The Role of Farming Families in Future Economic and Community Sustainability

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Abstract: For the past 25 years the number of farming families in Australia has been in steady decline. This presents concerns for the sustainability of rural communities due to the significant role the farming industries have in local economic stimulation. Reducing the decline and stabilising the farming family population requires consideration of the health and well-being of this population. Participants (N=278) were recruited from across Australia and across different farming types to complete an online survey. Findings from K-Means Cluster analysis and Path Analysis suggest that the reasons people choose to continue farming act as a buffer for the unique challenges of the industry. Further, findings indicated that the work environment of the family farm had a significant impact on well-being. Outcomes included recommendations and strategies to improve health and well-being for farming families. As a result of these strategies, farming families may be retained in the industry, stabilising the population and improving the sustainability of rural communities.

Keywords: Resilience, Farming Families, Work-life Balance, Community-connectedness, Social Sustainability, Rural Health

The Australian agricultural and grazing industry has supported the national economy through industry exports and through the direct and indirect employment of hundreds of thousands of Australians (Australian Bureau of Agricultural Resource and Economics [ABARE] 2006). However, due to increasing competitiveness in domestic and international markets as well as the adversities faced in producing products, the sustainability of farming as an industry in Australia has come into question (ABARE 2006). Questions around sustainability may partly explain the noted decline in the number of farming families in Australia (decline of 30% since 1986), with fewer young people choosing farming as a career option (Australian Social Trends [Australian Bureau of Statistics—ABS] 2003). This trend is complimented by a general population migration of rural people to urban centres, a trend particularly evident for young people (Australian Social Trends [ABS] 2003). Such population trends may have contributed to the ageing farming workforce, with the median age of Australian farmers being 52 years. This ageing workforce presents concerns for an increased risk of injury and health problems for farmers, with research by Morton, Fragar, and Pollock (2006) highlighting a higher reported rate of injury in older farmers. The reduction in the number of rural and farming populations suggests that rural communities are diminishing both socially and economically. Social and economic sustainability is threatened due to fewer people present to sustain local businesses, social committees and organisations, which consequently reduce job opportunities and economic stimulation. This suggestion is consistent with research by Dixon and Welch (2001) who reported that the majority of Australian rural communities fall into the low socioeconomic bracket. To address these challenges avenues to improved sustainability need to be explored.

Though policies addressing sustainability have been implemented by governments at all tiers, these policies can often be conflicting. As most policies are aimed at biophysical sustainability, the lack of consideration of the interaction between social, economic, and ecological systems ultimately undermines the effectiveness of the policy and the achievement of sustainability (Dibden in Cocklin and Dibden 2005). For policies to be effective, proactive stances need to be made. For example, addressing the infrastructure of rural communities and building awareness, understanding, and knowledge of the challenges ahead may contribute to more effective policies. Infrastructure may include banks, schools, hospitals, social and sporting clubs, retail services, which usually decline with population decreases. Further, effective policies also need to consider the local economic downturn and population migration. These changes would not only allow for individuals to prepare for the hardships ahead but also for policy makers to have a greater understanding of the challenges faced by rural communities (Dibden in Cocklin and Dibden 2005).

Cocklin and Alston (2002) argue for increased capital as a solution to the decline in rural communities. Cocklin and Alston (2002) have identified five forms of capital; natural, human, social, institutional, and produced capital (Figure 1). Social capital entails productive networks, values, levels of trust, shared vision and purpose, and commitment to action by the community. Human capital refers to the quality of knowledge, skills, and general abilities of individuals in a community. The characteristics of human capital are assessed by an individual's quality of mental and physical health, their capacity to contribute to the community, and their level of social interaction (Cocklin and Alston 2002). Mental capital, which can be considered a subset of human capital, encompasses an individual's ability to be adaptive and to learn and develop skills and strategies (cognitive component) as well as being resilient and able to emotionally manage adversity (emotional component) (Beddington et al. 2008). Cocklin and Alston (2002) argued that social capital and human ability and action as elements of human capital are essential to ensure sustainability. This is further supported in findings by Beddington et al. (2008) who explored the relationship between mental capital and economic indicators. Beddington et al. (2008) argued if governments do not invest in environments that are conducive to building mental capital then community sustainability is at risk. This may occur as decreased mental capital is argued to result in disengagement from educational systems, behavioural problems, poor mental health, and reduced employment opportunities (Beddington et al. 2008).

As farming communities are a subset of rural communities, it can be argued that improving the sustainability of farming families and farming communities also includes social, human, and mental capital as essential elements. This requires consideration of farming family mental and physical health (links to human and mental capital) and well-being (links to social and mental capital in relation to improved community-connectedness). Identifying factors which protect and maintain the mental and physical health of farming families' needs the consideration of not only their health status but the resources that are available to farming families. For instance, farmers are thought to be resilient and have a unique set of coping skills and resources that allow them to manage the challenges of the lifestyle effectively (Larson and Dearmont 2002). These are valuable characteristics as can be demonstrated by research which has found that resilience and hardiness are associated with lower rates of illness when experiencing high levels of stress (Kobasa 1979). Research has also identified the importance of community connectedness in health outcomes. For example, research regarding social capital, a construct that involves a sense of community, has been shown to be positively related to individual well-being (Boyd et al. 2008). Research by Berry and Rodgers (2003) suggested that the link between social or community connectedness and mental health was mediated by the degree of trust the individual has within their community.

Therefore the presence of or high levels of resilience, hardiness and community-connectedness may be key determinants of the perception and outcomes of stress. Possessing these skills may decrease susceptibility to poor mental health and other negative health outcomes associated with high stress.
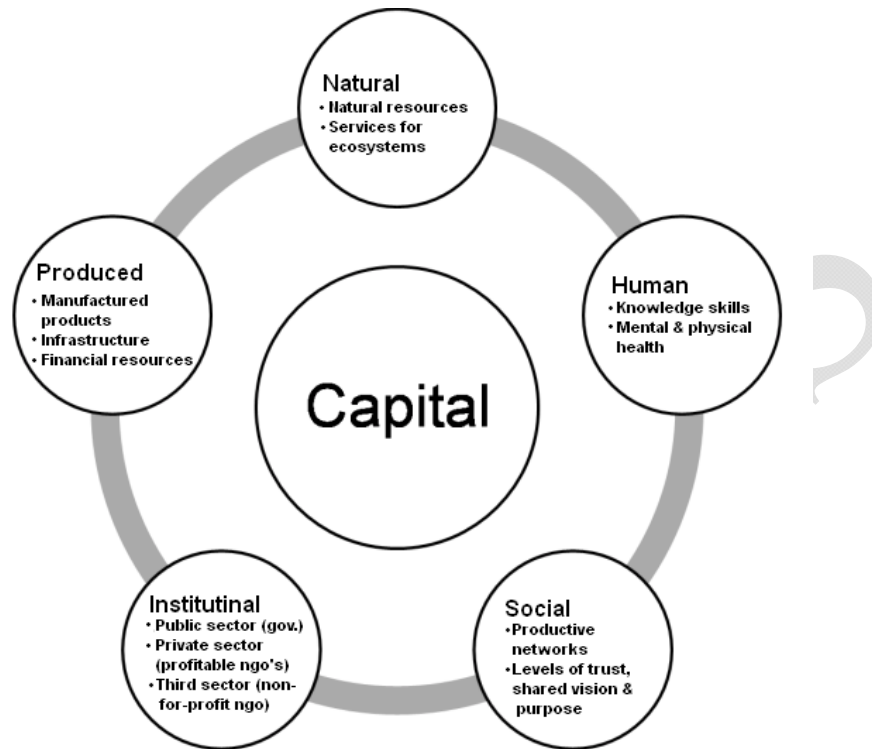

Figure 1: Five Types of Capital to Improve the Sustainability of Rural Communities

Despite these protective characteristics, rural and farming family populations present some concerning health statistics. For example, the rate of completed suicide for Australian male farmers is twice that of the national average, with 92 suicides thought to be committed each year (Page and Fragar 2002; Andersen et al. 2010). In addition, the Australian Institute for Health and Welfare (2008) reported that people within regional and remote areas were less likely to report good or excellent health than their major city counterparts. Furthermore, those in regional and remote areas were more likely to report experiencing injury, be overweight or obese, and drink harmful levels of alcohol in the short-term than their major city counterparts (AIHW 2008). The combination of these observed rates of poor physical and mental health with the limited access to health resources such as doctors, psychologists and hospitals in more regional and remote areas (Rygh and Hjortdahl 2007), suggests farmers as a population at risk of poor health and well-being. The identification of determinants for poor mental health amongst farmers and farming families has yet to be established. McShane and Quirk (2009) have proposed that the unique farming work environment should be considered as a major determinant of mental health and wellbeing due to the complex interaction of the work and home environment.

The conflict between the work and home domains for people in the workforce in general has been researched extensively, with researchers frequently noting the significant role that such conflict has upon the mental health, physical health, and life satisfaction of workers (Carlson,

Kacmar, and Williams 2000; Kopelman, Greenhaus, and Connolly 1983; Fletcher 1991). The farming family business is unique in that it can be characterised by a merging of the work and home environments. That is, farming family businesses often exist within the family domain and family members make up the core worker base. Thus the farming family work-home interface is typified by blurred boundaries and dual roles (Danes and Lee 2004; McShane and Quirk 2009). Unlike family business in an urban environment, work demands of farming family businesses are often erratic as they are partially dependent on factors which are consistently beyond individual control (e.g. soil quality, weather conditions). This high demand and low individual control of time and responsibilities from the work environment often results in work needs superseding family needs.

However there are similarities between urban and farming family businesses. One such similarity is the motivations of individuals who enter into such working environments. For instance, urban family businesses and home-based workers often enter into this form of work to benefit the family through greater flexibility of scheduling (Madsen 2003; Golden, Veiga, and Simsek 2006; Parasuraman and Simmers 2001). However, individuals in family businesses often sacrifice family time and report low family satisfaction (Parasuraman and Simmers 2001). Similarly, home-based workers report high levels of family-work conflict (Golden, Veiga, and Simsek 2006). Given the similar characteristics of the work-home interface, these factors are likely to be evident in a farming family work environment. Heightened role confusion and the inability to escape tension from one domain to the next are also factors shared by the family business and farming family business structures. Such factors are likely contributors to the increased levels of conflict that are reported in the farming family business (Danes et al. 2000; Danes and Lee 2004).

The considerable impact that the farming work lifestyle will likely have on farming family health and well-being therefore emphasises the importance of focusing an investigation into determinants of farming family well-being from a work environment perspective. This will subsequently assist in the identification of those factors contributing to farm sustainability. Through improving farm sustainability through increased human and social capital, greater community-connectedness and rural sustainability may be achieved. The current research aims to identify those factors that contribute to and affect well-being and the resilience of the farming family population. Specifically, the following research questions will be explored:

- What factors negatively impact upon the well-being of farming families?

- What factors protect the well-being of farming families?

- How can this information be used to improve well-being; stabilise the decline in the number of farming families; and contribute to rural community sustainability?

Method

Participants

Individuals from farming families (N=278, Males=100, Females=178) were recruited from across Australia (Queensland=105, New South Wales=83, Victoria=45) to complete a questionnaire package which assessed determinants of well-being. Participants' age ranged from 22–77years (M=49.06, SD=12.34). The majority of individuals with the sample were married (85.5%) and most commonly reported 2 financially dependent children (20.9%). Approximately one-third of participants had completed an undergraduate degree and the farming business was typically structured as a family business with unpaid family employees

(24.5%) or a family business with paid external employees (20.8%). Approximately 60% of the sample had previously been or were currently involved in an intergenerational farming business. Many participants were involved in producing more than one type of product, however the leading produce types included broadacre cropping (26.7%), horticulture (25.6%), wool (22.0%), sheep meat (26.7%), and beef (43.0%).

Materials

Materials consisted of a questionnaire package in electronic and paper format and included scales of stressors, working environment, protective factors, psychological distress, work burnout, and life satisfaction (Table 1 and 2).

Table 1: Description of Predictor Measures of Well-being

Scale	Subscale	Assessment	Psychometric Properties
FF Role Impact Scale 18 items (McShane, 2012)	RI-Inhibitors RI-Facilitators RI-Moderators	5-point Likert Scale 1=Not at all 5=Most of the time	Factor loadings >.3 Cronbach alpha >.8 Test-retest *rho* >.6
FF Stressor Scale 29 items (McShane, 2012)	S-Financial S-Family S-Future S-Daily S-Uncontrollable	5-point Likert Scale 1=Not at all 5=Worries me a lot	Factor loadings >.3 Cronbach alpha >.9 Test-retest *rho* >.6
FF Cope Scale 25 items (McShane, 2012)	C-Reassess C-Positive Reframe C-Community-Connectedness C-Aware C-Disengage	5-point Likert Scale 1=Not at all 5=Helps me a lot	Factor loadings >.4 Cronbach alpha >.8
FF Buffer Scale 12 items (McShane, 2012)	B-Farming Attractions B-Family Commitment B-Pride in Identity	5-point Likert Scale 1=Not at all 5=Very much so	Factor loadings >.5 Cronbach alpha >.8
IF Impact Scale 11 items (McShane, 2012)	n/a	5-point Likert Scale 1=Not at all 5=Very much so	Factor loadings >.5 Cronbach alpha >.7 Test-retest *rho* >.7
WFC Scale-Short Version 6 items (Matthews, Kath, and Barnes-Farrell 2010; Carlson, Kacmar and Williams 2000)	Time Strain Behaviour	5-point Likert Scale 1=Strongly Disagree 5=Strongly Agree	Cronbach alpha >.7 Good fit model $\chi^2(5)=8.43, p>.05$, CFI=.99

Specifically, scales included in the questionnaire package to assess potential determinants of well-being included the Farming Family (FF) Role Impact Scale which assessed role interference (McShane 2012); the FF Stressor Scale which measured farming family specific stressors (McShane 2012); the FF Cope Scale which measured farming family specific coping behaviours and attitudes (McShane 2012); the FF Buffer Scale assessed the buffering (or protective) characteristics and attitudes of farming families (McShane 2012), the Intergenerational Farming (IF) Impact Scale measured adaptive characteristics of the

intergenerational farming environment (McShane 2012); and the Work-Family Conflict Scale-Short Version (WFC), measured the bi-directional conflict between the work and home domains in relation to time, strain, and behaviour based conflict (Matthews, Kath, and Barnes-Farrell 2010; Carlson, Kacmar, and Williams 2000) (Table 1).

 Scales included in the questionnaire package as measures of well-being included the Kessler-10 (K-10), an assessment of psychological distress (Kessler et al. 2002); the Maslach's Burnout Inventory-General Survey (MBI-GS), which assessed work-related burnout in terms of how the individual feels about work (Maslach, Jackson, and Leiter 1996); and the Satisfaction with Life Scale (SLS) which measured the degree a person is globally satisfied with their life (Diener et al. 1985) (Table 2). It should be noted, however, that due to a formatting error, the K-10 for the current research was only assessed on a 4-point Likert scale instead of a 5-point Likert scale.

Table 2: Description of Outcomes Measures of Well-being

Scale	Subscale	Assessment	Psychometric Properties
Kessler-10 10 items (Kessler et al., 2002)	Depressed Mood Motor Agitation Fatigue Worthlessness Anxiety	4-point Likert Scale 1=Strongly Disagree 4=Agree	
MBI-GS 16 items (Maslach et al., 1996)	Emotional Exhaustion Professional Efficacy Cynicism	7-point Likert Scale 0=Never 6=Every day	Factor loadings >.5 Cronbach alpha >.7
Satisfaction with Life 5 items (Diener et al., 1985)	n/a	7-point Likert Scale 1=Strongly Disagree 7=Strongly Agree	Factor loadings >.6 Cronbach alpha >.8 Test-retest r >.8

Procedure

Participants were recruited through advertising a weblink to the online survey and   author contact details in industry-relevant newspapers, magazines, websites, a facebook community page, mailing list, and a rural women's email network. Recruitment was over a 4-month period, with reminders circulating during this time.

Results

Indicators of Well-being

Simple correlation analysis, using Pearson's r was used to identify items which had multiple significant correlations to measures of well-being (K-10, SLS, and MBS-GS). Items with multiple correlations to measures of well-being greater than ± .3 included "family tension", "finances", "when things go wrong", "being emotionally drained", and "feeling stressed" from the FF Role Impact Scale (Table 3).

Table 3: Relationship between FF Role Impact Scale and Measures of Well-being

Role Impact Items	SLS	K10	MBI-EE	MBI-PE	MBI-CY
Rested	-.226[**]	.426[**]	.464[**]	.073	.244[**]
Enthusiasm	-.145[*]	.343[**]	.301[**]	-.112	.244[**]
Delegating	-.095	.230[**]	.297[**]	.079	.146
Management Skills	-.044	.233[**]	.251[**]	-.063	.192[*]
Flexibility	-.160[*]	.298[**]	.309[**]	-.136	.222[**]
Weather	-.139[*]	.156[*]	.262[**]	.123	.054
Communication	-.130[*]	.216[**]	.237[**]	.075	.205[**]
Share Work	-.188[**]	.323[**]	.246[**]	-.002	.211[**]
Work Demands	-.235[**]	.317[**]	.448[**]	.057	.281[**]
Unpredictability of Jobs	-.210[**]	.252[**]	.415[**]	.032	.234[**]
Courses/Meetings	-.053	.126[*]	.082	-.035	.109
Family Tension	-.403[**]	.462[**]	.362[**]	-.020	.245[**]
Time with Family	-.169[**]	.177[**]	.250[**]	-.006	.227[**]
Finances	-.413[**]	.363[**]	.339[**]	.118	.295[**]
Things Go Wrong	-.316[**]	.305[**]	.388[**]	.038	.294[**]
Employees	-.160[*]	.250[**]	.305[**]	.089	.248[**]
Emotionally Drained	-.303[**]	.527[**]	.512[**]	-.039	.339[**]
Stressed	-.337[**]	.588[**]	.564[**]	-.043	.365[**]
RI-Facilitators Subscale	-.208[**]	.409[**]	.399[**]	-.056	.294[**]
RI-Inhibitors Subscale	-.405[**]	.507[**]	.533[**]	.028	.388[**]
RI-Moderators Subscale	-.292[**]	.378[**]	.334[**]	.033	.246[**]
FF Role Impact Scale	-.357[**]	.527[**]	.523[**]	-.038	.387[**]
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Items from the FF Stressor Scale that presented multiple correlations to measures of well-being ($r > \pm .4$) included "feeling exhausted", "maintaining relationships", "talking about stress", and "family duties" (Table 4). Items from the FF Cope Scale that presented multiple correlations ($r > \pm .2$) with measures of well-being included "enjoy work", "being positive", "recognising achievements", and "seeking professional help (not necessarily psychological— e.g. agronomist)" (Table 5).

Table 4: Relationship between FF Stressor Scale and Measures of Well-being

Stressor Items	SLS	K10	MBI-EE	MBI-PE	MBI-CY
Services	-.213[**]	.268[**]	.207[**]	-.084	.189[*]
Unreliable Communications	-.198[**]	.208[**]	.285[**]	.027	.160[*]
Isolation	-.273[**]	.198[**]	.146	-.184[*]	.204[**]
Exhausted	-.413[**]	.625[**]	.612[**]	-.005	.374[**]
Talking about Stress	-.382[**]	.576[**]	.559[**]	.051	.304[**]
Health of Family	-.358[**]	.397[**]	.390[**]	-.008	.211[**]
Distance from Family	-.229[**]	.223[**]	.202[**]	-.061	.126
Family Duties	-.257[**]	.412[**]	.415[**]	-.053	.343[**]
Maintaining Relationships	-.425[**]	.521[**]	.447[**]	-.072	.326[**]
Providing for Family	-.424[**]	.372[**]	.399[**]	.099	.263[**]
When to Retire	-.331[**]	.296[**]	.384[**]	.049	.433[**]
Concerns over Retirement	-.319[**]	.344[**]	.449[**]	.127	.435[**]
Succession Planning	-.234[**]	.340[**]	.359[**]	.010	.250[**]
Working with Family	-.323[**]	.313[**]	.237[**]	-.060	.166[*]
Employees	-.189[**]	.239[**]	.315[**]	.080	.271[**]
Workload	-.247[**]	.363[**]	.453[**]	.097	.273[**]
Others Errors	-.223[**]	.296[**]	.346[**]	.063	.219[**]
Chemicals	-.086	.047	.104	.010	.128
Other Farmers	-.183[**]	.212[**]	.267[**]	.036	.145
Future of Industry	-.185[**]	.277[**]	.387[**]	.162[*]	.215[**]
Aus. Public and Government lack of Value	-.154[*]	.238[**]	.327[**]	.132	.230[**]
Market Control	-.130[*]	.266[**]	.359[**]	.185[*]	.240[**]
Supermarket	-.115	.154[*]	.286[**]	.137	.188[*]
Foreign Products	-.143[*]	.164[**]	.233[**]	.200[**]	.154[*]
Financial Farm	-.288[**]	.341[**]	.359[**]	.187[*]	.281[**]
Economy	-.361[**]	.330[**]	.348[**]	.133	.273[**]
Cost-Profit Margin	-.172[**]	.176[**]	.311[**]	.121	.184[*]
Price of Land	-.163[*]	.196[**]	.208[**]	.028	.174[*]
Changes in Technology	-.140[*]	.216[**]	.342[**]	.093	.313[**]
S-Financial Subscale	-.248[**]	.319[**]	.413[**]	.179[*]	.289[**]
S-Family Subscale	-.478[**]	.562[**]	.548[**]	-.025	.371[**]
S-Future Subscale	-.365[**]	.432[**]	.487[**]	.057	.426[**]
S-Daily Subscale	-.270[**]	.383[**]	.421[**]	.056	.296[**]
S-Uncontrollable Subscale	-.146[*]	.151[*]	.216[**]	.019	.155[*]
FF Stressors Scale	-.421[**]	.538[**]	.578[**]	.079	.430[**]

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 5: Relationship between FF Role Impact Scale and Measures of Well-being

Cope Items	SLS	K10	MBI-EE	MBI-PE	MBI-CY
Accept Control	.135[*]	-.133[*]	-.086	.137	-.144
Accept Responsibility	.090	-.084	.010	.247[**]	-.127
Enjoy Work	.349[**]	-.251[**]	-.267[**]	.218[**]	-.410[**]
Remember Past	.123	-.032	.023	.179[*]	-.026
Positive	.338[**]	-.198[**]	-.145	.092	-.237[**]
Recognise Achievements	.300[**]	-.132[*]	-.105	.229[**]	-.253[**]
Socialise	.189[**]	-.071	-.059	.078	-.111
Faith	.123	.007	.060	.185[*]	.089
Share Work	.278[**]	-.026	-.061	.160[*]	-.043
Open Communication	.359[**]	-.102	-.091	.106	-.086
Not Alone	.215[**]	-.089	-.048	.183[*]	-.027
Alcohol	-.030	.178[**]	.089	-.100	.037
Laugh	.279[**]	-.134[*]	-.146	.134	-.161[*]
Animals	.026	-.004	-.048	.040	-.103
Get Away	-.071	.060	.131	.043	.208[**]
Exercise	.107	.000	-.136	-.076	.000
Let Other Things Slide	.124	-.112	-.091	.078	-.077
Flow	.149[*]	-.146[*]	-.127	.052	-.083
Break	.152[*]	-.104	-.066	.085	-.025
Trust	.314[**]	-.118	-.053	.069	-.148
Commitment	.197[**]	-.021	-.055	.115	-.163[*]
Compromise	.291[**]	-.081	-.089	.114	-.112
Prioritise	.188[**]	.035	.060	.219[**]	-.160[*]
Professional Help	.287[**]	-.132[*]	-.197[**]	.163[*]	-.266[**]
Talk	.347[**]	-.046	-.035	.104	-.111
C-Reassess Subscale	.305[**]	-.062	-.060	.234[**]	-.214[**]
C-Positive Subscale	.362[**]	-.192[**]	-.165[*]	.220[**]	-.290[**]
C-Community Subscale	.335[**]	-.083	-.012	.226[**]	-.033
C-Accept Subscale	.204[**]	-.146[*]	-.162[*]	.096	-.083
C-Disengage Subscale	-.035	.124	.082	-.008	.065
FF Cope Scale	.315[**]	-.095	-.060	.238[**]	-.181[*]
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Items from the FF Buffer scale also presented multiple significant correlations with measures of well-being, though these were comparatively weaker than the correlations between the other farming family scales and measures of well-being. The items included "enjoy work", "being a landowner", and "it's who I am" (Table 6).

Table 6: Relationship between FF Buffer Scale and Measures of Well-being

Buffer Items	SLS	K10	MBI-EE	MBI-PE	MBI-CY
Enjoy Working with Animals/Product	.126[*]	-.048	.073	.210[**]	-.114
Enjoy Work	.244[**]	-.129[*]	-.059	.233[**]	-.232[**]
Land Owner	.301[**]	-.149[*]	-.024	-.021	-.103
Down to Earth	.212[**]	.000	.108	.083	.020
Improving Land	.118	.045	.082	.132	-.070
Surroundings	.096	-.009	.001	-.054	-.036
Skills	.039	.009	.183[*]	.072	.120
Contributes to People	.082	.029	.169[*]	.161[*]	-.068
Who I Am	-.014	.125[*]	.230[**]	.105	.109
Children's Future	.101	.007	.129	.060	-.015
Children Encouraged	.162[*]	-.023	-.012	.067	-.093
Sentimental	.124	.025	.150[*]	.108	.036
B-Pride In Identity Subscale	.263[**]	-.071	.033	.016	-.069
B-Farming Attraction Subscale	.122	.023	.187[*]	.194[*]	-.023
B-Family Commitment Subscale	.155[*]	.003	.112	.091	-.024
FF Buffer Scale	.207[**]	.002	.145	.117	-.066
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Items from the IF Impact Scale which presented multiple correlations ($r > \pm .2$) with measures of well-being included "being committed [to farm and family]", "having open and honest communication", "having common goals", and "having trust amongst each other" (Table 7).

Table 7: Relationship between IF Impact Scale and Measures of Well-being

Intergenerational Farming Impact Items	SLS	K10	MBI-EE	MBI-PE	MBI-CY
Difference in Workload	-.104	-.021	.079	.024	.109
Equal Say	.265**	-.186*	-.134	.087	-.175
Committed	.309**	-.202*	-.246*	.036	-.241*
Good Relationships	.193*	-.111	-.103	.108	-.184
Open/Honest Communication	.215*	-.323**	-.237*	-.031	-.132
Common Goals	.234**	-.221*	-.162	.054	-.136
Jealousy	.267**	-.126	-.097	.042	-.001
Central Management	-.100	.037	.116	.132	.014
Loyalty	.196*	-.127	-.049	.121	-.172
Succession Plan	.115	-.113	-.035	.109	-.086
Trust	.259**	-.201*	-.176	.031	-.101
IF Impact Scale	.283**	-.270**	-.183	.112	-.203
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

To further identify the adaptive characteristics of the farming family work environment, the IF Impact Scale was correlated with measures of role interference including the FF Role Impact Scale and the Work-Family Conflict Scale (Table 8). Items of the IF Impact Scale that had significant positive correlations with measures of role interference included "differences in workload" and "central management". Those items of the IF Impact Scale that had multiple negative correlations with measures of role interference included "being committed [to farm and family]", "having open and honest communication", "having common goals", and "having trust amongst each other" (Table 8).

Table 8: Correlation Matrix (Pearson's r) between IF Impact Scale Items and Scale Total and the FF Role Impact Scale and Work-Family Conflict Scales

	FF Role Impact	RI-Facilitator	RI-Inhibitor	RI-Moderator	WFC Total	WFC	FWC	Time	Strain	Behaviour
Difference in Workload	.143	.081	.166*	.254**	.089	.094	.048	.107	.102	.015
Equal Say	-.156	-.113	-.140	-.287**	-.214**	-.155	-.205*	-.100	-.194*	-.232**
Committed	-.213*	-.099	-.263**	-.179*	-.166*	-.170*	-.106	-.075	-.145	-.178*
Good Relationships	-.171	-.133	-.100	-.249**	-.149	-.153	-.096	-.077	-.166*	-.113
Open/Honest Communication	-.188*	-.104	-.153	-.319**	-.190*	-.188*	-.127	-.113	-.151	-.200*
Common Goals	-.260**	-.215**	-.293**	-.201*	-.185*	-.194*	-.112	-.141	-.145	-.168*
Jealousy	-.153	-.062	-.129	-.137	-.149	-.190*	-.048	-.130	-.164	-.077
Central Management	.221*	.151	.286**	.184*	.022	.039	-.008	.074	.048	-.062
Loyalty	-.212*	-.107	-.207*	-.245**	-.184*	-.195*	-.108	-.091	-.185*	-.169*
Succession Plan	-.152	-.070	-.131	-.275**	-.080	-.063	-.072	-.035	-.066	-.096
Trust	-.252**	-.132	-.262**	-.325**	-.183*	-.171*	-.134	-.086	-.171*	-.186*
IF Impact	-.229**	-.144	-.191*	-.287**	-.237**	-.233**	-.167	-.135	-.225**	-.224**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Profiles of Groups at-risk of Psychological Distress

Profiles of at-risk groups were also generated using the K-means Cluster analysis technique. Subscales from the farming family scales as well as the Work-Family Conflict Scales, the Satisfaction with Life Scale, and the Maslach Burnout Inventory-General Survey were included based on the strength of their correlations with the K-10, with factors correlating greater than ± .5 selected. The final profile for high risk for psychological distress included RI-Inhibitors, strain conflict, S-Family Concerns, and emotional exhaustion (MBI-GS) (Table 9). A one-way ANOVA indicated that there was a significant difference on K-10 scores between the high and low-risk clusters [$F_{(1,70.85)}$= 76.05, p=.000]. As the assumption for homogeneity of variance was violated, Welch and Brown-Forsythe tests were consulted.

Table 9: Profile of at-risk Groups for Psychological Distress within the Farming Family Sample

Risk Factor	Total Sample		Men Profile		Women Profile	
	High Risk	Low Risk	High Risk	Low Risk	High Risk	Low Risk
MBI-Emotional Exhaustion	5.54	2.58	5.10	2.61	5.30	2.74
RI-Inhibitor	3.34	2.53	3.27	2.44	3.30	2.60
Strain conflict	3.15	2.15	3.17	2.05	3.04	2.25
S-Family Concerns	3.29	2.30	3.13	2.13	3.25	2.51
Satisfaction with Life	n/a	n/a	17.81	28.95	n/a	n/a
Self-Distraction	n/a	n/a	2.33	1.57	n/a	n/a
Work-Family Conflict	n/a	n/a	3.59	2.59	n/a	n/a
MBI-Cynicism	n/a	n/a	n/a	n/a	4.48	2.24
K-10 Score						
Mean	22.43	15.01	24.08	14.28	20.83	15.25
Standard Deviation	6.35	3.89	5.94	4.03	6.20	3.97

Model Output

Structural Equation Modelling (SEM) was conducted through SPSS-AMOS. Only the path analysis of this modelling technique was used. Ideal sample size for Structural Equation Modelling (SEM) generally follows the N:q Rule, whereby the ideal ratio of number of cases to number of parameters/hypothesised pathways is 20:1, with a ratio < 10:1 indicating that the results of the analysis may be unreliable (Kline 2011). As, the validity study had a sample size of N = 278, a maximum of 27 (10:1) parameters and a more ideal 14 (20:1) parameters would be appropriate. After testing various versions of the hypothesised model, a model of good fit was produced. The resulting model (Figure 2) is presented below:
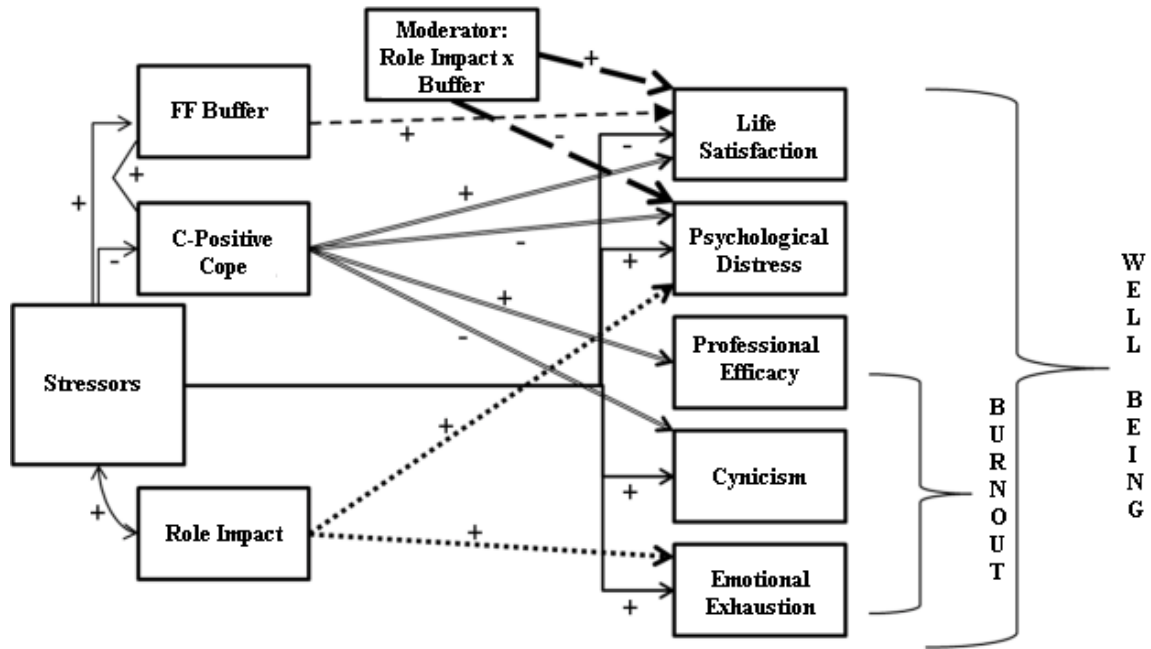
Figure 2: Path Model of Factors Specific to Farming Family Lifestyle that Impact on Well-being

The model generated was recursive, consisting of 8 observed endogenous variables [Satisfaction with life (SLS), psychological distress (K-10), Professional Efficacy (MBI-PE), Cynicism (MBI-CY), Emotional Exhaustion (MBI-EE), Buffers (FFB), and Positive Reframe (C-PR)]. There were three observed exogenous variables [Stressors (FFS), Role Impacts (FFRI), and Moderator-RIxB (M-RIxB)], and 7 unobserved exogenous variables (Residuals 1–7). The model was identified, achieved minimisation and presented overall good model fit $\chi^2_{(18)} = 23.98$, p=.156.

All pathways in the model presented in Figure 2 were significant, indicating direct positive effects of Stressors on Buffers, Cynicism, Emotional Exhaustion, and psychological distress (Table 10). Stressors had a significant negative direct effect on Positive Reframe and Satisfaction with Life. FF Role Impacts had significant positive direct effects on Emotional Exhaustion and Psychological Distress (Table 10). The effect of FF Role Impacts on Psychological Distress was significantly moderated by FF Buffers. FF Buffers had a significant positive direct effect on Satisfaction with Life which was in turn negatively moderated by FF Role Impacts (Table 10). C-Positive Reframe had a significant positive direct effect on Satisfaction with Life and Professional Efficacy (Table 10). C-Positive Reframe also had a significant negative direct effect on Cynicism and Psychological Distress. Additionally, there were a number of significant covariance's produced, such as between FF Stressors and FF Role Impacts (FFS < -- > FFRI, C.R. = 9.12) and scales of well-being (Table 11).

Table 10: Specified Pathways in Model 1

Variable 1		Variable 2	C.R.
FFB	<-	FSS	2.72
MBI-CY	<-	FFS	5.76
MBI-EE	<-	FFS	5.31
K-10	<-	FFS	4.46
C-PR	<-	FFS	-2.13
SLS	<-	FFS	-7.86
MBI-EE	<-	FFRI	1.96
K-10	<-	FFRI	4.01
K-10	<-	M-RIxB	2.96
SLS	<-	FFB	4.00
SLS	<-	M-RIxB	2.98
SLS	<-	C-PR	4.02
MBI-PE	<-	C-PR	3.30
MBY-CY	<-	C-PR	-2.80
K-10	<-	C-PR	-2.58
Note: Critical Ratio value is represented as C.R. *** indicates significant value < .000			

Table 11: Specified Parameter Covariances in Model 1

Variable 1		Variable 2	C.R.	P
Residual-FFB	<-->	Residual-C-PR	4.971	***
FFRI	<-->	FFS	9.122	***
Residual-SLS	<-->	Residual-K-10	-2.900	.004
Residual-K10	<-->	Residual-MBI-PE	-.255	.799
Residual-MBI-CY	<-->	Residual-MBI-PE	.365	.715
Residual-MBI-EE	<-->	Residual-MBI-CY	4.884	***
Residual-MBI-EE	<-->	Residual-MBI-PE	3.206	.001
Residual-K10	<-->	Residual-MBI-EE	6.127	***
Residual-SLS	<-->	Residual-MBI-PE	1.151	.250
Residual-SLS	<-->	Residual-MBI-CY	-1.184	.236
Residual-K-10	<-->	Residual-MBI-CY	3.914	***
Residual-SLS	<-->	Residual-MBI-EE	-1.988	.047
Note: Critical Ratio value is represented as C.R. *** indicates significant value < .000				

To assess model fit, the following approximate fit indices were used: the Comparative Fit Index (CFI; > .90 imply best fit), the Minimum Discrepancy / Degrees of Freedom Ratio (CMIN/DF; ratio value close to 1 imply best fit), the Normative Fit Index (NFI; > .90 imply best fit), the Incremental Fit Index (IFI; > .90 imply best fit), and the Root Mean Square Error of Approximation (RMSEA; parsimony adjusted index which assesses non-central chi-square distribution, where values close to 0 indicate best fit). A model fit summary indicated that the CFI, NFI, and IFI values were >.90, the CMIN/DF ratio was 1.33, and the RMSEA =.035, overall indicating a good fit model.

The hypothesised model (Model 1) was compared with alternative models to investigate whether Model 1 should be retained as the best fit model. Models 2 and 3 did not produce good fit (Table 12). As a result, parsimony was considered and the model was simplified until a good fit was achieved, producing Model 4. This model contained only 6 observed endogenous variables, 2 observed exogenous variables, and 6 unobserved exogenous variables. The model was identified, achieved minimisation, and presented overall good model fit $\chi^2_{(6)}$ =6.63, p=.357, with all specified pathways significant. Appropriateness of fit measures were satisfied, indicating a good fit model, however the theoretical basis of the model was unsound as the model was oversimplified and it was concluded that Model 1 explained the determinants of well-being more effectively.

Table 12: Comparison of Hypothesised Model and Equivalent test Model Regarding Model Fit Statistics

	CFI	NFI	IFI	CMIN/DF	RSMEA
Model 1	0.99	0.96	0.99	1.33	0.035
Model 2	n/a	n/a	n/a	n/a	n/a
Model 3	0.80	0.78	0.82	5.55	0.13
Model 4	0.99	0.99	0.99	1.11	0.019

Discussion

The results of this research demonstrated that a sustainable family and a sustainable farm is a healthy family. Those factors that were associated with high levels of well-being included low levels of role interference and farm stressors, particularly those items assessing family satisfaction, finances, and emotional states. Further, high levels of well-being were also associated with high commitment to family, identification with farming, positive coping behaviours (e.g. enjoying work), and having an 'adaptive' work environment. An adaptive work environment is characterised by open and honest communication, being committed to farm and family, having equality in decision making, and having trust amongst each other whilst simultaneously not having one family unit (e.g. parents) centrally manage the intergenerational business or having differences in workload.

To determine risk factors for poor mental health, profiles for at risk-groups for psychological distress were generated. Findings from the current research suggested that indicators for psychological distress included role interference (as measured by RI-Inhibitors and strain conflict), family stressors (as measured by S-Family), and high levels of emotional exhaustion (as a component of burnout) (Figure 3). These identified stressors and role impacts represent the extent to which the farm impacts upon family satisfaction and the importance of a successful fusion or integration of the family and business systems. Previous research has indicated that a family business is more likely to benefit from fluid boundaries rather than rigid, defined boundaries between the work and home domains, with the latter

associated with poorer well-being (Zody et al. 2006). This profile for those who are at-risk of psychological distress suggested that those most at-risk were those who were not balancing or merging the two domains effectively and therefore were experiencing the impact of role interference and conflict.
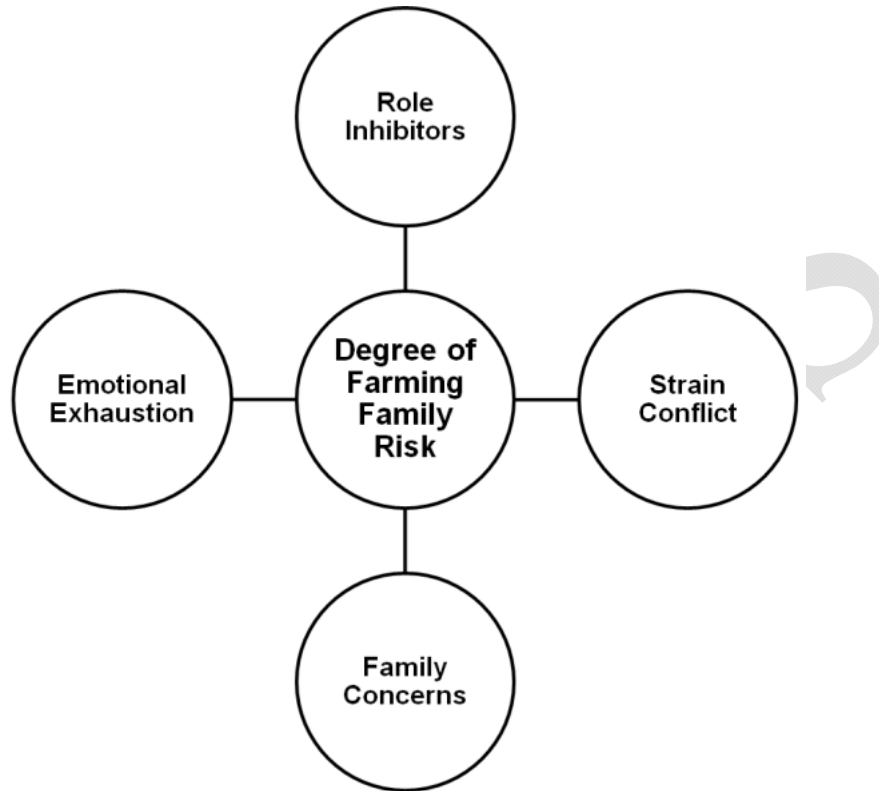

Figure 3: Profile of Farming Family Sample Risk Factors for Psychological Distress

This pattern of determinants of well-being is supported in the model generated, with the main determinants of well-being identified as farming family specific stressors and role interference as well as farming family protective characteristics or attitudes and positive coping behaviours (Figure 2). Specifically, stressors and role interference had direct and indirect effects on well-being. Increased stressors lead to psychological distress, low satisfaction with life, and increased risk of burnout (through high levels of emotional exhaustion and cynicism). Stressors were mediated by levels of life satisfaction (assessed on the FF Buffer Scale) with high levels of farm family buffers required to be present in order for stressors not to have a negative impact on life satisfaction. Stressors were also mediated by positive coping styles, with high levels of positive coping needed to protect against burnout, specifically in combination with the presence of high cynicism and low professional efficacy. Using positive coping styles appeared to bolster professional efficacy (i.e. enjoy work, positive outlook), which research has shown to be important in moderating the impact of burnout (Maslach, Schaufeli, and Leiter 2001). The relationship between the items of positive disposition within the C-Positive Reframe subscale to scales of well-being is consistent with previous research which has shown that optimism buffered the impact of job insecurity, time pressures, and other work stressors on mental health (Makikangas and Kinnunen 2003).

It appears that increased levels of role interference lead to psychological distress and partial burnout through increased levels of emotional exhaustion. However, the degree to which these factors impacted on well-being in the current sample was dependent on the extent of an individual's commitment and identification with farming (FF Buffer scale) and their positive coping behaviours. For example, higher levels of buffering characteristics resulted in a reduced effect of role conflict on psychological distress. This was consistent with findings by Greenhaus, Parasuraman, and Collins (2001) who suggested that those with high career involvement tend to persevere despite experiencing work-home interference. Career involvement can be defined as the degree of psychological investment an individual has in their career, the extent to which they perceive their jobs are valued, and the amount of energy that is committed to pursuing their career (Greenhaus, Parasuraman, and Collins 2001). In the current study's sample, high levels of farming commitment and identity could be considered to be representative of high career involvement, with these characteristics more likely to be protective rather than harmful to well-being (Greenhaus, Parasuraman, and Collins 2001). However, the FF Buffer Scale did not have a significant relationship with the Carlson, Kacmar, and Williams (2000) Work-Family Conflict scale, which is inconsistent with Parasuraman et al. (1996) who suggested that high career involvement would also result in higher family-work conflict. Further, this finding is also inconsistent with those of Greenberger and O'Neil (1993)who suggested increased career involvement would result in increased strain and depression in men.

Overall, the Farming Family Model of Well-being helped demonstrate that the working environment had a significant impact on well-being. This can also be seen in the cluster analysis results which identified family concerns, components of work burnout, and different forms of role interference or role conflict as leading contributors to a higher risk of reported psychological distress. However, this model also demonstrates that farming is more than a job due to the identified motivations for remaining in an increasingly challenging work environment centre on 'intangibles' such as family, place, and identity. Specifically, commitment to family, perceiving farming as a part of your identity, and connection to the farm helps build resilience in the farming family population. The importance of these factors in maintaining well-being and a healthy work environment can also be demonstrated through the profile of an adaptive intergenerational farming family. This profile focused on good communication between family members, commitment to farm and family, having common goals, and trusting one another.

Consideration of the motivations to continue farming for the farming family in regards to improved productivity and sustainability is supported by previous research by Cocklin and Dibden (2005). These researchers reported that the lack of recognition of the interaction between social, economic, and ecological systems have undermined the effectiveness of some policies for improving rural sustainability (Cocklin and Dibden 2005). This is connected to the current research as though policies may be aimed at improving sustainability of farms, for example through diversification, this may not be effective unless it considers the importance of family well-being in the farming work environment. As identified in the current research, sustainability could be achieved in part by improving community connectedness through social infrastructure, as community connectedness contributes to the positive lifestyle of farming and increases motivation for farmers to remain in the farming lifestyle. Recommendations from Cocklin and Alston (2002) stated that to ensure sustainability of rural communities, social (community connectedness) and human capital (relative to professional efficacy which emphasises skills, abilities, and capacity) must be taken into account.

In order to improve sustainability of rural communities through increasing the social and human capital of these communities, rural health organisations should be targeted by rural

health researchers to lobby government. In Australia, the Centre for Rural and Remote Mental Health Queensland or Country Health South Australia could use information obtained from the executive summary, publications, or conference presentations to address state and federal health departments on key determinants of poor well-being. These key determinants include the depletion of protective resources such as community-connectedness. Community-connectedness is likely being directly affected by the trends of population migration to urban centres due to reduction in stable employment opportunities in rural areas (Garnaut et al. 2001). Therefore, primary services should be decentralised so that each rural community has access to sufficient healthcare services, educational institutions, sanitation services, and safety services (fire brigade, police force). This would increase stable employment opportunities and encourage young people to remain in rural communities, therefore increasing sustainability. Additionally, changes to the perception of the employment profile of agricultural work may also help retain young people in rural communities as farming could be seen as a viable career option. These changes may be assisted by improving the cost-profit margin of farming or by improving access to funding to, for example, increase the opportunity for farmers to apprentice young people.

The connection between family well-being and productivity has been previously identified within the Sustainable Farming Families program (Brumby, Wilson, and Willder 2008) and therefore emphasises the need to consider farming family health and well-being in policy development. This recommendation has been cited by previous research regarding the need for increased active involvement from a federal government level to address the sustainability issues of rural communities, and not simply guide or encourage programs/policies or rely on local government (Tonts in Pritchard and McManus 2000). Therefore, an important factor to consider in the development of a more productive, sustainable and economically viable and valuable industry is the support provided to farming families which emphasises their strengths and motivation to farm. The current research findings can contribute to policy and program development as it can increase awareness, understanding and knowledge of the determinants of health and well-being within the farming family population. This type of contribution is supported by research that suggests building knowledge and awareness is the initial step in developing effective policy and programs (Dibden in Cocklin and Dibden, 2005).

Outside directly targeted mental health strategies, a link between business skill-building workshops with succession planner lawyers or financial counsellors could be established. This strategy may reduce the barrier between mental health and help-seeking behaviours within the farming population (Judd et al. 2006) as well as allow farming families to experience the benefits of effective communication and business skills. It should be noted that for the most part, farming families do not undergo any formal or accredited business training and usually undertake the farming business solely on skills learnt from the previous generation. Though, as the current research has evidenced, skills learnt from the previous generation are important, it is also beneficial to interlink these family learnt skills with formal business management skills.

The process through which these health promotion campaigns could be achieved is in consideration of past program development. Organisations which develop programs for rural or farming mental health tend to focus on intervention and treatment through raising awareness of mental health symptoms and increasing accessibility to services (NSW Department of Health 2008; (Toon 2010); CRRMHQ n.d.). There are some programs that focus on prevention of poor mental health outcomes through increasing awareness of a need for lifestyle balance or community-connectedness (Saal and Bowers 2010; Brumby, Willder, and Martin 2009). However, these programs are not necessarily reaching the at-risk groups

such as those with poor work-family environment or newcomers into an intergenerational business. Additionally, these programs may have high costs involved in relation to time and money (Storey 2009) or the campaign message does not reach the wider farming population.

In conclusion, the results of this research demonstrate that a sustainable family, a sustainable farm, is a healthy family. Future research into the health, well-being and sustainability of farming or rural communities should recall that farming families are more likely to be healthy if there is low role interference, they have an adaptive working environment, and they have good work-family balance. Further, it is important to remember that recruiting and retaining individuals in the farming industry requires emphasis on what keeps current farming families going which is a sense of community, connection to farm, identity with farming, lifestyle, and commitment to family. These factors may help build resilience against the uncontrollable and unpredictable stressors and characteristics of the farming lifestyle.

References

Andersen, K., J. Hawgood, H. Klieve, K Kolves, and D. De Leo. 2010. "Suicide in selected occupations in Queensland: evidence from the State suicide register." *Australian and New Zealand Journal of Psychiatry* no. 44:243-249.

Australian Bureau of Agricultural Resource and Economics (ABARE). 2006. *Agriculture in Australia.* Canberra: ABARE.

Australian Bureau of Statistics. 2003. (No. 4102.0). *Australian Social Trends.* Canberra: ABS.

Australian Institute of Health and Welfare (AIHW). 2008. *Rural, regional, and remote health: Indicators of health status and determinants of health.* (AIWH cat. no. PHE 97). Canberra: AIHW (Rural Health Series).

Beddington, J., C.L. Cooper, J. Field, U. Goswami, F.A. Huppert, R. Jenkins, H.S. Jones, T.B.L. Kirkwood, B.J. Sahakian, and S.M. Thomas. 2008. "The mental wealth of nations." *Nature* no. 455 (23):1057-1060.

Berry, H., and B. Rodgers. 2003. "Trust and distress in three generations of rural Australians." *Australasian Psychiatry* no. 11 (Supplement):131-137.

Boyd, C.P., L. Hayes, R.L. Wilson, and C. Bearsley-Smith. 2008. "Harnessing the social capital of rural communities for youth mental health: An asset-based community development framework." *Australian Journal of Rural Health* no. 16 (4):189-193.

Brumby, S., S.J. Willder, and J. Martin. 2009. "The Sustainable Farm Families project: Changing attitudes to health." *Rural and Remote Health (1445-6354)* no. 9:1012-1025.

Brumby, S., B. Wilson, and S. Willder. 2008. *Living longer on the land: Sustainable farm families in broadacre agricultural*. Edited by Rural Industries Research and Development Corporation. Canberra: Rural Industries Research and Development Corporation.

Carlson, D.S, K.M Kacmar, and L.J Williams. 2000. "Construction and initial validation of a multidimensional measure of work-family conflict." *Journal of Vocational Behaviour* no. 56:249-276.

Centre for Rural and Remote Mental Health Queensland. n.d. Retrieved January 10, 2011, from http://www.crrmhq.com.au

Cocklin, C., and M. Alston. 2002. *Community sustainability in rural Australia: A question of capital?* Wagga Wagga, NSW: Academy of the Social Sciences in Australia.

Cocklin, C., and J. Dibden. 2005. *Sustainability and change in rural Australia*. Sydney: University of New South Wales Press.

Danes, S.M., and Y.G. Lee. 2004. "Tensions generated by business issues in farm business-owning couples." *Family Relations* no. 53:357-366.

Danes, S.M., R.D. Leichtentritt, M.E. Metz, and C. Huddleston-Casas. 2000. "Effects of conflict styles and conflict severity on quality of life of men and women in family businesses." *Journal of Family and Economic Issues* no. 21 (3):259-286.

Diener, E., R.A. Emmons, R.J. Larsen, and S. Griffin. 1985. "The Satisfaction With Life Scale." *Journal of Personality Assessment* no. 49 (1):71-75.

Dixon, J., and N. Welch. 2001. "Researching the rural-metropolitan health differential using the "social determinants of health"." *Australian Journal of Rural Health* no. 8 (5):254-260.

Fletcher, B.C. 1991. *Work, Stress, Disease, and Life Expectancy*. Edited by C.L. Cooper, & Kasl, S.V., *Wiley Series on Studies in Occupational Stress*. Chichester, West Sussex: John Wiley & Sons.

Garnaut, J., P. Connell, R. Lindsay, and V. Rodriguez. 2001. Country Australia: Influences on employment and population growth. In *ABARE Research Report 2001.1*. Canberra: ABARE.

Golden, T. D., J.F. Veiga, and Z. Simsek. 2006. "Telecommuting's differential impact on work-family conflict: Is there no place like home?" *Journal of Applied Psychology* no. 91 (6):1340-1350.

Greenberger, E., and R. O'Neil. 1993. "Spouse, parent, worker: Role commitments and role-related experiences in the construction of adults' well-being." *Developmental Psychology* no. 29 (2):181-197.

Greenhaus, J.H., S. Parasuraman, and K.M. Collins. 2001. "Career Involvement and Family Involvement as Moderators of Relationships between Work-Family Conflict and Withdrawal from a Profession." *Journal of Occupational Health Psychology* no. 6 (2):91-100.

Judd, F., H. Jackson, C. Fraser, G. Robins, and A. Komiti. 2006. "Understanding suicide in Australian farmers." *Social Psychiatry Psychiatric Epidemiology* no. 41:1-10.

Kessler, R.C., G. Andrews, L.J. Colpe, E. Hiripi, D.K. Mroczek, S.L.T. Normand, E.E. Walters, and A.M. Zaslavsky. 2002. "Short screening scales to monitor population prevalences and trends in non-specific psychological distress." *Psychological Medicine* no. 32 (6):959-976.

Kline, R.B. 2011. *Principles and Practice of Structural Equation Modeling*. Edited by T.D. Little. 3 ed, *Methodology in the Social Sciences*. New York: The Guilford Press.

Kobasa, S.C. 1979. "Stressful life events, personality, and health: An inquiry into hardiness." *Journal of Personality and Social Psychology* no. 37 (1):1-11.

Kopelman, R.E., J.H. Greenhaus, and T.F. Connolly. 1983. "A Model of Work, Family, and Interrole Conflict: A Construct Validation Study." *Organisational Behaviour and Human Performance* no. 32:198-215.

Larson, N.C., and M. Dearmont. 2002. "Strengths of farming communities in fostering resilience in children." *Child Welfare* no. 81 (5):821-834.

Madsen, S.R. 2003. "The Effects of Home-Based Teleworking on Work-Family Conflict." *Human Resource Development Quarterly* no. 14 (1):35-58.

Makikangas, A., and U. Kinnunen. 2003. "Psychosocial work stressors and well-being: self-esteem and optimism as moderators in a one-year longitudinal sample." *Personality and Individual Differences* no. 35 (3):537-557.

Maslach, C., S.E. Jackson, and M.P. Leiter. 1996. *Maslach Burnout Inventory Manual*. 3 ed. Palo Alto, California: Consulting Psychologists Press, Inc.

Maslach, C., W.B. Schaufeli, and M.P. Leiter. 2001. "Job burnout." *Annual Review of Psychology* no. 52:397-422.

Matthews, R.A., L.M. Kath, and J.L. Barnes-Farrell. 2010. "A short, valid, predictive measure of work-family conflict: Item selection and scale validation." *Journal of Occupational Health Psychology* no. 15 (1):75-90.

McShane, C.J. 2012. *Farming struggles and triumphs: Investigating the impact of a unique working environment on farming family well-being*. Unpublished, Department of Psychology, James Cook University, Townsville.

McShane, C.J., and F. Quirk. 2009. "Mediating and moderating effects of work-home interference upon farm stressors and psychological distress." *Australian Journal of Rural Health* no. 17 (5):244-250.

Morton, C., L.J. Fragar, and K. Pollock. 2006. Health and safety of older farmers in Australia. The Facts 2006. Barton, NSW: Rural Industries Research and Development Corporation.

New South Wales Department of Health. 2008. *Final report of the NSW Drought Mental Health Assistance Package: Tackling tough times-through drought and beyond.* Sydney: NSW Department of Health.

Page, A.N., and L.J. Fragar. 2002. "Suicide in Australian farming, 1988-1997." *Australian and New Zealand Journal of Psychiatry* no. 36:81-85.

Parasuraman, S., Y.S. Purohit, V.M. Godshalk, and N.J. Beutell. 1996. "Work and Family Variables, Entrepreneurial Career Success, and Psychological Well-Being." *Journal of Vocational Behaviour* no. 48 (3):275-300.

Parasuraman, S., and C.A. Simmers. 2001. "Type of employment, work-family conflict and well-being: A comparative study." *Journal of Organizational Behaviour* no. 22 (5):551-568.

Pritchard, B., and P. McManus. 2000. *Land of discontent: The dynamics of change in rural and regional Australia*. Sydney: University of New South Wales Press.

Rygh, E.M., and P. Hjortdahl. 2007. "Continuous and integrated health care services in rural areas. A literature study." *Rural and Remote Health* no. 7 (766):1-10.

Saal, T., and J. Bowers. 2010. 'Me and My Community' - A program to build community leadership and support networks in rural and remote communities. In *Creating Futures: Harnessing creativity and social enterprise for mental health and well-being*. Cairns: Centre for Rural and Remote Mental Health Queensland; The Royal Australian and New Zealand College of Psychiatrists.

Storey, J. 2009. Sustainable Farm Families: Impact evaluation. edited by Victorian Department of Primary Industries. Victoria: Roberts Evaluation Pty Ltd.

Toon, S. 2010. Engaging rural men in preventative mental health. In *The 2nd Australian Rural and Remote Mental Health Symposium*, edited by N. Barling. Sydney: Australian and New Zealand Mental Health Association Inc.

Zody, Z., D. Sprenkle, S. MacDermid, and H. Schrank. 2006. "Boundaries and the functioning of family and business systems." *Journal of Family and Economic Issues* no. 27 (2):185-206.