

THE WINSTON CHURCHILL MEMORIAL TRUST OF AUSTRALIA

Report by Anne Stünzner – 2001 Churchill Fellow

To study producer uptake of new technologies, rural innovation and the potential of group learning: Application in rural Australia.

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INTRODUCTION

This report will be concentrating on examining the rates of innovation uptake and the extent of group learning in areas of Europe, South America and North America. I will use economic and political approaches and a psychological analysis of the motivation or styles of learning characteristic of agricultural producers as a tools to compare and contrast learning and innovation uptake overseas compared to that within Australia. My report also discusses the lessons for Australian producers and makes recommendations for the future of extension and adult education in Australia.

I would like to acknowledge and thank the Winston Churchill Memorial Trust for this opportunity. I would also like to recognize my family, especially my husband Gordon Stünzner for supporting me in my endeavors.

EXECUTIVE SUMMARY

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Project Description: To study producer uptake of new technologies, of innovation and the potential of group learning in rural extension in application to Australian production.

The three main influences affecting producer adoption of new technologies are economic, psychological and political.

These influences also combine to affect the ability of producers to apply innovation on farm, and are relevant to the limited success in Australia of the group as a vehicle for learning. Economic pressure needs to be considerable for the majority of farmers to adopt change. However, the failure of some farming regions and nations to react quickly, even to strong economic stimulus might be explained in part by the psychology of farmers in some regions and disguised by the political intervention of governments in others. As it is unlikely that the nature of political interference will change, the primary investment in improving rates of innovation uptake and adoption of new technologies in Australia, needs to be in human capital. By better understanding the learning needs and styles of Australian farmers, research and extension investment will be more appropriate to farmers needs. While governments are moving toward group extension in Research and Development, my report suggests that individual learning treatments augmented by group learning in a user pays system would be more effective. In order to provide this combination of services, the privatization of government extension services should be considered.

Highlights: People & Places.

In relation to Europe, I would include a visit to the Scottish Agricultural College to examine a privatized extension service that's profitable.

In South America I would recommend the AACREA organisation, to look at a successful non-political farming organisation that runs its own research, development and extension program, without government help (intervention). In the United States I would recommend a visit to the rural leadership and community development program in Madison Wisconsin as well as to the Heartland Center and Center for Rural and Applied Innovation in Lincoln Nebraska.

To disseminate the information:

I have included in the appendix a list of completed (*) and to be completed forums to disseminate the information I have learnt from my trip. I will also incorporate these ideas and issues in my role on the Queensland Farmbis State Planning Group as well as in my involvement in the resource management and Northern Beef Program Industry Committee's of Meat & Livestock Australia.

Programme: My programme included Scotland, Netherlands, Paraguay, Argentina and The United States of America. I have included a full list of interviews in the appendix.

MAIN BODY

I will divide the body of this report into three main sections; experiences in Europe, South America and North America. These countries have vastly different economies, commodity markets and agri-political relationships. During my trip I found, even with a formal tertiary education in economics that I struggled to find some overarching comparative economic indicators connecting Australia, Europe, Sth America and the USA that could be identified as being responsible for innovation and group learning – or the lack of it. Instead, I felt a social science or psychological approach better identified the primary causes for innovation and group learning (or lack of it); and that economics better explained the flow on effect. While many of the economic causation theories I will discuss in this paper are by no means new, I have chosen to augment them with a framework model developed by Ian Plowman; a psychologist with the Department of Primary Industries in Brisbane.

Ian Plowman's model discusses the application of sibling birth order to psychological development and in turn, its relevance to and implications for innovation within rural industries.¹ As a tool, the Plowman model identifies the relatively consistent differences between siblings and the roles within Agriculture that they may (or may not) take. The Plowman model suggests that this has an important impact on innovation or conservatism in rural Australia. Under this model Plowman suggests that the eldest child in a family

¹ Plowman, Ian., 2002, Department of Primary Industries, Brisbane. Plowman is presently undertaking doctoral research examining the psychological factors that help or hinder innovation uptake.

will be more conservative (hence less likely to apply innovation) more likely to take on roles of leadership and be more controlling in nature. Further reflecting their generally close relationship with parents during childhood, they are more likely to appeal to higher authority to assist them with any challenges. Hence they prefer authority figures as sources of learning. Second born children are often more innovative, are strongly self-directed instead of controlling and often quite able, but less willing to take on leadership roles. Rather they are more likely to have broader interests outside the family business and are more likely to seek opportunities for personal fulfillment elsewhere. The youngest child is often more creative and more likely to crave approval and affection. Youngest children can often be seen in more caring type professions.

In the context of Australian Agriculture, it is usually the eldest male child who inherits the family farm. If that male child is the first, he is more likely to be conservative; if the second, he may not wish to stay on the farm anyway or being creative and wanting to change things, tensions may build between father and son. Hence this pattern of generational inheritance could be responsible for a decline in the application of innovation, slow rates of technology uptake and slow trends toward cooperative or group learning. This theory may even be extrapolated to explain the relative conservatism more frequently found in the leadership of Agri-politics and rural communities. While Ian Plowman's theory is still being subjected to academic debate; it has, along with traditional economic and political causes, provided an appropriate

structure through which I could make sense of the information I have collected.

1. Europe

1.1 Scotland

Economic drivers in the Scottish beef industry have become almost non-existent during the past ten years. This is due to a number of factors. Firstly, the farming income in Britain has been substantially reduced over the last 10 years due to European Union (EU) agricultural regulations. Farmers are required to “set aside” 10% of their land as fallow each year and are paid EU subsidies to limit the amount of agricultural production. Effectively, farmers are paid to be less productive and efficient. In addition to EU restrictions, supermarkets use market power and economies of scale to dominate the market and enforce harsh contractual conditions on farmers into unsustainable low prices. Of all the farmers I interviewed, not one has made a positive net rate of return on assets in the past 5 years. This does not mean they are not profitable, just that their asset base is in decline. Basic technologies, common in Australia are not used by farmers in Britain, as there is no incentive to be more efficient. For example, in terms of production technologies, British farmers all employ a Veterinarian at considerable cost to do their pregnancy testing, speying and vaccination. This approach contrasts considerably with Australia where these production skills are generally used and applied by the producer rather than the Veterinarian. However, It is

relevant to note that computerized record keeping that are crucial to obtaining EU subsidies was extremely efficient and well maintained.

Secondly, British farmers have also suffered as a result of Foot and Mouth and BSE diseases sweeping the country. . Due to these disease problems, and coupled with their general ignorance of primary production, a high proportion of the community believes that meat products are inherently unsafe, resulting in less meat consumption. The British public – many of whom are 5 or 6 generations removed from the land - no longer understand the relationship between farmers and food production, nor do they remember the ration years of the war. It is also cheaper for the consumer to buy beef imported from Africa and Argentina. When you consider that farmers represent only 1% of the voting community in Britain, it is little wonder that political and urban support of the farming community is low.

Lastly, although Scotland has some of the most extensive and environmentally challenging climates for grazing in Europe, in relation to my experiences in Australia, I found Scottish farmers to be extremely conservative and traditional with individual farming businesses' being in one family for up to 15 generations. If we use the Plowman model, and farms in Scotland are traditionally passed from eldest male to eldest male, then it is not surprising that after 15 generations, innovation rates generally, are extremely low. However, it is important to note that when all the cattle markets were closed due to travel restrictions under Foot and Mouth, a National system of video sales was adopted within three months. The adoption of new

technologies within the British Livestock Industry only occurs when economic and environmental pressures become extreme.

The limit on cattle and crop production set by the European Union combined with poor domestic political and public perceptions of farming reinforces that there are no market drivers for farmers to be more profitable. In the absence of an extraordinary event, economic drivers for improved cattle production or adoption of new technologies are poor. The conservative nature of the farmers themselves further adds to this problem.

Under economic reforms of the Thatcher government, the Scottish Agricultural College privatized its extension service. In terms of identifying client needs, the one-on-one format the service provides meets client needs. This system works very well as it caters to the individualistic nature, particularly of conservative Northern Scottish farmers. The Scottish Agricultural Colleges' rural extension service operates on a subscription based individual client service. The Scottish Agricultural College is one of the few Agricultural Colleges in the United Kingdom that runs at a profit in its extension services center². Farmers pay a basic rate for a set number of hours consultation both in person and over the phone. All laboratory testing and veterinary services are extra. The system is tiered with the top rate including newsletters etc. While privatization of extension was forced on farmers, the individualistic nature of the teaching and consultancy service provides the right learning environment for Scottish Farmers.

² Seton, Jim, Director Rural Extension Services, Scottish Agricultural College, Inverness, Scotland, August, 2001.

The Scottish farming system, as I understood it in relation to innovation and group learning, is very much in keeping with Ian Plowman's model. Agriculture is very conservative and highly individualistic. This individualistic nature of farmers has also led to over capitalization by most farms. The Scottish Agricultural College has gone some way in addressing these issues by providing an appropriate learning environment. The research departments of the SAC were concentrated on the future in farming for environmental management as well as investigating bioresearch with animals for humans. These areas are seen as alternative sustainable industries for the future for farming. Agricultural land has become predominantly real estate and as farms become unsustainable, they go up for sale, urban communities spread to fill the land and the price of farming land becomes unreachable to other farmers. The future opportunities and scenario for agricultural and innovation include quality products and specialization within the food industries, such as organic and "farm shop" produce. Food safety and consumer trust must be re-established in order to promote this type of industry development.

How are these issues relevant to Australia and what are the solutions? Australia is and has been down the path of privatising rural extension services. How do we accommodate this culture change of extension services moving from being free or subsidized to totally "user pays" without the trauma associated with Thatcher's Britain? If we look again at the Plowman model in relation to Australian Agriculture, it is clear that the format of educational services needs to be carefully structured to meet client needs. For example, in the Northern Territory where a high proportion of producers have come

from other states and countries (often in the form of company investment) and/or other industries and the history of established production businesses is relatively short, they are more likely to be innovative and to be co-operative learners. Hence a group learning environment may be appropriate. The economic challenges of distance and markets would make alliances and group interaction more effective. More established areas of Australian farming that have 6 or 7 generations of one farming family, rely on past knowledge and can become lazy towards innovation. From my experience, and as Plowman's model indicates these producers would benefit more from the individualistic treatment of extension personnel.

The presentation and structure of extension material within a commercialized system should differ for sections of Australian Agriculture. An individualistic approach may be more appropriate for areas that are more established and conservative – such as in areas of NSW, VIC, Sth East QLD and Tasmania. More recently established or first generation farming areas such as in Northern Queensland, NT and Western Australia will probably find more benefit from a group learning approach.

1.2 Holland

My perspectives on Holland are different to the other areas of research within my report as they concentrate exclusively on one company. The firm had 150 consultants on its books with about 40 consultants in regular work with contracts in Asia, Africa, the Pacific and Europe. The primary lesson out of this company was that any project tender was done after an assessment of

the target by a sociologist or psychologist prior to sending in an appropriate consultancy team. The company feels this benefited them in two primary ways. Firstly, there was no wasted time or money on mis-communication or mis-understanding of what was to be provided by their company. Secondly, the most appropriate person was selected for the job, keeping cultural sensitivities in mind. This approach increased greatly the chances of renewing the contract, helped the company to successfully tender for international projects and greatly increased the success rates of all projects. This high success rate has also enabled the company to negotiate contracts on a cost/performance basis with consultants where appropriate. In relation to Australia, it would be beneficial to carefully match extension with their target audience for information delivery. It would also help to establish the most appropriate learning environment for producers. This sociological perspective would benefit the large research organisations in determining which scientists are OK for extension work on top of their research activities and which scientists should never leave the laboratory. Also, this perspective would promote the involvement of women and young people in primary industries by better accommodating their needs in group learning activities. For example, if a group of rural businesses were assessed for their training needs and their requirements to get to training, surely childcare would be of primary importance if all relevant parties were to be involved. Unless training styles and formats are changed, this mismatch of perception between training offered versus client needs, will continue.

The new training programs put out by the EDGE network funded by MLA has gone part way to addressing these concerns. While a sociologist isn't used, a team combining of producers and scientists, review all potential presenters and content of rural training programs to ensure their appropriateness for producers. I would strongly recommend this type of approach across all areas of agricultural training. This procedure will guarantee better participation by minority groups within Agricultural production and also importantly attract a wider range of traditionalist producers as programs are more structured to cater for their needs. There will be an encouragement of more group learning as cost effectiveness overcomes traditional conservative individualistic approaches to training. With the scaling down of Government provided extension services within Australia, this sociological/research model needs to be adopted to create an efficient and profitable learning environment.

2. South America

2.1 Paraguay

Costs of production in Paraguay are so low that profitability on most farms is as high as 49%. Government and industry infrastructure is poor and diseases in cattle prohibit the development of export markets. Technological innovation is not relevant, as labour costs are low. It is also important to note that a more efficient production pathway puts people out of work – creating poverty within the local community. I witnessed little diversification or value adding on farm.

Within Paraguay less than 1% of farmers belong to a farming association³.

Most innovation within Paraguay is introduced from overseas with big companies from the USA and Germany investing into the country. However, most of these investing nations then take their money out again. Paraguayan farmers generally have extremely high profit margins and sit at the top of the social ladder both politically and financially. There is little or no economic or political motivation to change farming practices.

2.2 Argentina

I went to Argentina primarily to attend the AACREA conference in Mar del Plata as well as to visit farmers in the Western Buenos Aires province.

Despite (or perhaps because of) severe economic hardships, unstable political governance and disease problems, Argentine farmers have some of the lowest costs of production and highest rates of innovation in the world⁴.

There is a great divide between the rich and poor in Argentina with the farmers generally being rich. For example, less than 5 % of the whole Argentine population have a tertiary education, of the wealthy people, 95% have a tertiary education with over 75% of farmers having a tertiary education.

⁵ From my discussions with local farmers, primary business costs such as labour, transport, seed and machinery, due to the then linking of the Peso to the US dollar, were comparable to Australia.

³ Zavala, Joachquim, 2001 Interview.

⁴ Hughes, David, 2001 Interview.

⁵ AACREA conference

However, in relation to running a farming business, there were several main attitudinal differences to those in Australia that are outlined below.

Firstly, there is little or no community debate about genetically modified crops. The majority of the population do not have enough to eat at an affordable price, so ethical concerns are not an economic option for the consumer. This debate extends in part to the issue of foot and mouth disease. As farmers vaccinate, the perspective is that foot and mouth is only a problem or an issue for those nations who don't have it, and that global vaccination is only a matter of time. The majority of beef in Argentina is consumed in South America and this will probably always remain their primary market. In this environment, again, animal welfare is a luxury of the rich.

Secondly, and quite notably, Argentine beef producers and farmers in general are non-political. When I visited Argentina, there were only two sitting members with a farming background in parliament and no organized "rural" political party. Argentine beef producers view themselves as the most efficient and unsubsidized beef producers in the world. This assumption is quite reasonable. There is no help from the government in the form of actual subsidies for production- there is also little money spent by Government on research and development in Agriculture. The primary source of research is on-farm partnerships between farmers and business corporations. Most of the on-farm extension is negotiated through organized research with farming groups. For example, a group of farmers in a particular region may group together to employ an agronomist to solve crop problems in their area. It is very common for a group of farmers to have a Veterinarian on permanent

contract as well as an Agricultural engineer (= Agricultural scientist). When needed, these groups will interact with corporations such as Monsanto to run crop trials and research on farm.

The Asociacion Argentina de Consorcios Regionales de Experimentacion Agricola (Argentine association of consortiums for regional experimentation in Agriculture) or AACREA, was formed initially to solve the erosion problems caused by heavy farming on river flats. The AACREA movement has evolved to include most areas of Argentine agriculture. Farmers within a region form a group and share the costs of consultancy. The way AACREA meetings are held is quite unique and in itself merits explanation. Each meeting occurs on a different group member's farm in rotation. Members decide together on the admittance of new members. After opening the meeting and taking care of housekeeping, the group initially discusses "what's new" in Agriculture. After this general discussion, the hosting farmer has the opportunity to raise a particular problem he or she has in relation to their farm. Issues can be quite complex requiring a reasonably high level of financial and agricultural skill. The issue may be practical, however the group examination extends to all areas of the farm. The host farmer leaves the room and the group splits into two discussions panels and two different approaches are discussed to examine the issues at hand. The farmer is then presented with the two solution scenarios and accompanying advice and can implement or reject the advice; however, his actions must be defended at the following meeting. The farmers then have an outside practical session to the day and or a presentation by a commercial

representative. Every three years, members from all these groups attend a national conference with speakers from all over the world, discussing the future growth of their industry. These discussions cover everything from ethics to production. These AACREA groups provide a unique opportunity for Argentine producers to improve their production through the constructive advice of their peers in a group learning environment.

The third primary difference in perceptions of farming is related to inheritance laws. There are very few family partnerships in Argentina. There are a lot of family corporations. Argentine law dictates that only one tenth of any persons estate can be bequeathed at will – the rest must be divided equally between siblings. Therefore most Argentine farms remain as large viable leased enterprises and are run by a business manager in a company where dividends are paid to members⁶. Siblings will often offer to buy out or lease to each other, consolidating holdings. The inheritance of farms is not restricted to oldest male children, with wives often bringing as much to the table in a marriage. As I mentioned earlier education levels among farmers – especially tertiary levels are high compared to Australia and often in a field unrelated to Agriculture. On one farm that I visited, the husband of the farmer's daughter managed the land as he had the appropriate qualifications. This particular manager had degrees in Agriculture and finance, but did not come from a farming background. The neighbouring farmers in the district included a trained schoolteacher, an architect and a banker. While this arrangement does not remove totally the issues within a “family” farm, it

definitely takes the focus to a business level and offers a broader range of innovative input.

If we examine Argentina on the Plowman model, it fits perfectly. Because management is removed from the leverage of the most conservative member of the family (the oldest) and that younger more creative siblings have an equal degree of influence that combined with professional management enhances innovative opportunities. This perhaps explains why Argentina is reasonably innovative and has low costs of production since its farming history does not follow the order associated with traditional European style farming systems – historically adopted by Australia.

The unique farming environment in Argentina is a result of political and economic instability, coupled with inheritance laws, which together have evolved a tradition of self-reliance amongst farmers. Plowman's theories would support that the nature of the inheritance laws reinforce this innovative, non-traditional family farming environment, leaving it open to more creative and independent siblings. This independent attitude has evolved to form the national AACREA organisation and self-reliant approach to research, development and extension by farmers, for farmers.

3. The United States of America

In the United States, political and economic causes have combined to affect agricultural production to a point where economies of scale have disguised

⁶ Hughes, David, 2001. AACREA Statistics

gains in productivity. Heavy levels of subsidization by the Government have prevented widespread reform in American agricultural Industries. Several factors have contributed to the emergence of this problem.

Firstly, cheap food policy is entrenched in American political leadership and has disguised food production costs to the general populous. The American electoral system is also quite influential in providing a positive relationship between farmers and government. The Senate is comprised of two senators from each state regardless of the population, so the smaller Agricultural states in the mid-west have a proportionally higher contribution to government.

The result of the Senate arrangements is a strong positive perception of farmers by the American public. This strong public perception implies that the unlinking of farming to subsidies would be an election losing issue for any government. Cheap food policy is extended to protecting American farmers from international markets through a tariff and quota restriction mechanism as well as on-farm production subsidies to farmers. I was quite amazed that nett rate of returns calculated on a business by business basis included Government subsidies in final percentages. -

Secondly, America's strong international trade position has had a significant positive effect for American farmers. Only one quarter of America's net trade value is actually produced within American borders. Seventy-five percent of America's economic wealth is produced offshore by American owned multinational companies. Multinational company investment extends its influence to small row crop and beef farmers through extension of new

technologies. Smaller producers increasingly are becoming contractors for these larger companies⁷; economically compelled to adopt technologies pushed by large companies in order to meet market specs and American grid grading systems for beef.

While other opportunities such as organic beef and vegetables have been gradually emerging; until the American government reverses its policy of bulk commodity production by removing its support of multinational companies, economies of scale will continue to dominate agricultural markets. Smaller specialty producers will be squeezed out of the market – making organic food products a limited market for wealthy consumers.

Of the farmers I interviewed, Plowman's descriptions of attributes associated with siblings appeared to be accurate. Innovative individuals came from non-traditional farming backgrounds, or emigrated within primary industries, bringing new ideas with them; while older, more established farming families continued traditional practices. For example, one farmer I interviewed in Missouri came from a different state and applied farming principles from his previous area to produce a new perspective on traditional issues on his new farm. This farmer and his wife also diversified their assets off-farm. Another farmer interviewed in Missouri came from a non-traditional farming background and effectively traded in cattle and crops on a purely cost analysis basis – quite a different approach to other more “traditional” farmers in the district. Both the farmers I have just mentioned also used new computer and satellite herd recording and crop moisture tracking technologies

⁷ Missouri Cattleman's Association president 2001 speech

on farm long before others in the district. Farm extension services in the district were supplied through the University and college system and were primarily a one-on-one arrangement – similar to Scotland. Regardless of the level of innovation or any emergence of new farming groups within the United States, farming subsidies and cheap food policies remove any economic incentive for more efficient farmers.

In almost total opposition to trade policies, American academic research and development out side of the laboratory concentrates on building and investing in rural communities and rural leaders. The Center for Rural and Applied Innovation, as well as the University of Wisconsin has entire departments dedicated to promoting and measuring the economic benefit of investment in social infrastructure. It is believed that positive change within agricultural communities needs to be created from within. Investment in training individuals within a community and communities within a district will provide leadership and help strengthen the social fabric of the townships involved. Strength within the community will help it to survive, grow and prosper in the future. This approach has been successful and is a positive way to deal with a decline in or shift in industries – not just agricultural. For example, the ability of small rural communities to take control of the future – attracting new business, providing services (e.g. health professionals), and controlling town planning, provides a positive approach to life and family. Investment in people is the most positive way to approach the issues of rural communities of the future. These issues include urban encroachment, decline in infrastructure in services and decline in commodity prices.

Multinational corporations in the United States dominate government and the agricultural marketplace. American cheap food policies supported through tariffs, and farming subsidies have disguised any economic drivers for more efficient farming in the US. Instead, investment in small rural communities to enable them to become independent – not necessarily as farming communities -appears to be the future direction of the agricultural landscape.

RECOMMENDATIONS

To remain competitive in a future market, Australian primary industries should deregulate or de-link Government extension from research and development policy. A user pays model; similar to the Scottish system would accommodate the differing learning styles of producers. By examining the psychology of the client, extension product can be more effective and cost productive. Clients empowered to ask the right questions quickly weed the ineffective extension consultants. Australia is not about to change its inheritance laws; therefore changing the format of learning structures to meet farmers needs is the viable alternative.

Individual learning treatments need to be augmented by the “American communities” approach to rural development to promote a positive attitude by farmers toward their own industry, promoting cohesion and retaining more young people on farm. Another recommendation for promoting innovation may be substituting innovation for immigration with the same positive result by

encouraging non-traditional sectors and individuals into rural communities. For example, the new railway line from Alice Springs to Darwin may produce this effect by bringing alternative traditional urban based industries into the bush. Another example maybe that the new head of CSIRO – as a South African, he may have a dramatic impact on the direction and application of Australian Research and Development through a fresh perspective.

Provided that Australia keeps its political policy of open unilateral trade, it is providing the right economic stimulus for primary production.

Conclusions for Information Dissemination

In my role on the State Planning group I fully intend to argue the case for privatization of extension services within the Government as well as making sure that extension services currently provided by the Government and by private firms are in the most appropriate format for producers. This identification of appropriate learning styles needs to be identified through survey of the producers by Government and adopted by consultants. The weaning of primary producers from a subsidised learning system also needs to happen and I will lobby this in my role on the Farmbis State Planning group as well as in my positions on the Central Queensland Regional Beef Research Committee and AGFORCE Cattle Board.

Through my work with the Northern Beef Program and its management of the EDGE learning products, I will be supporting and extending the use of

and audition type process of course presenters by a combination of producers and scientists to guarantee the best presenters for the audience.

APPENDIX

Information Dissemination

- *Key speaker Braford Society AGM (December 2001)
- *Northern Beef Program address
- *Central Queensland Regional Beef Research Committee
- *Full report on eAgriculture .
- *Central Queensland BEEFPLAN group address
- Qld Country Life article
- ABC Rural report interview
- Rockhampton Morning Bulletin
- *Central Queensland AGFORCE meeting.
- *Scottish Agricultural College newsletter.
- *Farmbis State Planning Group
- *AGFORCE Cattle Council Meeting
- *ABARE Outlook 2002 Conference - speaker

Interviews

United Kingdom – Black Isle/Inverness

Jim Seton Scottish Agricultural College
 Veterinary Lady Scottish Agricultural College
 Environmental Lady Scottish Agricultural College
 Derek Cooksley Scottish Agricultural College
 Farmer 1 - James and Leena Forbes

Farmer 2 - Alec Davidson
 Farmer 3 – John Gill
 Kevin Sinclair – geneticist Scottish Agricultural College
 Jim Calder – Huntley Scottish Agricultural College
 John Nicol Scottish Agricultural College
 Quality Meat Scotland - Raymond Wight
 Farmer 4 Elizabeth Don
 Farmer 5 Shirley Harrison
 Farmer 6 George, Andrew and Pat Booth
 Farmer 7 John Gordon

United Kingdom - Edinburgh/Borders

Professor Atkinson Scottish Agricultural College
 Agricultural Economist Scottish Agricultural College
 Ian Riddell Scottish Agricultural College
 Basil Lowman Scottish Agricultural College
 Other Scientist Scottish Agricultural College
 Farmer 8 - Wilbert, Liz and Scott Girvan
 Quality Meat Scotland – Kim Heywood.
 Pork Lady Quality Meat Scotland
 Marketing other lady Quality Meat Scotland

Holland - Amsterdam

Rob De Rooij
 Marie Louise Beerling
 Farmer 9 Hans Beerling

Paraguay

Federico Campos, CREA Member /Beef Producer
 Juan Pablo Brusquetti Beef Producer
 Enrique Pfannl Cattle Agent
 Fernando Prieto Agricultural Engineer/property manager
 Rafael Heisecke Accountant
 Joaquim Zavala Cattle producer
 Carlos Cabral Cattle producer
 Dr Carlos Jariton Sale mart manager

Argentina

David Hughes
 AACREA

Seed stock agents - Monsanto

Enrique Capelle

Henderson Dairaux

Julio Lieutier

Current president

Executive members

Farm advisors

USA - Missouri

University of Colombia

Jim Reilly

Brian Thompson

Gordon Laboube

Kevin Moore

Mike Plain

Vern Pearce

Robin Shepherd

2 x Agricultural economists

Presentation at Missouri – University of Colombia

Missouri cattleman's union dinner

Grand River Technical College

Wes & Carolyn Peterson

David Epperson

Mike Epperson

Interview with corn harvesting man

Steve Hopper

David Beck

USA - Lincoln Nebraska

Interview with Sam Cordes

Douglas Gibbs

Dr John Allen

Dr Mike Duffy

DeLyn Hay

Mr Ken Wurdeman

Farm visit to organic farm

Visit with rural communities' center

Interview with Milan Wall

USA - Madison Wisconsin

Al Anderson

Building rural communities meeting

Trip to rural community

Examination of township
Looking at rural communities leadership program
Bill Pinkowicz