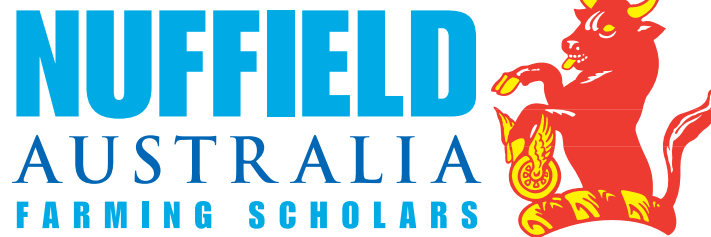


Farmers - Our Diminishing Workforce - how we best manage the future.

A report for



By **Ronald Thompson** Adv Dip Ag Bus Man

2006 Nuffield Australia Scholar

Completed August 2007

Nuffield Australia Project No GRDC 0106



Sponsored by:



© 2007 Nuffield Australia.
All rights reserved.

This publication has been prepared in good faith on the basis of information available at the date of publication without any independent verification. Nuffield Australia does not guarantee or warrant the accuracy, reliability, completeness or currency of the information in this publication nor its usefulness in achieving any purpose.

Readers are responsible for assessing the relevance and accuracy of the content of this publication. Nuffield Australia will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information in this publication.

Products may be identified by proprietary or trade names to help readers identify particular types of products but this is not, and is not intended to be, an endorsement or recommendation of any product or manufacturer referred to. Other products may perform as well or better than those specifically referred to.

This publication is copyright. However, Nuffield Australia encourages wide dissemination of its research, providing the organisation is clearly acknowledged. For any enquiries concerning reproduction or acknowledgement contact the Publications Manager on ph: 02 6964 6600.

Scholar Contact Details

Ronald Thompson
"Yarnham" M/S 30
Chinchilla 4413 Qld
Australia
Mobile: +61 427621159
Phone: +61 746627311
Fax: +61 746627969
Email: yarnham@bigpond.net.au
Email: yarnham@hotmail.com

In submitting this report, the Scholar has agreed to Nuffield Australia publishing this material in its edited form.

Nuffield Australia Contact Details

Nuffield Australia
Telephone: (02) 6964 6600
Facsimile: (02) 6964 1605
Email: enquiries@nuffield.com.au
PO Box 1385, Griffith NSW 2680

Forward

Nothing short of developing a new direction for rural Australia, coupled with a number of innovative and provocative propositions will bring people back to rural and regional areas. As rural dwellers we need to encourage, identify and promote promising rural innovations and practices, then advance them into commercial enterprises to enable their diffusion through the community with the aim of reinvigorating rural and regional Australia.

The exodus of farmers and the rural workforce has been happening for decades. It has been at times subtle and not noticed and some what insidious. The reasons for the decline can be attributed to many factors including long hours, lack of education facilities for the family, drought, interest rates and most importantly the reduction in the terms of trade or the economics of farming. No longer does the lure of working in agriculture hold up as an occupation people would like. It is seen as underpaid and overworked.

“Our stations are surrounded by mining operations and they pay big money. We can’t justify offering employees the same wages, since we don’t have similar profit margins as the mining companies.” AA co human resources manager Wendy O’Shea, The Furrow Feb 2007.

It is easier to work in the mining and energy industry and be paid large wages to be able to “get ahead” quickly. We have a generation of old farmers approaching the end of their working life with no one coming along to take over. There is a concern that there are only so many neighbours out there to buy the farm. With sons and daughters heading off farm it is time to act before it is too late and the skills level reduce.

This is a world wide phenomenon. Other countries, however, are well on the way to addressing the issue of a diminishing workforce. My aim is to alert all stakeholders of ways of addressing the issue through education, recognition of overseas workers, and improving the economic out look through tried and trusted methods. In partnership with the community – rural and urban – business and government - we need to build business cases that support investment in projects and programs which have the effect of reinvigorating Australia’s farming economy and repopulating rural and regional areas.

This report will challenge traditional thinking and make workable suggestions. As a result I see not only the agricultural sector taking note but other industries with similar issues being able to apply the same principles. This report is from a farmer’s perspective or from a primary industry point of view. I am not as concerned with the workforce of associated industry as I am focussing on the farm.

Acknowledgments

Travelling puts you in amazing situations and after 32 flights and 15 countries I have a myriad of people and organizations to thank. I was overwhelmed by the generosity of the past Nuffield members as well as contacts and people met on the way. These include Marilyn Sharp and Rod Bradshaw from Canada, Con Webber and Tom Bermingham from Ireland, Rod Green, Donald Sword and John Stones from the UK, Matheus Zanella from Brazil, Greg Kewley from Sweden as well as Angus Christian and Andrew Nagorcka from Australia.

Companies and organizations to acknowledge include; Nuffield Australia, Jetset Griffith, GRDC, McCains, Landcorp, Ranchers Beef, Sunterra, Agriculture & Food Council of Alberta, Olds College, Austrade, Australian Embassy Brasilia, MLA, CNA Brazil, and the Swedish Department of Agriculture.

Thank you to all 115 people who provided business cards, to all the current Nuffields I have met and to Chontell Giannini for travel organization. Thanks also to Jim Geltch and Nuffield for the great backup, GRDC and Vic Dobos for the sponsorship and to Neil Boshammer and Phillip (Stretch) Stretton for being on hand for the farm. Most importantly to my family, Annabelle, Scott and Bronte my children for coping so well and to Sally, my wonderful wife who organized and kept the farm afloat during the drought and organized rain prior to my homecoming.

Abbreviations

MLA Meat and Livestock Australia

GRDC Grains Research and Development Corporation

USDA United States Department of Agriculture

CIMMYT International Maize and Wheat Improvement Centre

USA United States of America

R&D Research and Development

GM Genetically Modified.

Contents

Forward	iii
Acknowledgments	iv
Abbreviations	iv
Executive Summary	vi
Introduction	8
Arresting the decline	8
Objectives	10
The Aging Workforce	11
Acknowledging the Problem	11
The effect and consequence	11
The aging workforce Solution.....	12
The Economics of Farming	13
The Diminishing terms of Trade	13
The effect and consequence	13
The economics of farming Solution	14
The Importation of Labour	15
The Reasons	15
The effect and consequence	16
The importation of labour Solution	17
Education	19
The importance.....	19
The effect and consequence	20
The Education Solution.....	20
The Family Farm	22
The importance.....	22
The family farm Solutions.....	22
Biofuel and alternate energy	24
The unsung hero	24
The result.....	24
Biofuels Solution.....	25
Research and Development	27
The importance.....	27
Results	28
Research & Development Solution	28
What is the Future	29
Plain English Compendium Summary	30

Executive Summary

The aim of the study is to investigate the future of Australia's agricultural workforce including:

1. Issues

- 1.1 The aging workforce
- 1.2 The economics of farming
- 1.3 The importation of labour
- 1.4 Education
- 1.5 The family farm
- 1.6 Bio fuels and their place in agriculture
- 1.7 Research and Development

2. Findings

- 2.1 With the farming community aging at the current rate with no new policies in place, agriculture faces a tight future.
- 2.2 If the economics of the farm are not dramatically improved the ability to attract workers and career people in all levels associated with farming will result in further agricultural decline.
- 2.3 The importation of labour will be a short term way to prevent farming becoming less competitive.
- 2.4 Education of all people including the urban dwellers will reignite the connection to the land and its production which in turn helps agriculture to focus on what it is good at.
- 2.5 The preservation of the family farm in some format is essential for the spiritual and working connection to remain.
- 2.6 Bio fuels are an essential part of moving agriculture forward so farmers can receive a proportion of income from energy.
- 2.7 An increase in funding or tax breaks for R&D in agriculture is essential to keep our top scientific brains in Australia.

3. Recommendations

- 3.1 Focus on the economics of farming
- 3.2 Better systems for the intergenerational transfer of farms
- 3.3 Value add or vertically integrate to maintain ownership of product for longer
- 3.4 Realize overseas labour as a talented global workforce
- 3.5 Push for the recognition of the deep seated attachment to the land
- 3.6 Recognise it is our job to promote agriculture in a positive way through education
- 3.7 Immediate implementation of biofuels and renewable energy is essential as this proven international technology is globally exercised
- 3.8 Lobby for more R&D funds.

4. Summary

- 4.1 Farmers, rural workers, lobbyists, politicians, researchers, business stakeholders, policy makers and industry representatives need to adopt the recommendations.
- 4.2 My research shows we are being left behind in areas we were formerly leading.
- 4.3 Technology, management, innovation and research as well as workforce management and skill level are areas of concern.
- 4.4 Research and Development is important to all level of industries.
- 4.5 There has been an unprecedented increase in choices for career and work in many agricultural areas.
- 4.6 We live in a technological world where communication is easy and job or career loyalty rare.
- 4.7 Beneficiaries of the report will range from small family farmers to corporate operators.
- 4.8 The findings may apply to associated agricultural industries and to businesses using labour.

Introduction

Arresting the decline

Turning around the reducing workforce starts today. Action now will prevent the disaster of more rural communities disappearing. It is possible to stop the decline in the agricultural workforce. We can change the perception that farmers are no longer innovative and are seen as negative. It is not all too hard.

In early 2006 I began thinking about applying for a Nuffield as I saw first hand the exodus from farms of the current workforce to a power station being built in our area. In 2003 we had 7 people associated with our peanut harvest, by 2006 that was back to 3, not through efficiency increase, but because there was physically no one available to work. It is very tempting during the severe drought to leave the land and work for \$40 to \$50 an hour at the power station.

At the time I was narrowly looking at a solution of bringing in overseas workers as had been done before. The Australian government has brought in Italians, Greeks, Chinese and New Zealanders to cover ourselves in the past. History shows the use of Italians in the cane fields, Greeks and Chinese in horticulture and New Zealanders in shearing.

Why then with immigration at current levels aren't we able to retain a workforce? The reason is that the current generation of migrants have moved straight to the city bypassing our rural communities and are looking for skilled "city" jobs. The red tape associated with employing an overseas worker is perceived as impossible.

During my travels I learnt that importing a workforce was only a short term fix as the majority of workers in other countries would return home after earning sufficient money.

Understandable, as we see Australians work in Dubai or Iraq or China to "get ahead" and come home to family and community.

Consequently I went looking for further solutions and without fail in all countries I visited, the farmers who did not have a problem with a workforce were generally doing well. What set them apart? In most cases the farmers retained ownership of their product 'til further down the supply chain. In Canada there are farmers selling their canola as diesel, in the UK a dairy farmer selling ice cream, in Brazil a farmer selling soybeans as biscuits and the list goes on.

These people all have the farm as the basis of their business. They are not bulk commodity producers; they are a specific product supplier. Economy of scale is important and cooperative marketing is also successful. Where does that leave an everyday Australian farmer? We have to be innovative and proactive and prepared to change and adopt vertical integration practices and recognize the economic benefit of biofuel.

Lettuce in California



Hops in New Zealand



Objectives

This report is designed to be an overall view of the problem of a diminishing rural workforce with workable outcomes. It is written mainly for farmers with all rural people, lobbyists, politicians, researchers and other business stakeholders in mind. I want readers to be challenged by the proposals offered and to question what they are doing as well as challenge what is written here.

The importation of labour, education of people, adoption of biofuels, holding ownership of products till further down the chain, vertical integration, uptake of technology, investigation of unmanned farm machinery, and pushing for more R&D are just some of the areas where action is needed.

The fact that I visited so many countries gives me the ability to, “pick the eyes out” out of many and varied policies. I looked at the shortage of labour with the attitude of “what can be done” not “what can’t be done”. One of the most important points is that as people with an interest in rural Australia, we need to act now for many of the findings to be successful.

The longest centre pivot in the world, Canada.



The Aging Workforce

Acknowledging the Problem

I look at our personal situation and see how aging is affecting our local farming community. In 1987 I moved to Chinchilla as a 24 year old. I went to the local Graingrowers meeting and I was the youngest there by 16 years. In 2006 I was involved with a local catchment management committee and at 43 I was still the youngest by 5 years. The oldest member was 74.

It is not only here in Chinchilla, but throughout Australia that this 'ageing-trend' is evident. In southern England I visited an innovative family that 10 years ago had 6 employees, a dairy herd, a beef herd and arable farming. Now they have sold all the machinery and cattle and just grow grain, rent out the 6 farm houses and the sheds. There is a 40 something year old daughter who does the books for the 70 year old parents. All the children are working as professionals and have no interest in the farm. The interesting thing is the farm is returning a good profit under the new structure.

The effect and consequence

With the ageing of farmers the level of basic skill is reducing or being lost. The way our farmers learnt in the past is very different to learning today. The ability of current farmers to pass on basic skills is hampered by reluctance with technology and lack of understanding of the priorities of the next generation.

Farmers are traditionally reluctant to get help, as evidenced by the lack of uptake in some of the drought support programs. This does not apply to all farmers; however it was evident in all countries visited in varying degrees.

The result of the ageing rural workforce is a long term disaster in the making. The knowledge base that is currently available is scarcely recognized or capitalized on. The fact is that at our peril do we ignore the warning signals. The economics of owning a farm have to stack up if the next generation are to be farmers rather than having a job associated with agriculture. Our efficiency at farming will have reached its peak as the older operators start to wind the business down as they retire. The flip side is that they actually don't retire or they just sell the farm. Either way none of these directions are the best for agriculture. Critical in all this is passing on the farm, something that is almost impossible in Ireland for dairy farmers as the land price skyrockets.

The aging workforce Solution

The simple solution, get more young people in farming. How can that be done? One of the easy ways is to have the farm making a big operating profit so the next generation wants to farm. This also puts the senior members in a better position if they are looking at retirement. If farm finances don't need to be stretched as much the probability for a smooth transition is greater.

Families who grow up on a farm seem to have greater coping and innovation skills. This should not to be downplayed. The flexibility of many forms of farming is also a positive. The reality is that farm workers can work long hours at busy times so it is easy to be flexible when times are slower.

First start programs for young farmers can be a benefit as would some forms of tax break in the early stages of setting up a farm business. A point missed by many in business is the big capital commitment needed to start a farm. With a huge amount of superannuation money around now I suggest that money flowing from that pool may give new opportunities to fund young people into the business.

Yarnham Chinchilla Australia



The Economics of Farming

The Diminishing terms of Trade

“In real terms the price Asian farmers are getting for their rice has not increased for 30 years” (Dr. Robert Zeigler Director General IRRI). How does that compare to other countries and other commodities? In 1989 we received \$198 for our prime hard wheat, in 1997 we received \$181 and in 2003 we were paid \$176. Some other commodities have improved however in seafood; prawns have been around \$20 a kilo for as long as I can remember. In California production has been ramped up to get an economy of scale. **“If I can get 1 US cent a box extra for my rockmelons, it is worth \$130,000 US a year to us.” (Chuck Dias) California.**

The countries with subsidies also had diminishing terms of trade but the farmers tended to be sheltered from real prices. In Ireland where they have been given “favoured nation status” by the EU they have gone ahead in leaps and bounds with good profits from their business but a terrible return on investment from their land. At \$45,000 AUD an acre the value is in developing for housing not for farming. This is an artificial value and so is unsustainable.

We can blame the value of the dollar, the weather, the government or any other reason, however if we are to continue the direction of farming as a business, we have to be profitable and compete for our workforce through having plenty of money and being efficient while looking ahead.

The effect and consequence

The result of poor economics in farming is so wide spread that it is a paper in itself. Just some of these consequences are the reduction in ability to replace equipment, less time for education, resistance to new technology, less R&D funds, reduction in essential inputs, depression, moving out of farming, selling up the farm, putting workers off, as well as telling children that there is no room for them on the farm. One of the results of poor economics is diversification. This can be a benefit to the farm but not necessarily a benefit to agriculture in general. A classic example is the farm belonging to the Swords in the UK mentioned earlier where they sold the livestock and machinery and just contract farm grains as well as rent the workers cottages. Their bottom line is quite good now, however there are no workers on the farm gaining new skills.

Industries that have not had a reduction in their terms of trade such as the energy sector and the mining sector have none of these problems other than sourcing a workforce. The shortage of a workforce is widespread and so those areas with the most money have the best chance at gaining workers, so it will be at our peril as farmers that we continue to let this happen. External influences such as subsidies also have a poor track record in terms of trade. Start up help such as short term tax breaks are positive but long term assistance such as in the EU countries is questionable at best. Brazil with the renewable energy is a shining example of short term help to start a new industry that benefits agriculture as well as the environment and the workforce.

The economics of farming Solution

The solution to arrest the declining terms of trade rests with farmers and their ability to be innovative, decisive and strong. Thirty years ago farmers growing potatoes were likely to bag them in Hessian bags and sell them in the market or quite often beside the road in a stall. Now they will be machine planted and harvested, put through a grading machine, dumped into a truck and sent to a processor to be made into chips or fries. The farmer 30 years ago was unwittingly value adding or vertically integrating by selling his produce directly to the consumer. The wheel has turned and we see farmers markets taking some regions by storm. In our rush to cut costs we automated, cut our workforce and started to be suppliers of bulk commodities. The Innisfail group market their produce now at the Calgary farmers market along with many others. They have kept ownership 'til later and have a relationship with their customer.

Adversity brings innovation and so the foot and mouth disaster changed Steven and Claire Bland of Abbot Lodge for ever as their Holstein herd was lost to infection. Concerned about the terms of trade squeeze they went into Jersey cows and so they now sell ice cream instead of bulk milk. They combine tourism with the farm and run a working dairy farm with a café and function room employing 4 extra staff with 30 flavours of ice cream. The Ma Shau Tau farm in Brazil value added and vertically integrated the farm and they sell all the soy beans grown as packets of biscuits or as oil. A group of farmers at Lethbridge in Alberta sell their canola to Kyoto Fuels as diesel and link their price to the value of a barrel of oil.

These solutions could be called diversification, however making the most of what each farm has to offer is the key. People will say I can't do that here, it wouldn't work. My answer is if you are a grain farmer a long way from anywhere, buy a bakery and supply it with your flour. Thinking out side your comfort zone will turn your terms of trade around.

The Importation of Labour

The Reasons

The bringing in of labour from overseas brings out some emotive short sighted and often poorly adjusted views. The line that the workers will be exploited, underpaid and overworked is inaccurate in this country. We have a justice system in place that generally addresses those issues. History shows Australia is based on overseas labour. Whether it is the first settlers or Chinese or Italian or who ever, we have dealt with the issue for over 200 years.

We are in a global economy and we export all over the world, why not recognize we are in a global labour pool. Australians go all over the world to work in all sorts of conditions and we don't question whether they should go. From a political perspective we should recognise that by employing foreign workers we have the ability to make a difference in countries where wages are low. I see it as a far better option than some of the aid programs that are available to countries we may source workers from.

The recognition that farming is a highly skilled occupation needing hard working thinking people is a good start. The Canadian use of Mexicans and Jamaicans shows how, through good communication and surety of work, you can build a loyal workforce. It is easy to point to bad stories, however those stories will surface regardless of who is being employed. We are already losing ground in being innovative in farming so it is time for all agricultural sectors to mature and take a positive position and sell our needs to the powerbrokers.

“We will need another 50000 workers for when the drought breaks” (NFF board member, Mr Simon Ramsay Tuesday, 17 July 2007). With all due respect I find it hard to comprehend where these people will come from. In May 2007 there were 439000 unemployed people in Australia. (Australian Bureau of Statistics). Do you honestly think that we can magically employ 50000 of those people overnight? It is not just the rural industries looking for extra people; mining, building, health and the list goes on.

Enthusiasm comes from the least expected place sometimes. At the Sunterra meat processing plant in Innisfail, Alberta I was struck by the managements' ability to problem solve. They need workers as there has been an exodus to the oil sands project. The Canadian government put restrictions in place such as advertising locally for staff before being able to source offshore. Recognising the cost and problems with bringing in Philippino workers, they employed an expat Canadian and proceeded to do video interviews. There was no hiding English speaking ability and the prospective workers could see who they would work for. We must remember that the workers need to be settled and happy so everything must be done to promote their cause.

The effect and consequence

There would be many effects and consequences from importing a work force and they are positive and negative.

The effects would be;

- less stress for employers in sourcing workers,
- actually having an available workforce,
- being able to get work done on time,
- more people in the local area,
- different approach to the jobs at hand.

The positive consequences would be;

- Improving efficiencies,
- Broadening our knowledge of culture,
- Recognising problems of other countries and people,
- Less hopelessness,
- Finishing jobs,
- Better returns while getting access to a talented and highly skilled global workforce.

The negatives are;

- Dealing with language and cultural differences
- Housing, transport, and distance,
- Workplace health and safety,
- Government restrictions,
- Short term workers,
- Community perception and bias,
- Security.

The importation of labour Solution

Bringing in overseas workers is a good short term solution. Most foreign workers are looking for high relative wages for 2 to 3 years, then want to return to their home with a lot of money in their pocket. The image to some people, of international labour, conjures up Australia being overrun by undesirable people who will take all the jobs. That is prejudice and an uncalled for view. History shows rural migration has been successful. With the issue of security at the forefront it is easy to just stop everything in its tracks.

After going to Canada and seeing that local workers are offered the jobs first before overseas workers are approached, it is quite easy to see that jobs can be filled by people who want them. Seasonal workers return annually from Mexico and Jamaica or from the religious group the Mennonites and they have long term relationships with farmers of the region.

The Mexican workers earn as much in a day as they would earn in a month at home and so their children now have computers and every day appliances that we take for granted.

Philippine workers are brought in on a 12 month trial and can apply for residency if successful at their job. These people are skilled and great contributors.

Accommodation is the responsibility of the employer and is an area that could be mistreated if it is not regulated.

Visas are only an issue if we put restrictions in place. New Zealand has a no visa policy with Brazil (a massive agricultural nation) so it is easy to get Brazilian workers to come and work as is it easy for New Zealanders to go to Brazil. It is a great 2 way street and the simplicity of the arrangement is staggering.

The same applies to rural backpackers. In Ireland I was confronted by a mother who said organizing a work visa to Australia for her son was an expensive nightmare. He was an experienced tractor driver and wanted to do the winter harvest. A business to help these people and to be a point of contact would surely flourish.

Tom Birmingham of Farm Solutions Ltd in Ireland has a business involved mainly with Eastern European workers. His business was, to source labour for about forty farmers and organize all aspects of the arrangement. He was not looking at rural backpackers, however having that as part of an overall business would be an added source of skilled people.

His biggest issue was coping with EU policies and changes. The costs were born by the business so the farmers had a set fee to pay so they did not need to worry about insurance health etc. This made it streamlined from a farmer's angle.

For the importation of labour to be successful it has to be a “two way street”, the employers and the employees need to be happy. Recognising that there are two types of workers, ones looking to migrate and the others looking at short term work is a necessity.

Access to good accommodation, secure work, transport, education, shops, sports, leisure and most importantly communication are the basis to a happy overseas workforce.

Good English skills, farming skills and an excellent work ethic are the basics from an employer’s point of view.

Workers planting sugar cane in Brazil



Education

The importance

Education can never be underestimated. Education is seen as learning skills. I see it as much more. It is also promoting the farmers of Australia as leaders at their job. Whether it is farmers improving skills, children with good access to schools and universities, showing the public what farmers do or reconnecting to the land, we must make it our job to educate. Skills need to pass on so the basic principles of farming can be kept. As the number of farmers decrease it is essential that we recognize that senior farmers have a responsibility to pass on information. The new generation of farmers will not put up with poor access to good schooling. It may have been acceptable 20 years ago to leave school early and go farming. That is no longer the case. It is an expectation that farmers have good communication and business skills as well as be a guru with technology. This is the new world.

During my trip I had a computer, video, digital camera, mobile phone, blue tooth, wireless, Skype, facebook, Nuffield blog, eticket, cashpassport, Tom Tom GPS, and that was just in my carry on luggage. This shows that education can take on a whole new perspective with technology being a mode for remote and rural areas. The ability to communicate via video link from all over the world shows that it is currently a great way to educate.

With ever decreasing numbers in the rural landscape it is our responsibility to get support for what we do. Agforce Queensland's "Every Family needs a Farmer" program is on the right track. This is the responsibility of farmers to educate the consumers in all aspects of farming be it GM uptake, bio fuels, water issues, food safety, environmental issues and terms of trade.

We are in a global economy and we export our products all over the world so we need to market our products better than the rest. We therefore need to show our customers just how professional we are at our job through programs such as I have mentioned as well as being seen as positive. This is not the only answer though, as farmers are traditionally perceived as slow talking with a piece of grass in their mouth. Perceptions are slow to change and they are everything in marketing. We need to see a promotion of the spiritual connection to the land and its surrounds.

We all have a deep desire to associate with the bush, with trees and native animals in this country. In the UK the community relates to green fields and hedges with a few sheep and cattle and Switzerland, it is green mountains with brown and white cows. The US it is sprawling grassy plains with cowboys. As farmers we see ourselves more like the US model with an outback theme but in reality this is at odds with a large proportion of the population. We need to change that perception as we will be the beneficiaries of the increase in support.

The effect and consequence

In New Zealand the Dairy Institute has run a media advertising and education program aimed at 25 to 35 year olds and has had large success in attracting people to the industry. Some of the examples are a mechanic going to contract milking, a seamstress going to dairy and a bus driver to farm manager. People want to be part of a strong industry so it is possible to make a difference. Positive education is a huge help for support to industry.

The result of reducing education is the divide between farmers and their city counterparts. As farmers we have assumed the urban masses would understand our direction and plight. This has led to a lot of misunderstanding from both parties. As farmers we have to educate our consumers and not just rely on past ideas.

The consequence of poor education facilities in rural areas has meant that a catch 22 position has emerged. As families recognized the difficulty in educating they moved children to boarding or to other places with more facilities. In our region alone, this has led to 5 single teacher schools shutting down and the centralising of education. Long days on a school bus are not much fun for families so it is increasingly difficult to attract workers. We therefore have less and less people on the farms.

The Education Solution

The term is so broad that it is easy to generalize, however I suggest that if as farmers we don't use education for our own benefit our industry will fall behind. Recognition of the level of skills of farmers and farm workers has been offered for a number of years. The formalizing of education by the "recognition of prior learning" is a step in the right direction but it is hard to get a good uptake as farmers do not see any benefit in a "piece of paper".

It is time to change that attitude as we expect the workforce to be qualified, so I think we should lead by example. Take on some distance education in business or management and get the skills needed to take on new ventures such as value adding or direct marketing.

It is easy to be complacent but it is imperative that we keep up with new technology. In 1980 if you needed money you went to the bank during banking hours, now the closest most people get to the bank is the ATM where you can use any number of cards to get money any where in the world.

Being able to use a computer is a necessity now so the future is mind boggling. As individuals we need to be up to date with current technology and it is our responsibility to stay educated.

Re-education is an important issue for the general community. There has been a bombarding of the public by organized interest groups that has damaged the reputation of agriculture.

Individual and organized programs are an absolute necessity for the rural community to press their positive influence.

We can take a leaf out of the advertising community and keep repeating our line ‘til we are sick of hearing it and then repeat it some more. **“Every family needs a farmer” (Agforce Queensland)**. We need to do this because the number of people with a direct link to farming is continually getting smaller. It is the responsibility of all rural stakeholders to remove the urban rural divide.

The education of our potential workforce involves promoting how good it is to bring up a family in the country. There are the positives of having a community, learning to be innovative and capable and being with family. There is the ability to be flexible with work hours and holidays, something that the mining and energy industry doesn’t have. The New Zealand dairy industry education model has been a great success aimed at 25 to 35 year old people.

With imported labour coming to our country we need to have the ability to learn new languages as well as being able to teach English. We need rural learning centres with languages to attract new people to regional areas. The learning centres really don’t need many teachers as communication can put the rural learner in the same room as someone in the city via video link.

The Family Farm

The importance

I see the continuation of the family farm as essential in Australian agriculture. The community spirit is high in areas with family ownership. Corporate farms in our region however provide valuable work and have many top level farmers working for them. Family farms are taking on increasing corporate ideas as part of being successful. These include turning over machinery more regularly, having a company structure, and getting economy of scale by expanding land area by buying or leasing extra.

The main difference between corporate farmers and family farmers is that the public warms to private ownership more than to corporate ownership due to the perception that big business farms are there only for the money. I am not going to get into that argument. However big farms can exert plenty of pressure on local businesses.

The family farm is a natural breeding ground for the next generation of agriculturists. The fact that exposure to farming from an early age makes for capable people can not be denied. How those people are encouraged to stay farming is the issue. It is interesting to note that on the farms I visited in Ireland that were corporate owned they had only farmers' sons managing them.

The downside to a family farm comes when hard decisions need to be made. As the farm is also usually the home, when big decisions are made they can lead to instability in the business. This could mean family members moving to other industries. Another down side can be the lack of scale. As 70% of farms (privately owned) produce 30% of the wealth and with terms of trade not being addressed, it means that to supplement income, farmers are working off farm creating an ongoing problem. This usually means that the farm will not be viable and transition to the next generation is as a token, not a business.

The family farm Solutions

The family farm will take on a more corporate or professional role if it is to be profitable into the next few decades. Small farms even though they contribute to agriculture will find it hard to survive without becoming smarter and moving to some form of vertical integration. Many businesses won't be in the same format as today. Better financial systems may see a release of capital to help run the business. Thinking in a different way such as bringing in financial partners from the urban community in an effort to release capital has some merit.

The family farm will always be a source of next generation farmers. As such it needs to be expanded and cultivated so there will be an increased number of young farmers able to move into roles in the future. This is not the only area that farmers will come from, as foreign workers no doubt will make their mark. I see the family as being integral in foreign workers being a long term success. In the past as foreign workers came in, they worked, learnt, and then invested in land with family and the process started again.

Keeping the family farm ensures that a deep seated connection to the land remains in place. This is essential to be able to have a balance in what is best environmentally as well as economically. This is proven by the stewardship program that has replaced England's production subsidies. It has encouraged farm families to stay on the land and look after it in a better environmental way while staying in business. This may not be the answer for Australia. However it does keep farmers on their farms for the future.

I see the family farm owned by investors including the farmer who will see a return from capital gain of the land with a business of farming attached making a working profit. The need to free up capital is paramount and as history shows the land value continues to climb. This profitability will drive up the need for more workers and will help address the diminishing workforce.

This based on American and English models where the land is quite often owned by parties other than the farmers themselves.

Rain falling across the Brazilian landscape.



Biofuel and alternate energy

The unsung hero

In every country that I visited biofuel was a major part of life. The recognition of the importance to all involved left me embarrassed that Australia, a past leader in so many fields, had essentially turned its back on an amazing industry. We have tinkered around the edge while a country like Brazil has embraced biofuel since the mid 1970's, the US mandating 20% of its fuel to be biofuel by 2013, Sweden mandating biofuel for the last 5 years and even China selling biofuel.

The reality is that there are many ways to produce and sell the fuel with Brazil for example giving its sugar farmers the ability to choose between sugar and ethanol depending on price. The US is a classic example and the point missed by most is that they are going down the biofuel path for homeland security reasons.

This is a totally new driver in the market and you can argue it is distorting prices. However history suggests that won't worry the US if past subsidy policies are anything to go by. The Swedes are using high blends for other reasons but it really doesn't matter. Why? Because it is in place with public support due to the price. E85 at 7.90 kr/litre against ULP at 11.99 kr/litre or \$1.35 AUD and \$2.05 respectively makes it easy which one to choose.

The result

One of the big winners has been the farming industry, through increased grain prices and security of feed. Johan, a mixed farmer from Grenna in Sweden saw it as a "license to print money". He can now justify continuing to grow grain and make a good return from selling the grain for ethanol, then buying back the brewers grain, adding enzymes developed specifically for pigs and feed them. He is able to afford to keep his workers on and prepare for a transition of the farm to the next generation.

In southern Alberta Canada, there were a group of farmers who had linked their canola price to the value of a barrel of oil. This meant that they could keep ownership of the product until it was actually diesel. They had become part of the energy industry playing by industry rules. The US has a lot of help available for the set up of the biofuel industry and this can not be ignored. The reality is that they have put the policy in place. Therefore grain farmers will reap the benefit of better prices. In fact an off the record quote by a US grain trader said "as a result of the current administration mandating 20% biofuel by 2013 I think we are seeing the new base for grain price."

The argument against ethanol from grain comes from several places, the intensive feed industry and consumer groups worried about the increase in food prices. The intensive feed industry has grown exponentially over the last 10 years. They have been a mainstay in the use of Australian grain. The down side is that the relationship between feeders and suppliers has been strained at best.

Wild fluctuations due to weather have occurred and played havoc with bottom lines. The arrival of a new player has upset some in the feed industry, however it seems mainly confined to Australia as other countries have worked through the problems and the grain farmers have prospered.

Brazil has opted for ethanol from sugar and is at the forefront of new technology to convert cellulose to ethanol. The US is likely to **“offer support to feeders in the farm bill” (Dr John Dunn USDA)** as well as encourage them to work hand in hand with ethanol producers. Sweden has developed enzymes to complement pig feeding. These are all positive innovative solutions that we struggle with as we watch potential profits disappear as we procrastinate.

The increase in the price of food is a reality and it has some short term dire consequences. In many areas people will struggle with the basics but as told by the Director General of IRRI in Manila, rice farmers can not make ends meet any more so either way there is going to be some pain. If the farmers go out of business the pain will be greater in the long term. In the western world only three quarters of the food purchased is actually eaten.

“According to a 1997 study by US Department of Agriculture's Economic Research Service (ERS) entitled "Estimating and Addressing America's Food Losses", about 96 billion pounds of food, or more than a quarter of the 356 billion pounds of edible food available for human consumption in the United States, was lost to human use by food retailers, consumers, and foodservice establishments in 1995.” (USDA)

Biofuels Solution

There is a lot of pressure in this country to ignore biofuels as a source of future renewable energy. I do not understand the position given what the rest of the world is doing. The increase in grain prices in the short term will give Australian farmers a much needed boost. This helps to improve farmers' terms of trade which in turn grows the business and profitability. The result is an ability to pay better wages and provide better work conditions.

We as grain farmers will benefit regardless of whether we produce biofuels or not due to the world's increasing demand for grain for ethanol. To benefit the wider community we need to mandate the use of biofuels and then encourage the feed industry to follow the USA and Sweden where they set up feedlots next to biofuel factories. Anything is possible with the right R&D.

The use of biofuel is a way of diversifying the income of farmers from all food and fibre to energy. Traditionally energy has been associated with wealth and high income so it is a sound principal to become part of the industry. There are many forms of renewable energy available to farmers including wind, solar, recycling waste to energy, as well as grains and sugar. All of these have a place in varying degrees. They all will reinvigorate our rural communities.

In Brazil, arguably the most advanced user of biofuels in the world, they are planting Australian gum trees in plantations for future ethanol production by cellulose technology. They acknowledge that this system is about five or six years from start-up, however they will hit the ground running. There are plenty of areas in Australia that would be able to follow Brazil's lead.

The USA has mandated the use of biofuel and so regardless of whether we agree or not as Australian farmers, we have to accept the situation and make the most of it. In all countries I visited the use of biofuel has been mandated so there is a ready market. Political pressure needs to be mounted to give agricultural energy a say rather than focussing on digging up the land and exporting the raw materials.

By producing biofuels, farmers would be able to take the high moral ground in the debate. Environmentally the production of alternate energy leaves the mining and energy sector lagging. The answer to many problems is to take the lead and change our thinking so our farmers can be part of the money chain.

In northern England and Southern Alberta wind farms were springing up daily and in many cases the farmers were receiving good payments from the windmills. In northern England and in Sweden they even owned the mills outright. The use of geothermal energy was also used to heat houses in many of the cold countries. Pilot plants for the high temperature incineration of organic waste products were being trialled in Alberta.

In Brazil the use of GM soybeans was widespread for biofuel use as it had higher oil yields. In Canada we were told that there were varieties of GM canola ready to use that would provide a 60% increase in yield. I have not followed through the ethical debate on GM. However the results need further scrutiny as to whether as farmers we would be better off.

Research and Development

The importance

Research and development used to be a hallmark of Australia's agricultural sector. We led the world with our R&D officers in the primary industry departments. We were not scared to try new things, whether it was developing the Belmont Red cattle breed or new wheat varieties or tropical legumes or a myriad of other projects that put Australia at the front of the race.

We have been going down hill since the nineties.

The Bureau of Statistics, Kevin Square, July 2000

"0.67 of a per cent of our gross domestic product was spent on research and development in 2000." **"Every dollar industry spends on research and development, the whole country benefits by \$2"**. "If we don't have a vibrant, dynamic R & D field in Australia, we really won't have an industry that can compete in the future."

"Australia compares poorly to the R & D investments of other countries."

The Hon. Duncan Gay (Deputy Leader of the Opposition) Hansard 31 August 2004

"Department of Primary Industries has been cut by \$37 million."

"incredibly stupid proposal to close the Grafton, Gosford, Deniliquin and Temora agricultural research and advisory stations."

The quotes could go on but it is not necessary to keep repeating a familiar message. The reality from my perspective, regardless of whether the R&D findings stay in Australia or not are that we need to have scientists working here. If they are to go overseas the information they discover has less credence in this country and we lose the ability to at least have some control over our own destiny.

In each country that I visited including Mexico and the Philippines the head of the major research facilities were Australians. Having seen that the Swedes developed enzymes to add to brewers' grain I am somewhat sceptical of claims by some in Australia that brewers' grain has limited feed use. I am not being critical of what R&D organizations are doing, I am critical of what cutbacks have occurred and what R&D is not being done.

Results

Where have all our innovators gone? A lot of them have moved overseas. The scientific people of our community have long been unsung heroes so when research money disappears they need to go elsewhere to do great work. The closing down of research stations has a devastating effect on regions and industry. It has helped contribute to the rural decline as people move away to jobs.

Research & Development Solution

We constantly hear that Australian farmers are among the best in the world. I am not sure if this is what we would like to think or that this is really the case. In the past I think that we were world leaders in many aspects of farming, however now we lag behind in many areas. This has coincided with a massive reduction in available public funding for R&D. There is still a lot of commercial R&D happening, although this tends to be very narrow such as the development of GM cotton.

In many parts of the country we are facing a fertility decline over time and there are areas that struggle to find alternate legume crops that are economical to grow in rotation with current crops. We have struggled with drought for years and it is research from CIMMYT in Mexico that should give us a drought resistant wheat variety. Alternative plants for the production of biofuel are being developed in Brazil, Canada and the US while we watch.

All this comes at a cost. We effectively have to pay for the new discoveries as they become commercially available. If they were being developed here we would be paying as contributors to local R&D not as a cost to import overseas technology. Even if the discoveries are not developed in this country we would at least have some control over the intellectual property.

The answer to R&D is to make it worthwhile by doubling tax incentives for a start. A large number of Australian scientists would stay in this country if they had access to cutting edge research. The potential from biofuels is gigantic judging by Brazil, France, Sweden, US and Canada so there is a whole industry that needs local R&D to help it catch up with the rest of the world. Cutting red tape and getting R&D projects linked to current problems is also going to benefit Australian farmers.

R&D as shown has contributed to farmers' profitability as well as community viability by having cutting edge programs. The development of the Gene Shears was a great example of how R&D can benefit the community. Profitability is linked to ability to employ people.

What is the Future

The future is as bright as we are prepared to fight for. If we want automation and unmanned equipment then let us put in the R&D to see it eventuate. If we acknowledge the need for overseas labour then let's get on and lobby for better ways of bringing people to this country.

The streamlining of farming visas by recognizing countries that could have simplified visas such as Brazil, Mexico, and all South Asian countries would open up new places for farm workers. Farm workers from those areas need good orientation of our language and what we mean when we are talking.

If it is the preservation of the family farm we want, let us get some corporate principals in place and aim for success with ownership of our products retained for longer down the chain.

Addressing the aging farm population is critical as time is running out to successfully transfer the knowledge bank to a new generation. This will be done by older farmers taking on the responsibility to pass on skills.

Taking on new technology in the form of automation and communication is an absolute must for farmers to stay competitive in a world where we don't know where our next competitor will come from.

Changing the reducing terms of trade is fundamental to the success of farming in this country. This will be done by innovation such as better marketing, selling to the end user, value adding, vertical integration, the adoption of biofuels with the use of by products and alternate energy.

I can not reiterate enough how important the last statement is. We are at a point in history when the recognition of alternative fuels and the future climate is at frenzy point. There are massive economic benefits to be gained for farmers from all things associated with energy, carbon and climate variability. Alternatively there are potentially huge costs if we ignore the signals.

I am not providing the "magic bullet" for farmers as that is almost impossible to get a "one size fits all" system. I have provided many areas that will ultimately address the problem of a diminishing workforce on farms by giving suggestions without the need to have government programs or assistance increased.

The process of improving the economics of farming will have the flow on effect of reversing our diminishing workforce and so let us best manage the future.

Plain English Compendium Summary

Project Title:	How we best make use of our diminishing workforce.
ANFSA Project No.:	GRDC 0106
Scholar:	Ronald Thompson
Organisation:	Yarnham Grazing Company
Phone:	+61(0) 7 46627311
Fax:	+61(0) 7 46627969
Email:	yarnham@bigpond.net.au
Objectives	To investigate the problem of a diminishing rural workforce and find workable outcomes designed mainly for farmers with other stakeholders in mind.
Background	The exodus of farmers from the rural workforce has been happening for decades. It has been at times subtle and gone unnoticed and has been some what insidious. This has led to a shortage of skilled workers, an aging farming population and the decline of local communities. This has happened internationally as farmers try to combat a reduction in their profitability. This study was to look for solutions to the ongoing problem.
Research	The research was conducted over a one year period starting in June 2006. The study included five months of overseas travel to countries such as New Zealand, USA, Canada, Mexico, Brazil, France, Ireland UK, Sweden, Philippines and China as well as ravel and meetings in eastern Australia.
Outcomes	With the farming community aging at the current rate with no new policies in place, agriculture faces a tight future. If the economics of the farm are not dramatically improved the ability to attract workers and career people in all levels associated with farming will result in further agricultural decline. The importation of labour will be a short term way to prevent farming becoming more uncompetitive. Education of all people including the urban dwellers will reignite the connection to the land and its production which in turn helps agriculture to focus on what it is good at. The preservation of the family farm in some format is essential for the spiritual and working connection to remain. Bio fuels are an essential part of moving agriculture forward so farmers can receive a proportion of income from energy. An increase in funding or tax breaks for R&D in agriculture is essential to keep our top scientific brains in Australia and consequently, it puts us at the front of the race.
Implications	Farming as we know it will never be the same. With the pressure of economics, climate, environment and population the industry must embrace the new direction and become innovative in its ideas. Australian farmers will need to be educated and technologically advanced to change their terms of trade. If they do this it will in turn reduce the problem of a diminishing workforce.