompt -

“Climate change is something that is coming up a lot in the media recently. What are your thoughts about climate change?”

Appendix E: Questionnaire Package

Orientation to Life						
Please circle the answer that is most descriptive of you						
1	Do you have the feeling that you don't really care about what goes on around you?	Very seldom or never 1	2	3	4	Very often 5
2	When you talk to people, do you have the feeling that they don't understand you?	Never happened 1	2	3	4	Always happens 5
3	Has it happened that people whom you counted on disappointed you?	Never happened 1	2	3	4	Always happens 5
4.	Until now your life has had:	No clear goals or purpose at all 1	2	3	4	Very clear goals and purpose 5
5.	Do you have the feeling that you're being treated unfairly?	Very often 1	2	3	4	Very seldom or never 5
6.	Do you have the feeling that you are in an unfamiliar situation and don't know what to do?	Very often 1	2	3	4	Very seldom or never 5
7	Doing the things you do every day is:	A source of deep pleasure and satisfaction 1	2	3	4	A source of pain and boredom 5
8.	Do you have very mixed-up feelings and ideas?	Very often 1	2	3	4	Very seldom or never 5
9.	Does it happen that you have feelings inside you would rather not feel?	Very often 1	2	3	4	Very seldom or never 5
10	Many people – even those with a strong character – sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?	Never 1	2	3	4	Very often 5
11.	When something happened, have you generally found that:	You overestimated or underestimated its importance 1	2	3	4	You saw things in the right proportion 5
12.	How often do you have the feelings that there's little meaning in the things that you do in your daily life?	Very often 1	2	3	4	Very seldom or never 5
13.	How often do you have feelings that you're not sure you can keep under control?	Very often 1	2	3	4	Very seldom or never 5

Resilience						
Please circle the answer that is most descriptive of you.		Not true at all	Rarely true	Sometimes true	Often true	True nearly all of the time
1.	I am able to adapt to change	0	1	2	3	4
2.	I have close and secure relationships	0	1	2	3	4
3.	Sometimes fate and God can help me	0	1	2	3	4
4.	I can deal with whatever comes my way	0	1	2	3	4
5.	Past success give me confidence for new challenges	0	1	2	3	4
6.	I see the humorous side of things	0	1	2	3	4
7.	Coping with stress strengthens me	0	1	2	3	4
8.	I tend to bounce back after illness or hardship	0	1	2	3	4
9.	Things happen for a reason	0	1	2	3	4
10.	I give my best effort no matter what	0	1	2	3	4
11.	I can achieve my goals	0	1	2	3	4
12.	When things look hopeless, I don't give up	0	1	2	3	4
13.	I know where to turn for help	0	1	2	3	4
14.	Under pressure, I can focus and think clearly	0	1	2	3	4
15.	I prefer to take the lead in problem solving	0	1	2	3	4
16.	I am not easy discouraged by failure	0	1	2	3	4
17.	I think of myself as a strong person	0	1	2	3	4
18.	I can make unpopular or difficult decisions	0	1	2	3	4
19.	I can handle unpleasant feelings	0	1	2	3	4
20.	I sometimes have to act on a hunch	0	1	2	3	4
21.	I have a strong sense of purpose	0	1	2	3	4
22.	I need to be in control of my life	0	1	2	3	4
23.	I like challenges	0	1	2	3	4
24.	I work to attain my goals	0	1	2	3	4
25.	I pride yourself in my achievements	0	1	2	3	4

Demoralisation						
For each statement below, you are asked to indicate how strongly the statement has applied to you over the last two weeks by circling the corresponding number. Over the past two weeks how often have you felt...		Never	Seldom	Sometimes	Often	All the Time
1.	There is a lot of value in what I can offer others.	0	1	2	3	4
2.	My life seems to be pointless.	0	1	2	3	4
3.	There is no purpose to the activities in my life.	0	1	2	3	4
4.	My role in life has been lost.	0	1	2	3	4
5.	I no longer feel emotionally in control.	0	1	2	3	4
6.	I am in good spirits.	0	1	2	3	4
7.	No one can help me.	0	1	2	3	4
8.	I feel that I cannot help myself.	0	1	2	3	4
9.	I feel hopeless.	0	1	2	3	4
10.	I feel guilty.	0	1	2	3	4
11.	I feel irritable.	0	1	2	3	4
12.	I cope fairly well with life.	0	1	2	3	4
13.	I have a lot of regret about my life.	0	1	2	3	4
14.	Life is no longer worth living.	0	1	2	3	4
15.	I tend to feel hurt easily.	0	1	2	3	4
16.	I am angry about a lot of things.	0	1	2	3	4
17.	I am proud of my accomplishments.	0	1	2	3	4
18.	I feel distressed about what is happening to me.	0	1	2	3	4
19.	I am a worthwhile person.	0	1	2	3	4
20.	I would rather not be alive.	0	1	2	3	4
21.	I feel sad and miserable.	0	1	2	3	4
22.	I feel discouraged about life.	0	1	2	3	4
23.	I feel quite isolated or alone.	0	1	2	3	4
24.	I feel trapped by what is happening to me.	0	1	2	3	4

Depression Anxiety Stress Scale					
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you <i>over the past week</i> . There are no right or wrong answers. Do not spend too much time on any statement.		Did not apply to me at all	Applied to me to some degree, or some of the time	Applied to me a considerable degree, or a good part of time	Applied to me very much, or most of the time
1.	I found myself getting upset by quite trivial things	0	1	2	3
2.	I was aware of dryness of my mouth	0	1	2	3
3.	I couldn't seem to experience any positive feeling at all	0	1	2	3
4.	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness, in the absence of physical exertion)	0	1	2	3
5.	I just couldn't seem to get going	0	1	2	3
6.	I tended to over-react to situations	0	1	2	3
7.	I had feelings of shakiness (eg, legs going to give way)	0	1	2	3
8.	I found it difficult to relax	0	1	2	3
9.	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10.	I found that I had nothing to look forward to	0	1	2	3
11.	I found myself getting upset rather easily	0	1	2	3
12.	I felt that I was using a lot of nervous energy	0	1	2	3
13.	I felt sad and depressed	0	1	2	3
14.	I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	0	1	2	3
15.	I had a feeling of faintness	0	1	2	3
16.	I felt that I had lost interest in just about everything	0	1	2	3
17.	I felt I wasn't worth much as a person	0	1	2	3
18.	I felt that I was rather touchy	0	1	2	3
19.	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0	1	2	3
20.	I felt scared without any good reason	0	1	2	3
21.	I felt that life wasn't worthwhile	0	1	2	3

Appendix F: Process of Transforming Meaning Units from one Case into Organised Clusters of Information

Meaning units	Description	Free node
Money was tight I guess.	Expenses in drought and reduction in income	Appraisal of finances
a fence. Spending thousands on that, well that was so many tonne of grain to keep the sheep alive, so yeah	Prioritisation of expenses	Appraisal of finances
we had a bumper harvest this year, and we had excess oats and they were \$80 tonne, and we had paid nearly 480 through the drought and 500 and that for wheat and barley	Higher expenses in drought	Appraisal of finances
most people have gone into their eyeballs in debt so they're still not doing anything radical	Normalisation of financial situation following drought	Normalisation
we do a bit of contracting, although we've shut down. We just do this area now. There is no money in travelling.	Various work to buffer financial impact of drought	Buffer work

Appendix G: Process of Integrating Free nodes into Tree-node Hierarchical Structures and Major Themes

Free Nodes	Tree node organisation	Major theme	Theme organisation
Appraisal of finances	critical awareness – appraisal of finances	Preparedness	Preparedness – critical awareness – appraisal of finances
Appraisal of stock feed	critical awareness – appraisal of stock feed	Preparedness	Preparedness – critical awareness – appraisal of stock feed
Feeling accountable and responsible	critical awareness - Feeling accountable and responsible	Preparedness	Preparedness – Feeling accountable and responsible
Self accountability	Feeling accountable and responsible – Self accountability	Preparedness	Preparedness – Feeling accountable and responsible – self accountability
Buffer work	Reserves – buffer work	Preparedness	Preparedness – Reserves – buffer work
Normalisation	Comparison to others - Normalisation	Social Connectedness	Social Connectedness - Comparison to others - Normalisation
Altruism	Altruism	Positivity	Positivity - Altruism
Having meaning and purpose	Having meaning and purpose	Positivity	Positivity - Having meaning and purpose

Appendix H: *Emergent Themes and the Number of Associated Sources and References*

Major Theme	Constituent Theme	Sources	Refs
Social	Collaboration	6	18
Connectedness	Community	10	38
	Awareness of Community events and the benefits of events	5	16
	Comparison to others	10	68
	Favourable comparison Normalisation		
	Relationships	4	8
	Social support	11	42
	Feeling understood?	8	16
Solastalgia?	Social resources	10	30
	Visual reminders	8	16
Positivity	Altruism (Compassion)	5	20
	Appreciation	7	23
	Compassion	7	22
	Care about stock (Compassion)	5	8
	gratitude	5	21
	acceptance	8	25
	Hope for the future - optimism	7	17
	Humour	6	13
	Having meaning and purpose	11	41
	Positivity - optimism	11	34
	Work-life balance	12	66
Reflective Practice/versatility	Adaptability	9	27
	Applying broad skill base	5	16
	Calculated risk taking	10	41
	Diversity	6	18
	Flexibility	5	17
	Hibernation	5	8
	Resourcefulness	5	10
	Trying new things	6	18
	Optiunism	4	13
	Prioritisation	4	7
	Learning	9	25
	Applying past learning		
	Learning from experience		
	Education and training		
	Learning from others		

Appendix H Cont.

Major Theme	Constituent Theme		Sources	Refs
Preparedness	Accessing information		8	23
	Critical awareness	Understanding and acceptance of circumstances	13	148
		Appraisal of water resources		
		Appraisal of stock feed resources		
		Appraisal of financial resources		
		Feeling responsible and accountable – Guilt and shame	5	13
		Feeling responsible and accountable – regret		
	Reserves	Financial reserves	11	54
		Buffer stock		
		Buffer crops		
Perseverance		Buffer work		
	Sustainable practice proactivity		9	47
	commitment		9	34
	Disappointment		2	4
	Sustained focus with little reward		6	7
			8	22
		No break from work and drought	5	12
		Persistence	6	17
	Physical endurance		3	12
	Unpredictability and uncertainty		9	38
	confidence		7	13

Appendix I: Major and Constituent Themes Along with Facets.

Major Theme	Constituent Theme	Facet
Preparedness	Critical Awareness <i>Appraisal of Resources</i>	Importance of Resources
		Unavailability in Drought
		Limited
		Very Expensive
		Time Consuming
		Need to do More
		Still Recovering
		Increase in Expenses
		Reduced Income
		Need to Prioritise Expenses
	Critical Awareness <i>Comparison to Others</i>	Comparison of situation
		Comparison of stock management to others
		Normalisation of experience through drought
	Critical Awareness <i>Understanding of Circumstances</i>	Drought impact on community
		Influence of stock management
		Weather patterns have changed
	Critical Awareness <i>Accessing Information</i>	Using professionals as information
		Accessing seminars
		Selectively accessing information
	Critical Awareness <i>Feeling accountable and responsible</i>	Self as responsible
		Regret
	Reserves & Buffers	Financial reserves
		Buffer system
		Diversity

Major Theme	Constituent Theme	Facet
<i>Preparedness cont.</i>	Sustainable Practice	Practices to preserve land
		Reducing water waste
		Financial sustainability
		Working with land and weather
	Proactivity	Forward financial planning
		Forward business planning
		Acting quickly
Positivity	Work-Life Balance	Sport as a break and opportunity to relax with friends
		Dust storms as an opportunity to take a break
		Taking holidays through drought for the break
		Benefits of taking a break
		Necessity of taking a break
		Taking weekends rather than working endlessly
		Not being solely focussed on the farm.
		Optimism
	Focus on positive aspects of experience	
	Focus on positive – it could be worse	
	Self description as positive	
	Hope for the future	
	Favourable comparison to others	
	Meaning & Purpose	Farm work as challenging and enjoyable
		Farming as a lifestyle choice
		Work as an asset being developed
		The farm as something to pass on to children
		Seeing the greater good in farming
		Compassion
	Desire to share relief from drought	
	Care about the welfare of stock	
	Acceptance	No point worrying about what cannot be changed

Major Theme	Constituent Theme	Facet
Social Connectedness	<i>Positivity cont.</i>	Taking one day at a time
		Acceptance of rural decline
		Work continues even in drought
		Drought as a part of life
		Matter of factual about survival of the farm
		Matter of factual about life and death
	Gratitude	Appreciation of assets
		Appreciation of assistance
	Humour	Use of humour to lighten mood
	Social Support	Friends as a distraction and source of mutual support
		Relaxation and distraction through socialising
		Family as support
		Giving support to others
		Feeling understood
		Rural-urban divide in support and understanding
	Community	Organisation of community events
		Involvement in community groups
		Participation in community events
		Benefits of community events
	Collaboration	Working collaboratively with others
		Bouncing ideas and information off others
Reflective Practive	Adaptability & Flexibility	Change in people management in drought
		Change in stock breeding in drought
		Adaptation to make the most of market demands
		Making business decisions to best suit conditions
		Flexibility in sale price
		Adaptation to drier climate
		Personal change if unable to continue farming
		New crops to maximise income
		New strategies to minimise expenses

Major Theme	Constituent Theme	Facet
Perseverance	Applying broad skill base	Multi-skilled
		Having other work in drought
	Calculated risk taking	Importance of good decisions
		Weighing up decisions
		Setting limits
		Risk taking
		Seeking advice to help make decisions
	Learning	Learning from experience
		Education and training
		Learning from family
		Learning from other farmers
		Learning from professionals and other farmers
	Sustained Focus with Little Reward	No break
		Long hours and repetitive work
		No results
	Tolerance of unpredictability and uncertainty	Managing uncertainty
		Unpredictability
		Tolerance
Solastalgia	Change- Social Resources	Loss of social mass in rural towns
		Lack of sports club members
		Lack of members for community groups
		Lack of workforce
		Visual loss
	Visual Reminders.	Constant visual reminder of drought
		Impact of visual on wellbeing