

# The Sustainable Farm Families Project: Changing Farmer Attitudes to Health

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## Abstract

Farm health and safety has focussed on strategies such as injury prevention, audits and fulfilling legislative responsibilities. We know farmer injuries mask deeper health issues such as higher rates of cancer, suicides, cardiovascular disease and stress. The relationship between occupational health and safety and farming family health has not been investigated by other researchers either nationally or internationally. The Sustainable Farm Families (SFF) project attempts to make this connection in order to address the unacceptable rates of premature death, higher morbidity and injury on Australian farms.

The SFF focuses on the human resource in the triple bottom line and is working with farmers, families, industry, and university to collaboratively address and improve the health and well being of farming families. Based on a model of extension that engages farming families as active learners where they commit to healthy living and safe working practices the SFF is proving to be an effective model for engaging communities in learning and change. Health education and information is delivered to farming families using a workshop format with participants reporting positive impacts on their farming business. The SFF project sits across generations and sexes and has a high level of support with the overwhelming majority of participants saying they would recommend the program to others.

This paper discusses the progress of the research outlining the design of the project, the delivery and extension processes used to engage 321 farming families to date. The paper presents key learning's on intersectoral collaboration, engaging farmers and families in health and the future for this project extending into agricultural industries across the nation. The key learnings is that farmers who are at high risk of premature mortality who participate in a health education program based around industry collaboration with high levels of individual participation, will obtain an improved health status demonstrating that farmers will engage with health professionals if programs are presented to them in personally engaging and relevant ways.

**Key words:** health, farming families, collaborative, industries,

## Introduction

The Sustainable Farm Families (SFF) and the Sustainable Dairy Farm Families (SDFF) projects are a research initiative developed through a unique process of intersectoral collaboration involving health services, university, agricultural agencies, training bodies and farming communities. Together these bodies have combined through an evidence based research approach to address the poor health status of the rural farming family. Too often in healthcare we see the need as health care providers to go forth and deliver health information and knowledge to satisfy the requirements set by health care funding bodies. Current evidence from health promotion and adult learning informs us that the approach used can either stifle or encourage the attainment of knowledge by population groups (Wass 2000). In this paper we report on an approach to learning and change in health education for farming families, which overcomes these problems.

In understanding the attitudes of the Australian farming population to health and well being, one needs to empathise with the underlying characteristics of the farming family unit; a strong work ethic, lower socio-economic status, high level of injury and risk taking behaviours and higher per capita levels of disease rates and morbidity (Todd 2004). Farmers are ageing, working harder, longer and increasingly rely on family members to provide the extra labour needed to survive. Farmers experience higher death and morbidity rates than the Australian population, are over represented in injury statistics, and have varying levels of socio-economic disadvantage (Troeth, 2004). As well, residents of rural areas have a below average life expectancy. The Australian Institute of Health and Welfare, (1998) provides evidence to show that 'the general health of rural people is, by urban standards, very poor. Rural populations have above average rates

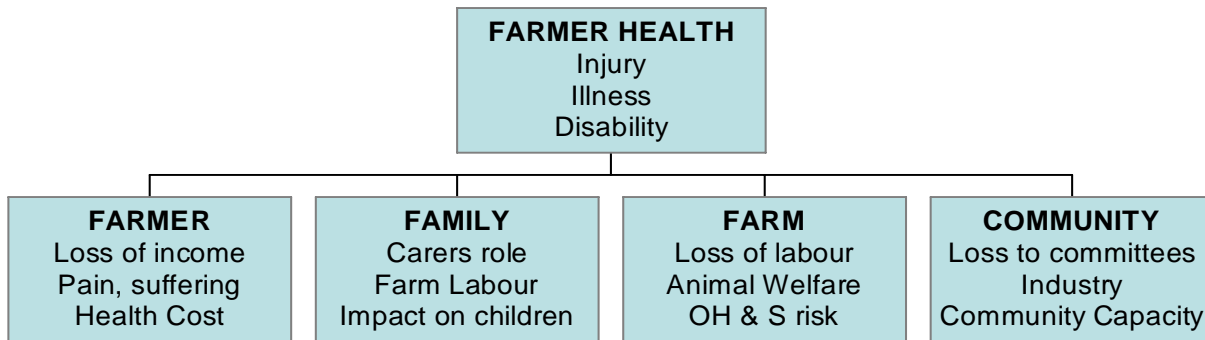
of premature mortality through heart disease, cancer and suicide. This is consistent with research conducted by Fragar and Franklin (2000) who noted that male farmers face a 40 percent increase in age standardised deaths compared with the general male population. Cancer, farm injury, cardiovascular disease, and suicide account for this increased mortality in the farmer population. International research also highlights hearing deficits (McCullough et al 2002). Farm work practices can also result in pesticides being taken into the home where children and spouses are exposed (Thompson et al 2003). Suicide rates across most age groups for men are higher in rural and remote centres and for women in the 30 to 44 year age group (Caldwell et al 2003). Whilst the cost of farmer illness, injury and accidents is not known, Fragar and Franklin (2000) note that the full costs of farm injury and illness are probably not being borne by the industry. The SFF catch phrase; "There's no point in having a healthy bottom line if you're not around to enjoy it" is reinforced throughout the project. As one farmer noted they invest heavily in stock health, natural resource and financial management yet pay little attention to the health of their own families.

Healthcare has traditionally focussed on the acute and aged care aspects of health with most rural communities worrying about the number of beds in their hospital rather than the number of healthy people in their communities. Western District Health Service (WDHS) is a rural health service located in the western district of Victoria providing health care for a direct population of 10,000 and surrounding population of approximately 20,000. Historically primary production in the area has been built on the grazing industry and has significantly changed with the extension to cropping, viticulture and plantation forestry.

WDHS developed a community services division in 1998, which focuses on preventative health and early intervention with programs such as the Rural Men's Health and Women's Health programs. Success with these structured five-week education and assessment programs and strong background in farming and agricultural networks led to the application for funding through the Joint Research Venture on Farm Health and Safety managed through the Rural Industries Research and Development Corporation. Understanding the need for intersectoral collaboration, an alliance was developed with Royal Melbourne Institute of Technology (RMIT) University, Farm Management 500 (FM500) (benchmarking farmer group), Land Connect Australia (training organisation) and Victorian Farmers Federation (VFF) to undertake a three year study of farming family health in broad acre farmers producing mainly beef, wool and grains in Victoria (Benalla, Horsham, Hamilton, Swan Hill including farmers from southern NSW) and South Australia (Clare).

The Sustainable Farm Families (SFF) project provides participants with information on personal health and wellbeing and explores attitudes to personal health and opportunities for improving health and farm safety outcomes. The SFF project approach relies upon intersectoral collaborative arrangements to show how farming family health relates to farming productivity, profitability and healthy communities. Based on early success of the SFF program interest was expressed from the Victorian Dairy Industry to run a similar program for dairy farming families. An application was made to the Gardiner Foundation for funding to research the Victorian dairy industry using the current SFF framework, education and assessment process. A grant for \$304K was received and 211 farming families accessed through eleven dairy regions. A steering committee, redeveloped resource manual and linkages between local health services were established to extend the project and move it towards a sustainable future. Collaborative partners with the SDF project include United Dairy Farmers of Victoria (UDV), Westvic Dairy, Colac Area Health, VFF, RMIT University and Victorian Department Primary Industries (DPI).

As shown in the figure below farmer health is a complex issue that has a ripple effect on the farming family unit, and extended community. Poor farmer health is, to a great extent, preventable and early intervention and health maintenance has flow on benefits, not only to profitability but also to family and rural community members in the long term.



**Figure 1** The flow on effect of poor health on farmers, families, farms and communities (Brumby 2005)

The SFF and SDFP projects have also created interest amongst rural health professionals keen to learn and be a part of this education and research process. In 2005, additional funding was received from the Department of Human Services, Victoria for \$100K for the development of an educational and facilitation training framework to incorporate health professionals from the nursing field to undertake the research and deliver the education within the SFF framework.

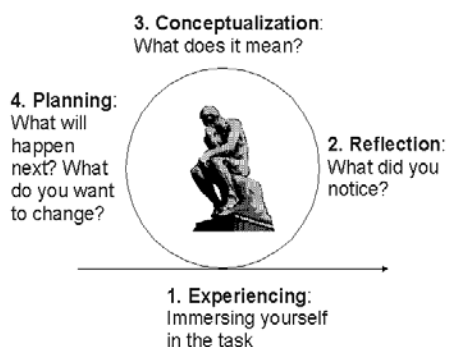
### Designing a New Approach

In developing the SFF and SDFP, many theories and principles were used to inform and formulate a new approach. Development of education programs needed to be specific to rural men and women who have differing levels of education and comprehension. Azjen and Fishbein’s (1980), theory of “reasoned action and planned behaviour” guides the learning experienced by participants in the SFF and SDFP projects. Their theory suggests that behaviour changes in this program occur through

- the sharing of values and beliefs about health of the farming peer group
- a common commitment to individual physical and knowledge assessment
- sharing with peers how best to influence health outcomes, and
- understanding the consequences of poor health and safety behaviour on farming families.

This process of learning is essential for farming families and allows particular focus on issues such as farm health and safety, the role of good farm practices and the effects on the farming family unit. This process has allowed participants to use the experience and support of their peers to make informed choice and identify behaviours that effect farming family health.

The training and delivery model is based on Kolb’s (1984) learning cycle, which allows participants to follow a systematic approach to identify and comprehend new information. Kolb’s model uses the principle that individuals reflect on their own experiences, acquire new concepts, actively experiment with new ways of working, which become part of their experience base. This learning is supported with videos, graphs, statistics, and reflection on one’s own practice.



**Figure 2:** Kolb’s (1984) Experiential Learning Model

In summary the Kolb learning model is based on his observations that people learn through a series of iterations in which they:

1. Immerse themselves in the learning
2. Reflect on their own concrete experiences of an issue, or topic;
3. Acquire new concepts, information, understanding, and / or attitudes about the issue;
4. Plan to use new knowledge and understand change in their own context;

The strength of the SFF projects is that of continued support and trust in the delivery team (health professionals with expertise in women's, men's and rural health) enable ongoing learning for all participants. Key collaborative partners assist in the recruitment, maintenance, and coordination of participants.

The workshop is evaluated using Kirkpatrick's (1998) training evaluation framework. This approach to evaluation includes four levels and is carried out over three years.

- *Positive experience* - evaluate reaction of participants
- *Conceptual understanding* - evaluate learning of participants
- *Can the learning's make a difference* - evaluate behaviours of participants
- *Demonstrable outcomes* - evaluate results of the workshop

Rogers (1983) research on the diffusion of innovation and well known in the extension literature helps us to understand how new ideas and practice is adopted in groups. His work, which included adoption of innovation among farming communities, defines diffusion as 'the process by which innovation is communicated through certain channels over time by members of a social system'. The SFF projects involve a number of key groups to assist in the early adoption of the health and safety practices advocated in the program. Importantly the most powerful group is the farmers who participate in this program and who meet regularly to discuss farming matters, which now includes health, well-being and safety. The FM500 group was chosen for this research because they are known as innovators in farm management and can be considered as 'innovators' and 'early adopters' in Rogers' typology. Our rationale in working with this group is to obtain evidence on the relationship between health, farm related accidents and farm business sustainability. We wanted to target early adopters to refine the workshop approach, identify issues and engage with them on a three-year health and well being program.

## **Development**

The development of the SFF project began at the WDHS in early 2002 when the concept of education delivery to farming families and agricultural sectors was investigated with Farm 500 a farm consultancy service expressing interest in linking such a program to farming business indicators. Theoretical approaches were reviewed to best suit the needs of farming families and a resource manual was developed guided by these theoretical approaches to aid in the learning process of participants. A registered training organisation was contracted to assist in the design and coordination of the resource manual and RMIT University assisted in the development of research-based frameworks and the selection of data gathering techniques for the project. Recruitment of participants was coordinated through FM500 and the VFF. Other collaborative partners included Australian Women in Agriculture, DPI and Meat and Livestock Australia. A steering committee was formed with quarterly meetings in both metropolitan and rural areas.

This groundwork is now seen as essential to the success of the project with the formulation of a collaborative committee of health, university, agricultural and industry representatives working together to improve the health of farming populations. Teleconferencing into local FM500 meetings and explanation of the education and assessment process assisted recruitment. Early findings were that recruitment was enhanced due to the provision of a full 30-minute physical assessment within the program. This was yet again reinforced when participants were asked why they came along to the first session and the majority answered that the physical assessment was a major reason for them attending the program.

Ethics approval was sought from the South West Health Care Ethics committee and was granted on the undertaking of specific objectives. The committee made several recommendations including the need to refer participants with fasting cholesterol levels greater than 5.5 mmols to their General Practitioner and to use the Heart Foundation's (2002) minimal requirements for exercise. The formation of a health record on each

participant with the safe storage of these records was also recommended and these records are stored at the WDHS in Hamilton. All participants required a signed consent and this was recorded in their medical record.

### **The Education Process**

Designing the education process was complex considering the specific learning needs of the participants and the timelines for the project. Previous learning's and feedback from rural men's and women's health projects and further input from the registered training organisation and University enabled the process to be developed more fully. As a pilot the project allowed for constant critical review, adjustment and evaluation throughout the timeframe. Issues such as time of delivery, venue, resources, coordination and facilitation were reviewed by the Steering Committee and all points of view considered in the development of the delivery process. This unique collaborative process allowed for all partners to be involved in the structure and logistics of the program rollout.

### **What is the Sustainable Farm Families Program?**

The SFF program consists of a structured two-day workshop in year one and a one-day workshop in year two and three. Participants were recruited from the industry partner and collaborative partners for each of the programs. Contacts were made by phone and mail with each participant and a plain language statement and consent form signed and returned to WDHS. Information regarding the timetable, venue and fasting requirements was also sent out 4 weeks prior to the program delivery. Industry knowledge in relation to time of year and workshop locations was vitally important. On the day of the program and prior to the topic delivery a facilitator (University Professor/research advisor) would undertake a focus group discussion with group participants. This allowed for exchanging of ideas, introduction of participants and a general understanding of the project content. During this stage a group of questions were asked regarding their farming unit, reason for attendance and the current value of health in their farming entity. A pre-session questionnaire was undertaken by all participants exploring the current knowledge related to health topics. This focussed on their current knowledge and understanding of core topics that would be covered in the workshop program. This same questionnaire was again given to each participant at the end of the two-day workshop to assess changes in his or her knowledge following the program. This data was analysed to determine participant level of knowledge pre and post workshop. The results show significant improvement in recognising risk factors for cardiovascular disease, diabetes and bowel cancer as well as changes in knowledge for type, amount and frequency of exercise required per day.

Topics covered were systematically chosen and linked to relevant health issues predominant in farming and rural populations. The resource manual was also developed around the Kolb framework and provided both a written and visual resource for participants. The first day was timetabled to cater for fasting blood cholesterol and glucose measurements and the fasting farmer. A seven am start assisted in the physical assessment process and all participants were provided with a healthy breakfast following a brief physical assessment and introduction. Participants were seated in table groups to facilitate discussion around learning needs as identified in Azjen and Fishbein's theory of reasoned learning model. Topics were structured to address health issues experienced by farming populations and included:

- The state of rural health
- Cardiovascular disease
- Cancer including bowel and skin
- Farm health and safety
- Stress and stress management
- Diet and Nutrition – supermarket tour
- Gender related topics delivered in separate groups e.g. prostate cancer, impotence, women's health and breast cancer

Two health professionals facilitated sessions with expertise in rural health, men's and women's health and farming experience. Relevant focus group data was collected that would be later collated for reference and evaluation.

Education sessions were run to a set timeline and incorporated specific learning objectives that would be completed by all participants within their resource manual. Following each of the sessions each participant was required to assess the delivery of the session and the relevance of this to their farming entity and current life situation. A relevant rating scale was used for this assessment and data used for future evaluation methods. During each session frequent table group discussions enabled reflection, conceptualization and

planning as per Kolb' model of effective learning. In addition participants developed 'action plans' in which they identified personal goals and strategies to achieve these goals. This process was an important part of the delivery process in that participants were able not only to learn from the health professionals but from each other and the peer experiences within table group discussion. From the evaluation process all participants found this education process of great benefit and all participants would recommend the program to other farmers.

### **Physical Assessment**

One of the most successful facets of the project, and the most influential in gaining attendance, was the physical assessment process undertaken by all participants. Many participants stated that the provision of a free 30-minute physical assessment was the main factor that influenced them to join the research project. Further exploration of this through focus group discussions found that a similar proportion of individuals felt that a full and detailed physical assessment was one thing that modern medicine failed to deliver them. The concept within the education process is that knowing and understanding your relevant risks empowers people to seek treatment and intervention. Many of the participants felt that they were not fully aware of their personal results.

The physical assessment process was set up to undertake initial screening on arrival of participants following a minimum of 10 hours of fasting to aid in accuracy of the testing procedures. Initial screening followed a 3-5 minute initial assessment including the following privately recorded tests:

- Fasting total cholesterol and blood sugar
- Weight and height measurement
- Body mass index
- Body fat percentage
- Blood pressure and pulse
- Waist and hip measurement

This initial assessment was a confidential process and recorded in the medical history and the participant's resource manual for later reference. Although confidential most participants would openly share this data with their table group and friends with no fear of incrimination. Bookings for a full 30-minute physical assessment were made prior to the commencement of breakfast and there were two instances where the 338 members for the dairy or broad acre farmers refused this opportunity. These physical assessments were undertaken on the afternoon of the first day and in the morning of the second day of the program. Specific topics and discussions undertaken in this assessment process included: -

- Evaluation and discussion of initial physical assessment results
- Allergies and current medications
- Familial history and incidence of disease
- Neurological assessment
- Skin spot assessment
- Cardiovascular assessment including heart sound assessment
- Respiratory assessment and auscultation
- Gastrointestinal assessment and risk for upper and lower GI disorders
- Urological assessment for relevant risk and disorders
- Sexual history and assessment for disorders
- Social history

### **Outcomes and Results**

The 30-minute assessment was undertaken in a private room and findings were recorded in the health record collated for each participant. Extensive discussions with each participant were made regarding the results and need for referral to other allied and medical practitioners. Upon recommendation a full referral was made using relevant documented health information. In most instances a copy of this letter was sent to the participant. Referral rates for each of the programs and other health indicators are in Table 1.

**Table 1. Statistical data from year one of SFF and SDFP illustrating demographics, health indicators and perceptions of health.**

Factor	SFF Men n=70	SDFP Men n=109	SFF Women n=58	SDFP Women n=101
Australian born (%)	97	93	91	91
Spoke English at home (%)	100	98.2	100	97
Average Age (years)	48	49	46	47
Currently Smoke (%)	6	8.3	1.7	6.0
Drink alcohol once per week (%)	86	67	67	54.5
Drink at high-risk levels <sup>a</sup> at least once a month (%)	54	44	22	12
Physical activity 30 min per day most days (%) <sup>b</sup>	75	85	73	72
Report health as good, very good to excellent (%)	93	93	92	92
Suffer moderate –very severe bodily pain (%)	29	27	17	22
Health interfered with activities of daily life	30	40	29	34
Waist size above recommended level <sup>c</sup>	26%	37.6	38%	56%
Elevated Body Mass Index <sup>d</sup>	70%	73.4%	21%	47%
Elevated cholesterol <sup>e</sup>	43%	38.5%	38%	18%
Elevated fasting blood sugar <sup>f</sup>	13%	15.6%	8.6%	17%
Urinary problems <sup>g</sup>	43%	41.2%	61%	55%
Suffering from muscle, joint pain, back pain	68.6%	72.5%	41%	59%
Participants referred for further follow up (% with actual numbers in brackets)	60% (42)	63% (69)	71% (41)	73% (74)
Total number of referrals written – GPs, dietetics, clinics and counsellors	45	70	53	93

<sup>a</sup> More than 6 standard drinks in any one day for men and four standard drinks for women (National Health and Medical Research Council 2001).

<sup>b</sup> Physical Activity for 30 minutes on most days of the week (Heart Foundation 2002)

<sup>c</sup> Waist circumference greater than 88cm in women and 102 cm in men associated with greater risk of diabetes (International Diabetes Institute 2001)

<sup>d</sup> Body Mass Index over 25 in men and 28 in women greater chance of cardiovascular disease, diabetes (Better Health Channel 2005).

<sup>e</sup> Fasting screening cholesterol over 5.5mmol referred to General Practitioners for further follow up (Southwest Ethics Committee 2003)

<sup>f</sup> Fasting blood sugar over 5.5mmol referred to General Practitioners for further follow up (Southwest Ethics Committee 2003 & Cohen 2000)

<sup>g</sup> Dribbling of urine when lifting cough or sneeze, getting up more than once through the night, difficulty controlling flow (Continence Foundation of Australia 2002)

## Qualitative Findings

Through the workshop process we gather qualitative information from participants about the attitudes and approach to personal and family health. Farming families, for example, participated in the workshop because it provided “*no fuss health assessment and information*”, with their farming support group peers. In the focus group discussions participants identified factors that inhibit good health and safety. They included:

- Safe work practices (chemicals, sunlight) - “Lack of time”, “not a priority”, “cultural thing ... always done it this way” “Children in the workplace is a problem”.
- Stress management - “Don’t know where to go” “We are stressed” “There aren’t any mental health problems up here.” “We are pretty good up here.”
- Balancing farm work and leisure - “Women tend to get upset - we blokes just go out and work.”
- The Health System - “We don’t have enough information to make a decision” “If you don’t know your way around it’s hard to know what you can ask for”

There were occasional references of ‘gate keeping’ by GPs with some participants feeling that their GP did not always support them in their efforts to learn more about their personal health and to develop options for

addressing issues. An example cited by participants was when they wanted to see a dietician they were advised by medical group receptionists that they must first obtain a referral from a medical practitioner. Participants also commented that they usually waited until they had four or five things wrong with them, as they did not want to waste their time or money. The lack of bulk billing opportunities was also raised as a deterrent.

Finally, the information collected in participant action plans also tells us something about what they thought was of use and important to pursue. We have highlighted several comments under the following categories:

- Physical Activity - “Increasing my physical activity for general health” “exercise riding, walking 30 minutes x 5”
- Diet - “no idea how easy it was to understand basic label reading” “Altering shopping through reading labels” “increase fibre” “Avoid high fat and high sugar”
- Improving Farm Safety/prevent injury - (one group is doing a workshop with Work cover), “use ear muffs, bike helmets, protective clothing” “Complete first aid course” “keep all machinery in safe working order” “all covers and shield in place” “work at a pace I can keep up with”
- BMI - “Lose weight - get to normal BMI”
- Stress - Set aside time for rest and relaxation” “Recognise what stresses me” Improve communication skills”
- Business - “Health plan should be part of business plan;” “without health you’ve got nothing”

## **Discussion**

The results to date reveal significant health indicators that link to current health trends reported throughout Australia and the world. Rural farming sectors have significant health issues related to access to services and information that place their health at greater risk than metropolitan populations. As revealed through the preliminary results men and women are reluctant to report issues such as body pain that affects their work as a problem and are often content to continue with an ailment for long periods. Health screening reveals factors of concern and the need for referral to address serious issues for future disease and mortality rates. 100% of all participants would recommend the program to others and many have found the project to be a life-changing experience. Initial concerns were that we may be preaching to the “worried well” and may not find significant health indicators to report upon due to the self-selecting sample within the program. Farmers would enrol in the project because they have an interest in their health, have a good concept of a healthy lifestyle and health care practices and thus would not have significant health issues. Results from the initial project revealed a 60% need for referral to a medical practitioner or allied health specialist for men and 71% need for referral for women. Issues surrounding mental health, alcohol consumption, body pain, poor work practices and sub standard occupational health and safety practices were all discovered in the SFF project. Similar rates of referrals were required for the dairy industry, however, health indicators did reveal some differences between dairy and the broad acre farmers in the area of weight, cholesterol and blood sugar levels between dairy and broad acre farming.

The results from the second and third year of the SFF program to date reveals there is a significant change in the state of health of participants and a reduction in the need for referral to healthcare agencies. Improvements in body mass, total cholesterol, systolic blood pressure and waist measurements are all statistically significant and will be reported on in subsequent papers.

## **Conclusion**

The SFF and SDFP projects are defining many of the health issues and needs of farmers in Victoria and southern NSW and SA. This project demonstrates through the qualitative and quantitative information collected that the health of both broad acre and dairy farming populations, is not as good as urban dwellers. By providing education and assessment techniques focused upon the needs of the farming population with broad intersectoral collaboration and ownership, the process of addressing the farming family health needs is possible. Farming families are an important part of Australian society, not only for the provision of valued commodities but for their ability to endure economic, climatic, social and demographic constraints thrust upon them. The SFF and SDFP projects and their associated research activities are giving voice to the health, well-being and safety needs of farming families and the means by which their health can be improved.

## **Key Learning’s**

The key learning's that have emerged from the SFF projects focus on the role of intersectoral collaboration and the need for health education to be delivered to rural farming sectors throughout Australia. Many farming practices use the triple bottom line model that focuses on the financial (net production units), natural resource (pasture and environment management) and human resource (persons per production unit) aspects of the farming business. Farming has emerged throughout the last century to become an aged workforce who predominantly works longer, harder and relies on the family unit to provide workforce requirements beyond reasonable limits (Todd 2004).

### **Key learning 1**

Together with research highlighting the significantly lower life expectancy, socio economic status and mortality rates associated with cancer, heart disease and suicide, farming families should be recognised as a population in need of social and political attention. The research undertaken with the SFF projects has supported these major findings by demonstrating the increased health risks faced by farmers and their families.

### **Key learning 2**

We believe the key to the success of the program is based on the ability to involve collaborative partnerships where all partners have a key role within the development and delivery of the project to their relevant representative groups. Joint ownership is imperative in any collaborative body and this process was adapted to aid in the recruitment, facilitation, analysis and delivery of the project. In-kind support was shared amongst all collaborative bodies and well exceeded the current funding received to undertake the research.

### **Key learning 3**

Focus group assessment and qualitative data received highlighted that farming families are keen to understand more about their health and well-being and would like to know more. There was a reluctance by men to attend the doctors due to feelings that they run behind time, only see them for a minute or two and felt they would recover prior to getting an appointment anyway. The use of physical assessments was a major drawcard for participants and gave them access to information about themselves that had previously been denied them.

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