

Better Beef and Reef project

Stakeholder workshop report



Rockhampton: 20 - 21 August 2014.

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Reef 2050 Design and Delivery

The Federal Government Department of Environment



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Main points

The condition of grazing lands, the reef, cattle and beef businesses are all closely interrelated and need to be improved.

Improving the health of the reef will require improvement in the condition of land and the performance of cattle herds and beef businesses.

Poor property-level management practices are partly responsible for the poor performance of beef businesses and the poor condition of land and the reef, and these can be improved.

Beef grazing industry best management practices are well documented, are known to improve performance, and have been promoted to beef producers for several decades.

Yet, industry adoption of these practices has been disappointingly low and slow.

Business case arguments for the adoption of best practices are effective for the 25 percent of top-performing beef producers, who strive to continually improve the performance of their businesses, but they are a small proportion of the industry, and this is preaching to the converted.

Slow or non-adopters of best practices, perhaps the majority of the beef industry, are not strongly motivated to improve their productivity and profitability, and are instead motivated by other personal values. They also have limited capacity to improve their performance. Business case arguments for the adoption of best practices do not resonate with them.

Many beef producers may not want to be highly geared business managers, as this may be inconsistent with the beef industry life-style they enjoy. While they may have poor practices and business outcomes, they are not actively seeking help to improve these.

In reef catchments, beef producers who contribute disproportionately high sediment loads to the reef lagoon can be targeted by Research, Development and Extension (RD&E) programs using a combination of sediment monitoring and modelling and remote sensing of ground cover. The challenge will then be how to successfully work with these beef producers to improve their practices and performance.

Connecting with them through their personal values and other drivers of their behaviour could be the beginning of a pathway of personal development and capacity building that culminates in better practices and performance, and better quality reef water.

Personal values and other drivers of the behaviour of beef producers are not widely known or understood. It was suggested that the insights from more social research and use of commercial marketing principles were needed to effectively engage with these producers.

Building networks and encouraging beef producers to operate within these, the coordinated delivery of services to them, and involvement in long-term group work are likely to be effective mechanisms for improving the practices and performance of beef producers.



Short summary

The all too common poor condition of grazing lands, the Great Barrier Reef (GBR), cattle and beef businesses are closely interrelated. In this respect, improving the health of the reef is likely to require improvement of grazing land condition and the profitability of beef businesses.


While external factors beyond the control of beef producers contribute in a large way to the poor health of land, cattle the reef and beef businesses, poor property-level management practices are also responsible for poor business performance. Beef grazing industry best management practices are well documented and are known to improve land condition, cattle productivity, business profit and the succession of family businesses. Best practices have been promoted on this basis to beef producers for several decades, but yet adoption by industry has been disappointingly low. Why haven't more beef producers taken them up?

Most participants at the workshop held in Rockhampton agreed that previous RD&E programs have not sufficiently improved the practices and performance of beef enterprises. It was widely accepted that many beef producers are not solely motivated by profit, and instead their behaviour and decisions are influenced by other values. However, while a number of different approaches were suggested at the workshop, a greater understanding of beef producers is needed before effective strategies for improving practices and performance can be developed. This work still needs to be done, and while the Rockhampton workshop was important, it was just a beginning.

Workshop participants also concluded that some RD&E programs that promote best practices focused on information rather than people, and mistakenly believe that business case arguments alone will motivate beef producers to change their practices. As with any community, beef producers vary greatly in their motivations, values, performance, needs and capabilities. Many of the beef producers who currently access RD&E services are the early adopters of new practices, and they are hungry for information and advice that will help them improve their performance. They are confident people who operate within networks of successful beef producers and other professional people, where they obtain inspiration and the latest information and advice. At some stage in their careers they were motivated to improve the performance of their enterprises, and they continually seek new ways of doing this. Early adopters are determined to be successful and have the confidence and drive to continuously improve the performance of their businesses. They recognise the value of information arising from RD&E programs and actively seek it out.

In contrast to them, slow or non-adopters of best practices, perhaps the majority of the beef industry, are not strongly motivated to improve performance. Consequently, they are less hungry for information and advice on how to improve productivity and profitability, and are instead motivated by other personal values. In addition to a lack of motivation to change their practices, these beef producers may have limited capacity to improve their performance. They may have low awareness of the poor condition of their business and environment, lack strategic skills, and operate within very limited local networks which reinforce these characteristics. If livestock and business best practices are a low priority for these beef producers, then telling them their performance is poor and expecting that this will prompt a change in their practices is unlikely to be effective.

Therefore, the focus should be more on the people, on gaining a better understanding of the slow or non-adopters of best management practices, and using this to develop effective RD&E programs. Like all communities, many beef producers do not want to be highly geared business managers, as this may not be consistent with the beef



industry life-style they enjoy. However, there is strong evidence that the performance of many beef enterprises is poor and could be improved.

Changing people's practices and performance is extremely difficult, especially when many beef producers who use poor practices and outcomes are not actively seeking to improve these. However, Reef RD&E programs have the advantage of being able to target the beef producers that may fit this description. Monitoring and modelling of sediment yields has concluded that a small number of sub-catchments, such as the Bowen-Bogie and East Burdekin, contribute disproportionately high amounts of sediment to the reef lagoon. This combined with remote sensing imagery of ground cover can be used to target the properties where changed practices could deliver improvements in reef water quality.

It will be challenging to engage with these people and improve their practices, but perhaps connecting with them through their personal values and other drivers of their behaviour could be the beginning of a pathway of personal development that culminates in better practices and performance. In this respect, workshop participants recommended the following change in approach:

- identify the values of the beef producers who are not actively seeking information or help and then match extension messages to these
- provide opportunities for personal development as a pathway for the adoption of industry best practices
- place the adoption of beef industry best practices within the context of building the adaptive capacity of beef producers to cope with change
- focus our messages on where graziers want to be in the future
- make change a positive concept
- target the next generation that will drive change in the industry
- better utilise women's groups and networks
- facilitate long-term or enduring group work
- build effective networks and encourage beef producers to operate within these
- take a whole-of service provider network approach to improving the practices and performance of beef producers.

This workshop placed importance on the alignment of RD&E programs with the personal values and other drivers of the behaviour of beef producers. However, these are not widely understood, and it was suggested that the insights from social research was needed to help shape a better engagement strategy with these producers.



Extended summary

Reef and beef systems health

The health of beef and reef systems is relatively poor. Grazing lands of the Burdekin and Fitzroy catchments are the largest source of anthropogenic sediments entering the reef lagoon, in large part due to 25% of these lands being in C and D condition (Beutel *et al* 2014). Inshore sediment levels are consistently well above the water quality guidelines, and are a cause of the poor and declining condition of several components of the inner reef ecosystem (Scientific Consensus Statement 2013).

Across northern Australia over the past decade, return on investment for beef properties has been less than 2% unsustainable (McLean *et al.* 2014). At the current time, up to 80% of properties are regarded as fiscally unsustainable. While productivity of beef properties has increased over the last 10 years, partly driven by increases in stocking rate and faster turnoff of cattle, cattle prices in real terms have declined by 52%. To counter the decline in income, graziers have reduced their expenditure by 50% on repairs, maintenance and husbandry costs over the same time. Interest payments are averaging \$120,000 annually, and have increased by 309% over the decade, which mirrors increases in farm debt. Profitability has been flat over the past 10 years, largely occurring through significant belt-tightening of operating costs.

While empirical information is available on the health of beef grazing lands, beef businesses and the reef, only limited information is available on the health of beef producers. However, given the high levels of debt, the prevalence of fiscally unsustainable businesses throughout the industry, and widespread drought in the past three years, it is likely that beef producers are experiencing considerable stress.


The health of the land, reef, cattle, beef businesses and people are closely interrelated. In this respect, improving the health of the reef is likely to require improvement of the whole system.

There are many potential causes of the poor economic performance of beef businesses. Some of these are outside the control of beef producers, such as high climate variability and extremes, high operating and capital costs relative to low cattle prices, long production cycles and an unfavourable international trading environment. Poor management practices are also known to be a cause of low profitability, and this is within the control of beef producers.

Beef industry best practices and their adoption

Beef grazing industry best management practices are well known and well documented. One program, Grazing BMP, enables producers to benchmark their individual practices against documented best practices. While Grazing BMP contains 158 best management practices relating to the whole grazing enterprise, some of these are more critical to the success of a beef business than others, and some are more relevant to the Reef Program.

Working with the environment as much as possible is very important to the success of beef businesses. This starts with knowledge of appropriate long-term stocking rates and matching annual stocking rates to variable annual forage supply. Doing this will help ensure that good quantity and quality feed is available for cattle, as it is important to keep condition on both cattle and country. The fertility, growth and survival of cattle



are dependent on good nutrition, and this needs to be supplied predominantly by pasture. Forage budgeting, involving measuring the amount of forage available for consumption at the end of the pasture growing season and adjusting stock numbers accordingly, is vitally important in this respect. The performance of cattle will be very poor if pasture supply is limited during the dry season. For example, end of dry season body condition of breeding cows is a critical management factor that is closely related with pregnancy rates. Running out of feed at the end of the dry season also results in low ground cover, making land vulnerable to erosion when the wet season commences.

Targeted supplementary feeding can be very useful, particularly in nutrient deficient country, and particularly during low-rainfall years, but should always be viewed as a supplement to the natural pasture diet. Protein supplements during the dry season and phosphorous supplements during the wet season can significantly improve cattle growth and fertility.

Knowledge of when the pasture growing season is likely to commence is also very important. This equates to the date in 70% of years when 50mm of rain falls in three days. This is critical for the time of joining breeders and maintaining their body condition. Controlled mating to align periods of high nutritional demand for periods of best feed availability is really important. It means that calving occurs during the early part of the wet season when forage quantity and quality are high. It also creates even lines of cattle to make marketing and management easier, enables identification of non-productive cows, assists with pasture management, and reduces the need for supplementary feeding. Weaning calves early can also be very useful for maintaining breeder condition, particularly in years of low rainfall.

Possession of an adequate number of paddocks and water points are important aides to management. Paddocks which are fenced to land type and which have ample water points will be grazed more evenly, greatly reducing the occurrence of over-grazed areas with low ground cover. Having numerous paddocks is also necessary for segregating classes of cattle and managing them with regards to their specific needs. Possession of numerous paddocks also makes it easier to rest and regenerate pastures during the wet season.

Having the genetics that suit the environment is also important. Ideally, the genetics of cattle should enable them to survive, breed and grow in the environment with minimal assistance. Brahman cattle genetics are the basis for this, but well managed cross-breeding can help produce a carcass that is more highly valued by markets. Animal husbandry is also critical through regular use of vaccines for well-known diseases.

While the management practices that improve the performance of beef businesses are well known, they have not all been readily adopted by beef producers in reef catchments. This is partly because many beef producers believe their performance is a lot better than it really is, and self-assessment of best practice adoption do not match reality. Adoption rates of some fundamental management practices, such as record keeping and analysis, alignment with objective long-term carrying capacities and forage budgeting, are low. In particular, many beef producers do not keep comprehensive and accurate business records and do not see the value in the timely recording and analysis of information.

Workshop participants noted that the beef producers who are successfully implementing industry best practices are not our target audience. They treat their grazing enterprise as a business and are successfully implementing in a holistic way industry best management practices. These beef producers are resilient to challenges and changes, and survive no matter what comes their way. The beef producers who

best cope with change are those that recognise challenges or risks early and who are able to quickly develop strategies for coping with these. In this respect, the success or profitability of beef businesses depends greatly on the people who run them and their management capabilities. This was particularly evident at the Townsville Better Beef and Reef producer workshop where the personal attributes of beef producers appeared to be the factor that most commonly drove their adoption of industry best practices.

The workshop discussions emphasised the importance of keeping and using records, as this is fundamental to good business management. Keeping appropriate records allows beef producers to benchmark their performance against industry best performance. This often drives practice change in beef producers, and enables them to continually improve their performance. However, beef producers need to know what type of records to keep, how to simply and easily record these, and how to analyse them. Given the very low profit margins in the industry today, record keeping and good business management are more important than they have been in the past. It was noted that the best performing beef producers use internal and external data in a timely way to support their decisions, and manage their businesses as would the chief executive officer (CEO) of a large corporation.


However, beef businesses are often family based businesses and therefore need to operate within the family unit context. Business processes and analytics might need to be CEO like, but there is an important dimension of family orientation that has significant bearing on the 'business' culture and dynamics within the operation (Bruce Howie pers. comm.). Even so, willingness to engage external expertise is vital, because, as a rule many skill sets are not normally directly available within the internal structure of a family business. In a corporation the diversity of skills needed would largely be catered for in the internal structure.

Understanding beef producers and beef properties

A possible reason for the poor success of programs that promote adoption of industry best practices is their focus on information and practices rather than people. As with any community, beef producers vary greatly in their interests, needs, behaviours and capabilities. Similarly, beef businesses are highly variable in their characteristics. A better understanding of beef producers and beef properties would enable extension programs to become more targeted and more cost-effective.

Many RD&E service providers mistakenly believe that the provision of information (transfer of technology) alone will motivate beef producers to change their practices. However, farm decision making is more complex than this, and is influenced by many factors, including economic, biophysical, personal and social values which change over time. Also, the passion for and love of grazing industry often has an over-riding influence on the decisions made by beef producers. It is important to build relationships with beef producers and communities to understand the drivers of their behaviour, and then align the extension of industry best practices with these.

However, this love of farming and the dependency associated with it can make producers vulnerable to change. In fact, up to 85% of northern beef producers are not resilient to change, due to a lack of strategic skills, poor networks, limited environmental awareness, little use of technology and an absence of buffers. This will also constrain the capacity of beef producers to change their practices. Adaptive capacity is a set of skills that can be taught to producers, and could be a component of personal development courses. Successful beef producers have identified personal development opportunities and maintenance of diverse quality networks as having an important influence on their capacity to improve their practices and performance.



The effectiveness of extension activities may also be improved by targeting particular types of properties. For example, the Victorian Department of Environment and Primary Industries targeted properties that have over 100 head of cattle. While these properties were only 30% of the total number of beef farms in the state, they produced 80% of the beef. In general terms, as herd size increased, so did the proportion of beef producers with aspirations and capacity to increase their productivity and/or expand the scale of their operations.

Targeting particular locations of beef properties can also improve the effectiveness of extension efforts. Sediment modelling has shown that two catchments, the Burdekin and Fitzroy, are responsible for the largest sediment loads delivered to the reef lagoon. Within these two catchments, extension resources can be further targeted to smaller areas, such as the Bowen Bogie, East Burdekin and Dawson sub-catchments, which shed disproportionately high amounts of sediments. Satellite imagery of ground cover could also be used target districts and properties which are the major sources of sediments flowing into the reef lagoon.

Whole group discussion at the workshop concluded that many beef producers are not solely motivated by profit, and instead their behaviour and decisions are influenced by other personal values, particularly life-style choices. Personal values, family influences and social drivers have important influences on decisions to change practices. However, these and their implications are not widely known, and it was suggested that more social research would help better target extension efforts. This social research needs to be guided by the objectives of extension programs, as the latter determines the demographic, social, economic, geographic or other factors that will be used to segment producers.

Current efforts to improve practices of beef producers

The organisations represented at the workshop currently utilise a wide range of mechanisms for improving the practices of beef producers. Those that work well are:

- newsletters
- working with groups on issues that are important to them
- websites such as Future Beef
- Grazing BMP
- group days and follow up to group days
- one- on -one property visits
- use of partnerships across service providers to deliver a range of skills to address identified grazier needs
- on-ground testing and on-farm work with graziers e.g. producer demonstration sites
- phone seminars and webinars
- training activities with groups and follow up
- benchmarking with groups
- attending different forums throughout regions to build rapport with producers
- long-term on-ground funding programs
- use of grazier mentors
- incentive programs
- projects that engage farmers throughout all stages, from concept to final report
- grants or subsidies for training courses
- use of women's networks
- phone apps for providing data and staying connected.



Future efforts to improve practices of beef producers

Insanity is doing the same thing over and over again and expecting different results.

We need to trial the use of different RD&E approaches as previous efforts have resulted in only modest adoption rates of industry best practices. While current extension practices above often interact with considerable numbers of beef producers, there is concern that these have changed the practices of a relatively small number of producers. Furthermore, it is possible that the people who most need to improve their practices are not being engaged by these extension activities.

A great deal of extension research information is available, including the role of personal and social factors, but much of this has not been utilised in the design of extension programs. We need to acknowledge that changing people's practices and behaviour is very difficult, and requires innovative modern approaches. In this respect, consideration could be given to agricultural innovation systems approaches, use of enduring groups and use of social media.

It was noted that money is often not the primary driver of primary producer decision making. Family, lifestyle and connection with the land may be more important. We need to know the main motivations as to why people run beef properties, as promotion of best practices based on productivity and economic gains has not worked well.

Commercial advertising is often successful because it has emotional hooks that align with people's values, triggering an emotional response and the desire for more information about the product or service. RD&E agency staff are reluctant to appeal to a producer's emotional values, and instead strive to be an "honest broker" of information. Commercial advertising recognises that few people seek products or services without being prompted, and that the best way to do this is to align the product with the emotional values of the individual. As such, advertising of a product may portray values such as freedom, status and happiness, and do this in a way that engenders confidence and trust in the providers.

In agriculture, the early adopters of new practices and technology are hungry for information, will test things, will embrace change and will shape the future. They do not need to be prompted. The later adopters are not as hungry for information on best practices and modern technologies, and instead are motivated by other things. They tend to be more esteem driven, avoid business and social risks, want to belong and rely on trusted channels of evidence.

There is a need to identify what will stimulate the interest of people who currently do not seek information and align the messages with their value system. We assume that by giving producers information they will change their practices, but this does not work with most producers. We need to draw them to the message, excite them, and do not disappoint by catering for the demand we create.

It was mentioned a number of times that producers often think their practices and performance are better than they actually are. This can be partly due to their modest goals and expectations. We need to know what motivates beef producers and use this to make initial contact with them. With producers "in the room" we can then work with them to raise their expectations and help them achieve these.

Workshop participants recommended that extension activities should target all age groups of beef producers, as most properties consist of and operate as a family unit,

often with extended family. In particular, several mentions were made of targeting women and making use of women's networks.

What do we need to do differently?

Further whole-group discussion was then prompted by the question "What do we need to do differently? The following responses were recorded during this session:

- pitch things in the best light to maximise interest i.e. high quality information with a good pitch, and take time in developing the pitch
- work across agencies at the local level
- identify the values of the beef producers who are not actively seeking information or help and then match extension messages to these
- keep the important message simple
- help graziers recognise their performance can be improved and work with them to do this
- focus more on women in the business
- coat-tail onto other events to help build relationships and rapport with producers
- use social science research to inform the development of extension programs
- change the time frame for engagement – lengthen it
- need to develop and build networks
- use commercial advertising companies in the design of communication and extension programs
- use long-term or enduring group work
- use Grazing BMP to identify needs and take an adult learning approach from there
- make change a positive concept by providing support during periods of stress such as drought. Improve grazier's drought management capabilities
- use mass-media such as television, but then use local media to target a particular area
- use a range of messages or values in a single presentation/promotion, even if people do not see all of them.

On who and where do we target our resources?


The whole-group discussion then changed its focus to "on who and where do we target our resources?" The responses recorded during this discussion were:

- target the locations which will give the greatest improvement in water quality. Use knowledge of the major sources of sediments combined with remote sensing imagery to identify properties that have low ground cover.
- female partners
- existing groups and networks
- the 40% of beef producers who do not have strategic management skills and need help to develop these
- graziers who are most likely to be receptive.

What would most improve the effectiveness of extension activities?

The final session of the workshop wrapped up with each person identifying the one thing they thought would most improve the effectiveness of extension activities. The responses that were different to those recorded above were:

- remember that producers are our clients and that we need to target their needs not ours. Focus less on the information and practices, and more on people.

- 
- provide opportunities for personal development as a pathway for the adoption industry best practices
 - focus our messages on where graziers want to be in the future
 - make change a positive concept
 - focus on the next generation that will drive change in the industry
 - use long-term or enduring group work
 - take a whole-of service provider network approach to improving the practices and performance of beef producers. Need better coordination of Queensland service providers
 - build networks and encourage beef producers to operate within these
 - use commercial advertising companies in the design of communication and extension programs
 - use mass-media such as television, but then local media to target a particular area
 - use a range of messages or values in a single presentation/promotion, even if people do not see all of them
 - make extension messages timely, e.g. promote forage budgeting at the end of the wet season, or align messages with the phases of drought.



Introduction

Recent evidence shows that coral cover in the Great Barrier Reef has declined from around 50% in the 1960s to 14% in 2013 (Scientific Consensus Statement 2013). The causes of this decline are various, including cyclones, sediment and nutrients, coral bleaching and coral disease. The decline of marine water quality associated with terrestrial runoff from the adjacent catchments is a major cause of the current poor state of many of the key marine ecosystems of the Great Barrier Reef. Compared to pre-European conditions, modelled mean annual river loads to the Great Barrier Reef lagoon have increased 3.2 to 5.5-fold for total suspended solids, 2.0 to 5.7-fold for total nitrogen and 2.5 to 8.9-fold for total phosphorus (Scientific Consensus Statement 2013). The broad-acre cattle sector is one of the main land uses contributing pollutant loads to the reef lagoon.

Broad-acre cattle grazing is the dominant land use in both the Burdekin and Fitzroy regions. In the Fitzroy, 3666 graziers manage 81% of the region, while in the Burdekin, 983 graziers manage 96% of the region (Queensland Government 2011). Approximately 20% (59,000 km²) of the Burdekin and Fitzroy regions are in C land condition, and another 5% (15,000 km²) is in D land condition (Beutel *et al.* 2014). This is a substantial area of land exporting sediment and nutrients into the reef.

This poor land condition is also responsible for a decline in the productivity of the beef industry, as cattle numbers on C and D condition land are more than 50% lower than they would be if land was in A condition. Assuming that the average stocking rate in these catchments is approximately 10 head/km² (Gowan *et al.* 2012), this loss in carrying capacity equates to around 370,000 head.

The 2013 Northern Beef Report (McLean *et al.* 2014), after assessing the economic performance of the northern beef pastoral industry between 2001 and 2012, found that the majority of northern beef businesses were not economically sustainable at present. Excluding land value changes, return on assets has averaged less than 1% across the industry over the last 12 years. Whilst profits before financing are largely unchanged, after financing, performance is deteriorating due to increased debt with no increase in profit. Income has decreased over the period analysed, mostly as a function of declining beef prices rather than a decline in productivity (kg beef/AE). Costs have reduced as income has reduced, through belt tightening and improved labour efficiency, resulting in little change in profits which were already low or in the negative for some businesses.

There are many potential causes of the poor economic performance of beef businesses. Some of these are outside the control of beef producers, such as high climate variability and international trade practices. Poor management practices are also a cause of low profitability, and this can be controlled by beef producers. A recent survey of beef producers in the reef catchments (McCosker and Barbi 2014) found that the current grazing land management practices of almost 60% of them was poor to very poor.

The premise of this Better Beef and Reef project is that better cattle herd performance due to better management and better land condition are likely to improve both the profitability of grazing businesses and the quality of water entering the reef lagoon.



Workshop Agenda

Increasing adoption of beef industry best practices in reef catchments

The objectives of this workshop are to:

1. identify the beef producers and high priority areas we will target in our attempts to improve practices and performance
2. describe the critical best management practices for beef producers to adopt
3. determine how more beef producers can be encouraged to adopt these practices.

Day 1 Wednesday, 20 August 2014

- 12 noon: Arrive for lunch (Duthie Room, 2nd Floor, Leichhardt Hotel)
- 12:45 pm: Workshop starts
- 12:45 pm Introduction to workshop: Lester Pahl - Department of Agriculture and Fisheries (DAF). Hand over to Facilitator – Peter Long - Fitzroy Basin Association (FBA)
- 12:55 pm 10 second introductions by each participant.
Name, organisation, and connection to beef producers.
- 1:05 pm Priorities of the Australian Government Reef Program, the role of the Better Beef and Reef project, and how workshop outcomes will be used.
Kevin Gale – Australian Department of Environment

Session 1: Reef and beef systems health

- 1:15 pm Grazing land and reef health
Kevin McCosker
- 1:30 pm Beef business health
Tim Moravek
- 1:40 pm People health
Peter Walsh
- 1:50 pm Whole group discussion
Were there any surprises in the messages you have just heard?



Session 2: Understanding the people we want to influence

- 2:10 pm Fiona McCartney
Understanding the factors influencing farm decision making and the adoption of best practices
- 2:20 pm Nadine Marshall
Vulnerability to Change on the Rangelands
- 2:30 pm Darren Hickey
BetterBeef Network: How industry and social research data is used to achieve practice change in the Victorian beef industry.
- 2:40 pm Whole Group discussion
Are there any implications of this for changing practices of beef producers in reef catchments? If so, what?
- 3:00 pm Afternoon tea

Michele Barson: geographical targeting
- 3:30 pm Whole group discussion
Do we need to target particular beef producers in reef catchments? If so, who and where?
What else do we need to know about targeting beef producers?

Session 3: Industry best practices and adoption by beef producers in reef catchments

- 4:00 pm What management practices do we expect beef producers to adopt?
Mick Sullivan
- 4:20 pm Current adoption rates of critical management practices
Kev McCosker/Dave Smith/Tim Moravek
- 4:30 pm Whole group discussion
Are there other critical best practices for beef producers?
Why do we have the current rates of adoption of best practices?
What do the 'top' grazing businesses do differently?
- 5:30 pm Close of Day 1
Lester Pahl
- 6:30 pm Informal gathering and drinks
- 7:00 pm Dinner



Day 2 Thursday, 21 August 2014

8:00 am Summary of Day 1 and introduction to Day 2

Session 4: Current efforts to improve practices and performance of beef producers in reef catchments

8:15 am What are we currently doing to help beef producers improve their practices?
Small group work and then report back
Who is working in this space and what are they doing? What has worked well for us/them?

9:30 am Morning tea

Session 5: Future efforts to improve practices and performance of beef producers in reef catchments

10.00 am Possible engagement processes
Bruce Howie and John James

10:15 am What approaches are most likely to improve the practices of beef producers?
What are the most effective existing or new strategies for improving the practices of beef producers?

Which ones will be most effective for the target beef producers and/or areas?

5 minute break for coffee/tea

11:00 am Continued

What do we need to do differently?
Where do we need to focus?
Who do we need to target?
What is realistically possible to achieve by way of the adoption of best practice in reef catchments?
Who do we need to better collaborate with?

12:00 noon Wrap up and where to from here?
Is there anything important we have missed?
What next for the Australian Government Reef Program?
What next for this Better Beef and Reef project?

12:30 pm Lunch



Day 1 - Priorities of the Australian Government Reef Program and Reef Trust

Kevin Gale

Australian Government Department of the Environment.

The Australian Government is funding the Better Beef and Reef project for the purpose of informing future investments related to the beef grazing industry, and to do this more effectively and efficiently. Of particular interest are improvements in the productivity and resilience of beef properties and in the resulting improvement in the quality of water entering the reef lagoon.

Previous investment of \$49 million in the grazing industry, primarily in the Burdekin and Fitzroy catchments, has resulted in 1.5 million ha of grazing land under improved management, 200,000 ha of riparian area protected and approximately 380,000 less tonnes of sediment and associated particulate nutrients entering the reef lagoon each year.

Future public investment is likely to decline in the short to medium term, making it even more important to better target funding initiatives, and to achieve a good balance between on-ground work, extension, training and farm planning.

A total of \$27.5 million is available for all Reef Programme projects in the Burdekin and Fitzroy catchments from 2013 to 2016, including grazing activities.

The Reef Trust, with approximately \$40 million initial funding from the Australian Government, will continue funding activities that will improve reef water quality, and may be supplemented by offsets paid for by the companies that are undertaking development activities with unavoidable residual impacts on the reef.

Through Reef Trust, \$3 million over four years (from 2014) is being made available for investment in a new approach to improving grazing management practices in the Fitzroy and Burdekin regions. It will be important to use the most appropriate mechanisms to target graziers in the highest priority locations in order to achieve the best outcomes from future investments.

Session 1: Reef and beef systems health

Main points

The three presentations in this session indicated that the health of reef and beef systems is relatively poor. Approximately 25% of the beef grazing land area in the Burdekin and Fitzroy catchments are in C and D land condition. Grazing lands contribute the majority of sediments to the reef lagoon. Sediment loss from grazing land is contributing to the marked deterioration in reef health. Sediments mainly originate from stream banks and gullies. Some regions, such as Bowen-Bogie and East Burdekin contribute much more sediment than other sub-catchments.

Inshore sediment levels are consistently well above the water quality guidelines. Not surprisingly, several components of the reef ecosystem in the Burdekin and Fitzroy regions are in poor to very poor condition, and there is a trend of decline over time.

Return on investment for beef properties is less than 2%, and up to 80% of properties are fiscally unsustainable. While productivity of beef properties has increased over the

last 10 years, including increases in stocking rate, cattle prices in real terms have declined by 52%. This has occurred even though repairs, maintenance and husbandry costs have been reduced by 50% over the same time. The cost-price squeeze is severe.

Interest payments are averaging \$120,000 annually, and have increased by 309% over the decade, which mirrors increases in farm debt. Profitability has been flat over the past 10 years.

Levels of debt and equity cause stress and influence the mental health of beef producers, and this is particularly the case during drought. Mental health and other support services are often not available in small towns or districts in Queensland, and beef producers may be reluctant to ask for help when they need it. Rapport needs to be built up over time with beef producers before they will freely share their problems with other people.

While there is good information available on the health of beef grazing lands, beef businesses and the reef, only poor quality anecdotal information is available on the health of beef producers. However, given the high levels of debt, the prevalence of fiscally unsustainable businesses throughout the industry, and widespread drought, it is likely that beef producers are experiencing high levels of stress.

Record of workshop responses

The purpose of this first session of the workshop was to familiarise participants with the current condition of land, the Great Barrier Reef, the beef industry and people within that industry. This session commenced with three presentations on reef and beef systems health by:

1. Kev McCosker: grazing land and reef health
2. Tim Moravek: Beef Industry Overview: a current economic situation analysis
3. Peter Walsh: Activities and services of the Department of Human Services.

Some main points from each presentation are noted below.

Kev McCosker: grazing land and reef health


Reef Plan is investing \$250 million over 2013-2018 to improve water quality, and one of its targets is that 90% of the land area in reef catchments will be managed under industry best practices. Currently, the standard of management systems in most areas is B, C and D. Very few producers have A level (low risk, best management practice) management systems.

25% of the land area in the Burdekin and Fitzroy catchments is estimated to be in C or D land condition.

Inshore suspended sediment levels are consistently well above the water quality guidelines.

The health of components of the reef in Burdekin and Fitzroy regions is mostly poor to very poor, and there is a trend of decline over time.

Grazing lands contribute the majority of sediments to the reef lagoon. Sediment loss from grazing land is contributing to the marked deterioration in reef health. Sediments mainly originate from stream banks and gullies.



Some regions, such as Bowen-Bogie and East Burdekin contribute much more sediment than other regions.

Remediation of rills, gullies and stream banks are not a priority of beef producers, as the private benefit is low.

Tim Moravek: Beef Industry Overview: a current economic situation analysis
Presentation on Burdekin region only. 650 commercial grazing properties and 1.6 million cattle.

While productivity of beef properties has increased over the last 10 years, cattle prices in real terms have declined by 52%.

This has occurred even though repairs, maintenance and husbandry costs have been reduced by 50% over the same time.

Interest payments are averaging \$120,000 annually, and have increased by 309% over the decade, which mirrors increases in farm debt.

Profitability has been flat over the past 10 years.

Return on investment is less than 2%, and up to 80% of properties are fiscally unsustainable.

The average age of beef producers is 60 years which is likely to impact on investment decisions which have payback periods in excess of five years.

Beef producers must possess a unique set of skills to successfully run a beef business, and they do this with minimal additional labour.

A common feature in the beef industry is a lack of good quality records.

This poor economic performance, limited labour, old age structure and lack of records are likely to influence rates of adoption of best practices.

However, the transition to younger beef producers in the near future may provide an opportunity to engage more with beef producers and influence their practices. This could see an increase in demand for extension services.

Peter Walsh: Activities and services of the Department of Human Services.
\$10.7 million is available for Social and community support in drought-affected areas in New South Wales and Queensland which were Drought declared as at 26 February 2014. The social and community support package is to help the community become more self-sustainable.

There are five drought coordinators in Queensland and Northern New South Wales whose role it is to link social services in drought-affected areas. The social and community support package provides for the provision of free professional help including one-to-one counselling, family support services, and referrals to people in need or run and/or attend community events. The service providers want to engage with people in local communities before stress levels rise, especially as mental health and other support services are often not available in small towns or districts. Will attend local events such as field days and talk casually with people in order to link people to services that meet their individual needs.

Service providers need to build trust with people before they will talk about their problems, and this is difficult for new staff. Working with key people in each community helps them locate and link with those people who need help.

They work to build relationships and networks in the community so that when people need help they are aware of support services that are available in the community and more likely to ask for it.


Property size and levels of equity influence people's mental health especially in times of drought.

Whole-group discussion

These presentations were followed by whole-group discussion, prompted by the question "Were there any surprises in the messages you have just heard?"

The responses recorded during this discussion are listed below in the order in which they were raised by workshop participants:

- Prices for beef cattle had fallen 52.5% in real-terms over the past 10 years, and this constitutes a commodity crisis.
- Fiscal viability of northern beef producers is very low.
- Quality of water running into the reef lagoon is very poor.
- Subsoil erosion is the major source of sediments running into the reef lagoon, and this will be difficult to stop in the short-term. However, the source of sediments may vary annually depending on the amount of soil cover.
- What is the degree of rigour for the information just presented? Is this sufficient to make significant investment decisions?
- The reduction in repairs and maintenance costs is high, and wonder how much longer this can continue.
- Can extension of best practices be successful in an industry that is so financially stressed?
- Could good records help beef producers feel more in control?
- Interest costs are 25% of total costs. What will happen when interest rates rise?
- As income is low, there will not be much available for investing into the property. Repair of gully erosion is likely to be a low priority in these circumstances.
- 3000AE as an indicator of economic viability is crude. The minimum viable number of cattle will vary with amount of debt, and with fluctuations in prices and climate.
- The timing of management decisions is vital, and particularly those associated with selling and buying stock.
- Land prices are decoupled with productivity or earning potential of land, although this is now starting to reverse.

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- It is assumed there is a correlation between poor economic performance and poor land condition on properties, but clear evidence of this is lacking.
 - Good seasons saw an expansion in property size and debt, but have been followed by poor seasons and low income, increasing stress levels of beef producers.
 - Forced cattle sales create a future income problem as people rebuild their herds.

Session 2: Understanding the people we want to influence

Main points

The outcomes of extension efforts are strongly influenced by the characteristics of beef producers and beef properties. Beef producers vary greatly in their receptiveness to extension information and messages. Also, the relevance of properties for various extension programs will differ because of differences in their size, condition and location. A better understanding of beef producers and beef properties will enable extension programs to become more targeted and more effective.

RD&E service providers can mistakenly believe that the provision of information alone will motivate beef producers to change their practices. However, farm decision making is more complex than this, and is influenced by many factors, including economic, biophysical, personal and social. But understanding these factors is not enough. For each factor there will be many individual perspectives, and these can change over time. It is important to get to know individuals and communities, making it possible to target and tailor extension to fit particular situations.

The passion for and love of the grazing industry and livestock also has a large influence on the decisions made by beef producers. In this respect, it is important to build relationships with beef producers to understand what motivates them to do the things they love, and then develop strategies to increase adoption of best practices.

However, this love of the grazing industry and livestock and the dependency associated with this can make producers vulnerable to unchosen change. In fact, up to 85% of northern beef producers are not resilient to change. Often this is due to a lack of strategic skills, poor networks, low environmental awareness, limited uptake of technology and absence of buffers. This is also likely to constrain the capacity of beef producers to change their practices, and thus limit their adoption of better production and business practices. Improving the adaptive capacity of producers is a priority, and this will be best achieved by focusing on people and their needs, rather than the information we think they need or the practices we think they should adopt. Adaptive capacity is a set of skills that can be taught to producers who need them. This could be a component of personal development courses that are offered to beef producers. Successful beef producers have identified personal development opportunities as having an important influence on their capacity to improve their practices and performance. However, again, the successful producers were motivated to undertake personal development activities.

The effectiveness of extension activities may also be improved by targeting particular types of properties. For example, in Victoria, the size of beef properties has a big influence on the aspirations and capacity of beef producers and the entire state to increase productivity over time. The Department of Environment and Primary Industries, using Australian Bureau of Agricultural and Resource Economics and

Sciences (ABARES) and Australian Bureau of Statistics (ABS) data bases, targeted properties that have over 100 head of cattle. While these properties were only 30% of the total number of beef farms in the state, they produced 80% of the beef for the state. As herd size increased, so did the proportion of beef producers with aspirations and capacity to increase their productivity and/or expand the size of their operations.

Targeting particular locations of beef properties can also improve the effectiveness of extension efforts. While sediment export from grazing lands is known to adversely affect the reef in Queensland, sediment modelling has shown that two catchments, the Burdekin and Fitzroy, are responsible for the largest sediment loads. Within these two catchments, extension resources can be further targeted to smaller areas, such as the Bowen Bogie, East Burdekin and Dawson sub-catchments, which export disproportionately high amounts of sediments.

Whole group discussion at the workshop concluded that many beef producers are not solely motivated by profit, and instead their behaviour and decisions are influenced by other values, particularly life-style values. Personal values, family relationships and social drivers have important influences on decisions to change practices. However, little is known about these, and more social research is needed to help better target extension efforts. This social research needs to be guided by the objectives of extension programs, as the latter determines the demographic, social, economic, geographic or other factors that will be used to segment producers.

There was considerable interest in the use of sediment modelling and monitoring and satellite imagery of ground cover to target districts and properties which were the major sources of sediments flowing into the reef lagoon. This is both personally and politically sensitive, and a great deal of care and skill would be required for this to be completed with the cooperation of targeted beef producers.

Record of workshop responses

This session assumed that beef producers are diverse in their aspirations, capacities and receptiveness to messages from service providers. These differences are likely to have a strong influence the success of programs that encourage beef producers to adopt industry best practices. Hence, a better understanding of beef producers may enable service providers to customise their messages for particular target groups of beef producers.

The session commenced with four presentations. These were:

1. Fiona McCartney: Understanding the factors influencing farm decision making and the adoption of best practices
2. Nadine Marshall: Why can some producers change better than others?
3. Darren Hickey: BetterBeef Network: How industry and social research data is used to achieve practice change in the Victorian beef industry.
4. Michele Barson: Reef Water Quality Protection Plan 2013. Prioritisation project report.

Some main points from each presentation are recorded below.

Fiona McCartney: Understanding the factors influencing farm decision making and the adoption of best practices

Understanding the motivations for a behaviour allows us to target a response to directly address that behaviour – (e. g. education, extension, market based instruments {MBI}, regulation)

Farm decision making is complex and influenced by many factors. They can be broadly grouped into biophysical, economic, personal and other factors.

Furthermore, it is a combination of these factors (rather than a single motivation or barrier), that influences decision making and ultimately behaviour.

Despite the complexity, in general, farmers love farming.

The decision to implement a best practice is just one example of a range of choices farmers make

Furthermore, this decision:

- (i) might not be deliberate
- (ii) might not be perceived as important

Even when the decision is deliberate and important, the decision to implement a best practice is influenced by additional factors. For example, establishment costs, relative advantage, degree of risk, complexity, compatibility, trialability and observability, and contractor requirement.

But understanding these factors is not enough! For each factor there will be many individual perspectives, and these can change over time.

So, we need to get to know the individuals and communities involved (build and maintain good relationships). This will enable us to tailor extension and be flexible and diverse in our approaches –to 'fit' the situation.

Nadine Marshall: Why can some producers change better than others?

We often focus on the change we want to see happen, and wonder why beef producers do not change. What is wrong with them?

It is much more important to focus on the people and not on change. Resource Consulting Services (RCS) does this well.

Producers are vulnerable. 85% of northern beef producers are vulnerable or not resilient to change.

Resource dependency, especially an attachment to an occupation, can make people vulnerable to change.

Adaptive capacity varies, determined by differences in risk perception, strategic skills, buffers, and interest. People can be typed into 4 categories of vulnerability.

In rural Queensland, the biggest killer of men is suicide, and for women it is domestic violence. There is approximately one death every three days, and rates increase during drought.

Need to focus on socio-economic vulnerability.

Need to help producers become more resilient to surprises and unexpected change. They simply do not have the capacity to adapt to change. Often this is due to a lack of

strategic skills, poor networks, limited environmental awareness, little use of technology and absence of buffers.

Priority is to invest in the adaptive capacity of producers so they can better cope with change.

Darren Hickey: BetterBeef Network: How industry and social research data is used to achieve practice change in the Victorian beef industry

Described the Department of Environment and Primary Industries (DEPI) BetterBeef project and network. The aim is to accelerate adoption of practices and technologies that drive improvements in productivity and profitability.

BetterBeef provides a route to market for outcomes of beef industry R&D, and is the delivery network for MLA's More Beef from Pastures in Victoria. The BetterBeef Network is made up of beef producers, industry groups, researchers, RTOs, private consultants, agribusiness, MLA and DEPI. There is sector engagement, capability design and delivery of a range of products and services tailored to meet the needs of the majority market of producers in Victoria.

Products and services include producer discussion groups, regional conferences, workshops, seminars, phone and web seminars, fortnightly technical newsflash, accredited and non-accredited training and annual newsletters. BetterBeef runs annual workshops are run for both DEPI and private industry service providers that generate greater opportunities for collaboration in service design and delivery as well as R&D updates directly from researchers.

Farmers have different productivity aspirations and capacity to invest in innovations and practice change. DEPI conducted social research and market segmentation in 2010-11 which now informs investment in RD&E and design of services to producers. Used ABS, ABARE and social research data sets. Market Segmentation Research: Better understands the needs of producers – aspirations to improve productivity, capacity to improve productivity, dependency on farm income, lifestyle/income aspirations and where farmers go to get their advice.

While farm scale is not strongly correlated with aspirations of farmers to be more productive, farm scale is strongly related to the capacity of farmers to invest in the farm and increase productivity

Farm scale is strongly related to increasing productivity of the whole industry.

DEPI targets the design and delivery of productivity related products and services to the segment consisting of 35% of Victorian beef farms that manage in excess of 100 head of cattle. This segment has the greatest capacity to increase productivity for the industry, is more receptive to productivity and farm scale expansion messages and is more reliant on farm income for their overall household income.

Could look at using sediment source/issue data and segmentation to focus on the people and tailor to industry needs (instead of just providing graziers with more information).

Michele Barson: Reef Water Quality Protection Plan 2013. Prioritisation project report

Modelled sediment loads showed the Burdekin to be very high priority and the Fitzroy is high priority also.

Where are we going to get the best return on investment in terms of reducing runoff?
Need a better understanding of the areas we are dealing with.

Some regions contribute disproportionately high loads of sediment. East Burdekin produces about 20% of the total sediment load and consists of only 13 properties.

Bowen-Bogie also contributes 20% of total load, and consists of 80 properties.

Use satellite fractional cover to identify properties that have low cover or which do not meet the 70% ground cover target for extended periods of time.

Whole-group discussion

These presentations were followed by whole-group discussion, prompted by the questions:

- Are there any implications of this for changing practices of beef producers in reef catchments, and if so, what?
- Do we need to target particular beef producers in reef catchments? If so, who and where?
- What else do we need to know about targeting beef producers?

The responses recorded during this discussion are listed below in the order in which they were raised by workshop participants:

- Personal factors are so important but we do not spend money on targeting this.
- How can we influence policy so that more social research is funded?
- Perhaps we should not just engage with the top 25% of producers, but also consider those producers who are less motivated by profit. However, engaging with the top producers can have flow on effects through the industry.
- DSITIA (Dept. Science, Information, Technology, Innovation and the Arts) wish to use social science research on drivers of practice change to guide policy.
- Up to 80% of beef producers are regarded as economically unviable, and up to 85% are not resilient to change.
- What motivates the 80% of people? We need a different approach for these 80% of people.
- It is a huge social problem when producers go broke, especially when they have no other career/work options.
- Currently, only a small percentage of funding is spent on social drivers of practice change, and more evidence of the role of these drivers is required.
- The RCS courses such as Grazing for Profit indicate that collective approach of producer groups produces good outcomes.
- RCS has also put considerable emphasis on personal development and this has been very successful.
- Is there an opportunity to integrate the producer survey work being undertaken by CSIRO with other survey work in the Burdekin?

- Extension staff intuitively assess the resilience of producers, but a more rigorous method may lead to better results.
- Target locations within reef catchments where sediment loss is highest, then use segmentation approach of the Victorian Better Beef project and help these producers build their resilience and adopt best practice.
- ABARE can be used to some extent to segment beef producers, particularly with regard to production and economics, and could be used more for this.
- Some people doubt the accuracy of ABARE or ABS data regarding stock numbers, but some of the other data is useful.
- National Livestock Identification System (NLIS) data base is also useful.
- We need another level of segmentation using the values of beef producers rather than just economic performance. Many producers are not solely motivated by profit. Segments need to also be based on social criteria.
- It appears that producers in other primary industry sectors have similar behaviours and values as beef producers in northern Australia.
- It is anticipated that up to 40% of beef producers will go broke in the next five years. However, this can still take considerable time due to government subsidies and grants, and result in more environmental damage. Should we segment this group with regard to sediment loss, land tenure, productivity and viability? Perhaps there is a need for policy that will help these people exit the industry.
- Government adjustment programs have not worked.
- The Reef Program budget is not large enough to address the poor economic sustainability of the entire beef industry in reef catchments. Therefore, need to target the middle performing group of producers who may be receptive to intervention.
- Comparison with the fishing industry. There were 3000 fishers prior to restructuring, and these were more lifestyle rather than business orientated. Restructuring through purchasing of licenses by government saw the number of fishers decline to 800, and now the industry is much more business orientated.
- Climate change will bring about large adjustments in the beef industry.
- Natural attrition will remove inefficient producers. Government support programs interfere with this.
- A great deal of data is needed when segmenting producers. E.g. debt, age, succession plans.
- Why cannot we use satellite data to target specific producers?
- We need data on the beef producers who have poor land condition so that we can more effectively target them and help them build their resilience.
- Perhaps we need a change in policy that will enable us to more closely target the beef properties that are biggest source of sediments, such as through regulations.

- A profit driver for many beef producers appears to more livestock, when instead the focus should be more kg of beef.
- Our goals need to be specific before we start targeting groups of beef producers.
- Engagement of beef producers in the Bowen-Bogie catchments will require new approaches – need to try new things.
- Do mines contribute to sediment loads?
- Addressing gully and stream-bank erosion is of lower economic importance for beef producers than addressing sheet erosion.
- Can Nadine's data sets be used to help target the beef producers who produce large amounts of sediment?
- There is a correlation between the worst financial performers and the worst environmental performers, although the converse is not always true. Perhaps the lease-hold tenure of some of these worst performers provides an opportunity to intervene and improve their practices?
- Need the right extension people and right approach to build rapport with beef producers if there is any chance of improving their practices.
- Adaptive capacity is a skill set that can be taught to beef producers who need it.
- The group situation adds a lot of value to learning and capacity building. Common goals and common causes with a vision for change. The group dynamics and trust works better with like-minded and similar businesses. Networking is essential to keep things fresh.
- How do we get involved with the B-class producers who are damaging the reef? Can't have groups consisting just of the best producers.

Session 3: Industry best practices and adoption by beef producers in reef catchments

Main points

The first presentation in this session described the management practices that were critical to the success of a beef business, and the second outlined current rates of adoption of these practices.

The first presentation acknowledged the challenges that make it difficult to run a successful beef business. These include the high capital cost of land and the associated debt, infrequent sales resulting in cash-flow shortages, highly variable climate and forage supply, and a long production cycle of around two years from birth of calf to sale of steer.

Working with the environment as much as possible is very important. This starts with knowledge of appropriate long-term stocking rates and matching annual stocking rates to annual forage supply. Doing this will help ensure that good quantity and quality feed is available for cattle, as it is important to keep condition on both cattle and country. The fertility, growth and survival of cattle are dependent on good nutrition, and this

needs to be supplied predominantly by native pastures. Forage budgeting, involving measuring the amount of forage available for consumption at the end of the pasture growing season and adjusting stock numbers accordingly, is vitally important in this respect. The performance of cattle will be very poor if they run out of feed by the end of the dry season. For example, end of dry season body condition of breeding cows is a critical management factor, as it is closely related with pregnancy rates. Breeders require body reserves to cope with the end of dry season forage and nutrient deficiencies. If they are poor, then many of them will not become pregnant in the coming year. Running out of feed at the end of the dry season also results in low ground cover, making land vulnerable to erosion when the wet season commences.

Targeted supplementary feeding can be very useful, particularly in nutrient deficient country, and particularly during low-rainfall years, but should always be viewed as a supplement to the natural pasture diet. Protein supplements during the dry season and phosphorous supplements during the wet season can significantly improve cattle growth and fertility.

Knowledge of when the pasture growing season is likely to commence is also very important. This equates to the date in 70% of years when 50mm of rain falls over three days. This is critical for the time of joining breeders and maintaining their body condition. Controlled mating to align periods of high nutritional demand for periods of best feed availability is really important. It means that calving occurs during the early part of the wet season when forage quantity and quality are high. It also creates even lines of cattle to make marketing and management easier, enables identification of non-productive cows, assists with pasture management, and reduces the need for supplementary feeding. Weaning calves early can also be very useful for maintaining breeder condition in years with low rainfall. However, these young calves need to be managed to ensure that they survive and grow well.

If control mating of cows is not possible, then pregnancy testing can be used to segregate cows into management groups. Pregnant cows can be kept and managed accordingly, and non-pregnant cows can be fattened for sale.

Possession of an adequate number of paddocks and water points are important aides to management. Paddocks which are fenced to land type and which have ample water points will be grazed more evenly, greatly reducing the occurrence of over-grazed areas with low ground cover. Having numerous paddocks is also necessary for segregating classes of cattle and managing them with regards to their specific needs. Possession of numerous paddocks also makes it easier to rest and regenerate pastures during the wet season.

Animal husbandry is also critical through regular use of vaccines for well-known diseases.

Having the genetics that suit the environment is also important. Ideally, the genetics of cattle should enable them to survive, breed and grow in the environment with minimal assistance. Brahman cattle genetics are the basis for this, but well-managed cross-breeding can help produce a carcass that is more highly valued by markets.

The second presentation noted that while the management practices that improve the performance of beef businesses are well known, they have not been readily adopted by beef producers. Unfortunately, many beef producers believe their performance is a lot better than it really is, and self-assessment of best practice adoption does not match reality. Adoption rates of even fundamental management practices, such as record keeping and analysis, alignment with objective long-term carrying capacities

and forage budgeting, are all quite low. In particular, many beef producers do not keep business records and do not see the value in recording information.

Whole-group discussion following these presentations noted that the beef producers who are successfully implementing industry best practices are not our target audience. They are successfully integrating or implementing in a holistic way a wide range of best management practices. They are resilient to challenges and changes, and survive no matter what comes their way. The beef producers who best cope with change are the ones that recognise challenges or risks early and convert these into a strategy for coping with change. In this respect, the success or profitability of beef businesses depends greatly on the people who run them and their management capabilities. This was particularly evident at the Townsville producer workshop where the personal attributes of beef producers appeared to be the factor that most commonly influenced their adoption of industry best practices.

The workshop discussions emphasised the importance of keeping and using accurate records, as this is fundamental to good business management. Keeping appropriate records allows beef producers to benchmark their performance against industry best-performance. This often drives practice change in beef producers, and enables them to continually improve their performance. However, beef producers need to know what type of records to keep, how to simply and easily record these, and how to analyse them. Given the very low profit margins in the industry today, record keep and good business management are more important than they have been in the past. It was noted that the best-performing beef producers use internal and external data in a timely way to support their decisions, and manage their businesses as would the CEO of a large corporation.

In Victoria, the more successful beef producers are very good at measuring and matching the demand for forage with the supply of forage. If nutrition is poor due to a lack of forage quantity and quality, then reproduction, growth and survival will also be poor. It is very important to keep condition on livestock and land, and this will also drive better outcomes for reef water quality. Maintaining the balance between land and livestock is not easy, and requires continual adjustments over time as climate and market conditions change.

Building the capacity of beef producers to manage their businesses and better cope with change was raised again. This can commence by working together and supporting each other as a family unit. Bigger gains can come from working within groups of beef producers, and even larger gains will result from operating within a diverse network of people, which may include veterinarians, financiers, accountants, various types of researchers, extension officers and business people from other sectors. This approach is important for beef producers in all stages of life and business, but will be particularly important for beef producers who are just commencing a career in the industry.

Record of workshop responses

Session three of the workshop commenced with presentations on the most critical management practices for the beef industry and what is known about current rates of adoption of these practices.

The two presentations were:

1. Mick Sullivan: Critical management practices for beef businesses.

2. Kev McCosker, Dave Smith and Tim Moravek: Adoption of best management practices.

Some main points from each presentation are recorded below.

Mick Sullivan: Critical management practices for beef businesses.

Fertility, growth and survival of cattle are the fundamentals of profitability. High capital costs are a major challenge of beef businesses.

Long production cycle is also a major challenge for good management – calves born in the second half of 2011 are only being sold now.

Infrequent cash flow due to highly variable production system is also a constraint.

Need to work with the environment. Must think of when it is next going to rain and have calves dropped at that time. This is the date in 70% of years when 50mm of rain falls over three days. This is critical for the time of joining and maintaining breeder body condition.

Long term carrying capacities are often unrealistic, and are often driven by high property values.

Stocking rate and forage budgeting are essential to achieve sustainable pasture utilisation rates and adequate ground cover at the end of the dry season.

It is also important to fence to land types and fence-off riparian zones where possible. Smaller paddocks with adequate water points are needed to utilise country effectively and for managing cattle.

Growing portion of herd is invariably more profitable than the breeding component. Understand the profitability of the herd and classes of cattle. Need to get the structure and turn-off right.

If your cattle are not earning at least agistment money, then they are not worth keeping.

Need to keep 'condition' on country as well as cattle.

End of dry season body condition is the critical management factor, as it is closely related with pregnancy rates. Breeders require body reserves to cope with the end of dry season forage and nutrient deficiencies.

Weaning early is very important for maintaining breeder condition.

Controlled mating is really important. It means that calving occurs when forage quantity and quality are high. It also creates even lines of cattle to make marketing and management easier, enables identification of non-productive cows, and assists with pasture management.

If you cannot control mate, then use pregnancy testing to segregate cows into management groups.

There are simple animal health musts that can be achieved using well known vaccines. This includes 5 in 1 vaccine for calves, botulism and tick fever for all cattle, leptospirosis for breeders, vibriosis for bulls, and pestivirus for breeders.

Genetics is an underutilised opportunity.

Kev McCosker, Dave Smith and Tim Moravek: Adoption of best management practices.

Self-assessment of practices does not match reality. Many graziers think they are doing a lot better than they really are. For example, in relation to business records, the Grazing BMP database shows that most producers are at or above industry standard. In actual fact they have poor records.

Adoption of some critical practices is quite low, such as keeping records, monitoring stocking rates, forage budgeting, matching long-term carrying capacities and wet season spelling. Adoption of even basic practices is modest. There is lots of room for improvement.

Whole-group discussion


The whole group discussion that followed these presentations was prompted by the questions:

- Are there other critical best practices for beef producers?
- Why do we have the current rates of adoption of best practices?
- What do the 'top' grazing businesses do differently?

The responses recorded during this discussion are listed below in the order in which they were raised by workshop participants:

- The best producers can adapt when things change no matter what. But these are not the people we need to be targeting.
- Benchmarking of performance is an important process for increasing beef producer awareness of their relative performance and can drive practice change.
- Beef producers often think their performance is better than what it really is, especially when they do not benchmark this against the top performing businesses.
- While ground cover is very important, pasture composition and quality can deteriorate before ground cover declines.
- If nutrition is poor due to poor quantity and quality pastures, then reproduction, growth and survival are also likely to be poor.
- Keeping good records is fundamental to better business management, but need to be kept as simple as possible.
- 80% of producers do not see the value of writing things down and have no records. They are not business people. What can we do about improving record keeping?
- Banks have trigger points with beef producers which identify when there is a problem. They can recommend that producers seek assistance from other service providers.
- What records are needed for benchmarking? Need to be clear on what drives costs and what drives income and then ask the right questions.

- There is a need for beef producers to understand the fundamentals of good business management.
- A total of 11 of the 600+ beef business that have completed part or all of Grazing BMP have been audited.
- Advice on format and analysis methods would help beef producers use the records they collect.
- Need simple and standardised record-keeping tools, which are currently being developed at the DAF office in Charters Towers.
- Given the low profit margins today, record keeping and business management are more important today than they have been in the past.
- It is critical to measure beef production and performance at mob/paddock level.
- Accurate long-term carrying capacity assessments and management of stocking rate are the most critical management practices.
- Breeder management is also highly important.
- Reproductive wastage and live-weight production in particular are all about nutrition which ties in well with looking after grass and looking after the reef.
- If pasture intake is limited, so will be live weight produced. Cattle need to maximise their intake every day, and hence management of the feed-base such as through wet-season spelling is very important.
- Managing lactational stress of breeder by weaner management is also important. Wean earlier in poor seasons when cows are dropping condition.
- Bankers rely on producer perspectives, and can direct producers who need help to other service providers, such as DAF and Queensland Rural Adjustment Authority (QRAA).
- Success or profitability comes down to the people and their management capabilities. Why are we still talking about production and not the people side of things when the Townsville producer workshop identified many personal factors as reasons for adopting new practices?
- The best performing beef producers are successfully integrating or implementing in a holistic way the best practices that were outlined in Mick's presentation. They are resilient and are survivors, no matter what challenges come their way.
- Even some of the better performing producers are running their country hard with higher stocking rates. We do not know why.
- It is commonly believed that running more cattle makes more money.
- It is not well known that land in A condition is twice as productive as land in C condition.
- The beef producers who best cope with change are the ones that recognise challenges or risks and convert this into a strategy for coping with change.

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- In Victoria, the more successful beef producers are very good at measuring and matching the demand for forage to the supply of forage, and they know their costs of production. They even work out nutritional budgets at the paddock level.
 - The best performing producers focus on what they can control.
 - The best performing producers use data to support their decisions, and manage their businesses in a similar fashion to corporate businesses.
 - It is very important to get the balance right between people, land and livestock. This is referred to as the 3-legged pot by RCS.
 - Business planning is best done as a family with a shared vision and with consideration of succession requirements.
 - Business planning is also done well in groups, where producers can support each other. Groups of similar businesses may build trust faster.
 - Timely information such as climate forecasts and decision-support tools are critical for helping beef producers adapt to change.
 - Innovation can come through operating within diverse networks, for example those consisting of banks, conservation groups, graziers etc.
 - Producer networks can help build capacity of individual beef producers.
 - Need different intervention approaches for different segments of producers, e.g. the top 25% of producers will respond differently to the other 75%.
 - Mentors can be very helpful for beef producers. These may be the top 20% of producers. Poorer performing producers who will not approach agency staff for advice will often go to these industry leaders for help.
 - Practice change can be mandated, using legislation.
 - Need to be pragmatic and conscious of research limitations and funding.
 - The whole social networking experience has changed so we should not underestimate the power of social media. Refer to Michelle Bridges?!

Session 4: Current efforts to improve practices and performance of beef producers in reef catchments

Day 2 commenced with Steve Banney who communicated the main messages he heard during Day 1. These have been incorporated into the summaries for the sessions in Day 1.

Workshop participants were then given an opportunity to comment:

- We don't promote our services well. Could use TV more. Need to get some help from professional marketers.

- Can we run an activity in conjunction with Beef 2015? It is a low cost opportunity that can reach large numbers of beef producers that have been bought together.
- Is lease-hold tenure holding back the care and development of properties? Probably not.
- We need to use the insights from social science research to target specific producers, rather than use a shotgun approach. We need to think differently about how we engage, and use networks to get information out to producers.

The first session of Day 2 provided an opportunity for participants and participant organisations at the workshop to describe their current interactions with beef producers. This process increased the collective understanding of the services currently provided to beef producers and assisted with identification of opportunities for future collaboration between service providers.

Main points

The workshop broke up into four groups. The activities that have worked well for organisations in these groups are:

- Newsletters, such as BeefTalk, CQ Beef, and Northern Muster that often promote best practices. Positive feedback from readers.
- Working with groups on issues that are important to them.
- Extension activities tailored to the needs and wants of producers as identified by them.
- Future Beef website – integrated communication of print and online.
- Grazing BMP for benchmarking current practice, identifying training opportunities, and drawing extension activities and networks together.
- Working with groups and encourages initiative and creativity. Group days and follow up to group days.
- One-on-one property visits to respond to enquiries (mostly follow-up to other extension activities/courses) and setting up monitoring sites.
- Low or zero interest loans.
- Use partnerships of service providers to deliver a range of skills to address a range of needs.
- Partnerships to facilitate communication, engagement and extension.
- On-ground testing and on-farm work with graziers.
- Phone seminars and webinars.
- Training activities with groups.
- Benchmarking with groups

- Mentoring.
- MLA Edge courses and network. MLA Beef Up forums. MLA website with tools and information.
- Agdata and Agforce – Phoenix mapping (commercial software for property planning).
- Producer demonstration sites (see Future Beef website).
- Beef Challenge. Run by producer groups and coordinated by DAF.
- RCS Grazing for Profit program, KIT days, Executive Link etc., with follow up after courses, mentoring and longitudinal interaction.
- Local field days with small groups of producers on specific topics. E.g. StockTake for forage budgeting, weed control and pregnancy testing.
- NRM regional producer engagement activities, on-ground funding, soil erosion workshops.
- Attend many different forums run throughout the regions and use these to interact with beef producers. Builds rapport with producers. E.g. Drought Coordinators from Human Services.
- Reef Program and Reef Trust – long-term approach to on-ground funding. Water quality grants.
- Project proposal that engage farmers throughout all stages, from concept to final report.
- Grants or subsidies for training courses.
- Promotion of economic benefits.
- Use of women's networks.
- Phone apps for providing data and staying connected.

Record of workshop responses


The workshop broke up into four small groups to record and then report back on what they were currently doing to help beef producers improve their practices. The reports from each group are presented below.

Group 1.

Investing in changing land condition. There are public and private benefits in improving land condition. Plan to integrate investment with Grazing BMP.

Have a number of newsletters, such as BeefTalk, CQ Beef, Northern Muster. These often promote best practices. Some positive feedback from readers.

Working with groups on issues that are important to them has been successful.



Have tailored extension activities to the needs and wants of producers by them what they want.

Future Beef – integrated communication of print and online. Opportunity for integrating with reef extension activities.

Grazing BMP is starting to draw extension activities and networks together.

Not sure if it is smart or efficient to continue targeting the people who have not changed?

Working with groups has been successful, and encourages initiative and creativity. The RCS approach has been effective, such as Grazing for Profit and Executive Link. Future Profit was effective also.

Provide low or zero interest loans. Super funds as a tax-effective investment.

Reef Program.

Use partnerships to provide a range of skills to address a range of needs.

Group 2.

Victorian Department of Environment and Primary Industries Top Soil Project:

- collaborate with NRM
- on-ground testing and work with graziers
- skills and knowledge increase
- phone seminars (not webinars) have been very successful
- graziers are bombarded by email



Queensland

- Grazing BMP is awareness raising
- RCS informal KIT (Keep in Touch) days work well
- training activities with groups or one-on-one (e.g. set up monitoring sites)
- on-ground intervention through Reef Rescue
- key entry (selling) points are business and personal objectives rather than NRM
- partnering with other organisations
- extension, science, decision support tools, mapping
- benchmarking
- group days and follow up to group days
- mentoring.

Group 3.

DAF Future Beef website and social media used as communication tools. A source of information (one stop shop).

DAF one-on-one property visits to respond to enquiries (mostly follow-up to other extension activities/courses).

Grazing BMP – benchmarking by self-assessment. Encourages thinking, further training, and identification of needs.

MLA Edge courses and network. Training workshops on topics such as breeding, nutrition and business management. Are a collation of the up-to-date information for beef producers.

Agdata and Agforce – Phoenix mapping (commercial software for property planning).

Training for chemical accreditation.

Producer demonstration sites (see Future Beef website).

Beef Challenge. Run by producer groups and coordinated by DAF.

Producer groups with various levels of formality.

RCS Grazing for Profit program. Run KIT days that allow producers to informally express their interests and needs. Do follow up after courses, do mentoring and longitudinal interaction.

MLA – tools, Beef Up forums, publications, events

QRAA – primary role of drought funding and sustainability loans.

DAF local field days with small groups of producers on specific topics. E.g. StockTake for forage budgeting. Also run field days on weed control, and pregnancy testing.

NRM Regions – producer engagement activities, on-ground funding, soil erosion workshops.

Drought Coordinators from Human Services attend many different forums run throughout the regions and use these to interact with beef producers. Build rapport with producers and can put them in contact with assistance programs.



Group 4.

Westpac Bank

- focus more on cash flow than security
- training programs for producers/clients
- take a long-term view
- focus on sustainable carrying capacity

Consultant

- best management practice, incentivised trainings

Research

- research to understand why
- what it means to change
- contextual research to define the problem
- likely social impacts related to policy options.

Government

- Reef Program
- water quality grants
- partnerships to facilitate communication, engagement and extension
- research
- Reef Trust – long-term approach
- grazing project proposal to engage farmers
- monitoring outcomes (report cards)
- offsets management or financial contribution
- offset flexibility.

DAF

- Grazing BMP extension
- Nutrition, bulls, operational health and safety (OHS), herd analysis
- Precursor to incentives funding

What has worked well:

- group activities
- funding linkage
- water quality grants (flexible delivery)
- promote economic benefits
- innovation as current thinking is inadequate
- use of women's networks
- share learnings to reduce risks and breakdown competition
- social incentives
- challenge current practices
- get out and get new ideas
- phone apps for providing data and staying connected.



Session 5: Future efforts to improve practices and performance of beef producers in reef catchments

Main points

The first presentation in this session emphasised the need to change our extension strategies, as previous efforts have probably reached their limits in the numbers of beef producers who have changed their practices – insanity is doing the same thing over and over again and expecting different results.

Extension research has delivered a great deal of knowledge but this is often not fully utilised when designing extension programs. Changing people's practices and behaviour is very difficult, and we now need to use innovative modern approaches if we are to have significant impact. In this respect, consideration could be given to agricultural systems approaches, use of enduring groups and use of social media.

The second presentation followed on from this theme by pointing out why commercial advertising is often successful. Successful advertising has emotional hooks that align with people's values, triggering an emotional response and the desire for more information about the product or service. RD&E agency staff are very reluctant to appeal to a producer's emotional values, and instead strive to be an "honest broker" of information.

Commercial advertising recognises that few people seek products or services without being prompted, and that the best way to do this is to align the product with the emotional values of people. As such, advertising of a product will portray values such as freedom, status and happiness, and do this in a way that engenders confidence and trust in the providers.


In agriculture, the early adopters of new practices and technology are hungry for information, will test things, will embrace change and will shape the future. They do not need to be prompted. The later adopters are not hungry for information on best practices and modern technologies, and instead are interested in other things. They tend to be more esteem driven, avoid social risks, are outward directed, want to belong, display symbols of success, and rely on trusted channels and evidence.

Group discussion that followed the presentations reaffirmed these themes.

We need to stimulate people's interest in what we have because most people do not seek information. We assume that by giving producers information they will improve, but this does not work with most producers. We need to arouse them, draw them to the message, excite them, and do not disappoint by catering for the demand we create.

It was noted that money is often not the primary driver of primary producer's decision making. Family, lifestyle and connection with the land may be more important. We need to look at the real motivations as to why they farm – their real values. Use value based messages to promote change as economics do not work as well. This is a more positive way of working with beef producers, compared with messages that emphasise poor practices, low productivity and economically unsustainable businesses.

It was mentioned a number of times that producers often think their practices and performance are better than they actually are. This can be partly due to their low goals



and expectations. We need to know what motivates beef producers and use this to make initial contact with them. With producers “in the room” we can then work with them to raise their expectations and help them achieve these.

It was suggested that social media, such as Twitter responses, could be used to identify the interests and values of beef producers. Most beef producer demographics are using social media, with the only exception being the 40-50 age group.

Workshop participants recommended that extension activities should target all age groups of beef producers, as most properties consist of a family unit, and often with extended family. In particular, several mentions were made of targeting women and making use of women’s networks.

Post morning-tea, whole-group discussion continued prompted by the question “What do we need to do differently? The following responses were recorded during this session:

- Pitch things in the best light to maximise interest i.e. high quality information with a good pitch. Take time in developing the pitch.
- Work at local level across agencies.
- Identify the values of the beef producers who are not actively seeking information or help and then match extension messages to these. Identify social, personal and economic drivers and strategically align these with our messages.
- Get graziers to recognise that they do have a problem and that they need to work on fixing it.
- Identify triggers for prompting behaviour change via developing relationships.
- The top 25% of producers always participate. Concentrate on the next 40%.
- Focus more on women in the business.
- Need two-way communication with beef producers and need more agency and NRM people to visit properties.
- Coat-tail onto other events to help build relationships with producers.
- Extension events should attract women.
- Need more social science research to inform the development of extension programs. Take a better understanding of producers into the design of projects.
- Change the time frame for engagement – lengthen it
- Need to develop and build networks.
- Use commercial advertising companies to get messages out and have staff primed with information ready to respond to enquiries.
- Use long-term or enduring group work.

- Use Grazing BMP to identify needs and take an adult learning approach from there.
- Offer voluntary land management agreements, as these motivate change in practices, and especially with women. Occurred when using VegMachine maps to approach properties that had low ground cover.
- Use a positive approach to support each other to get up to a certain standard. Make change a positive concept by providing support during periods of drought. Improve grazier's drought management capabilities.
- Use mass-media such as television, but then use local media to target a particular area.
- Use a range of messages or values in a single presentation/promotion, even if people do not see all of them.

The whole-group discussion then changed its focus to “on who and where do we target our resources.” The responses recorded during this discussion were:

- Target the locations which will give the greatest improvement in water quality. Use knowledge of the main sources of sediments combined with remote sensing imagery to identify properties that have low ground cover. Work with these properties to improve their management practices, but recognise the need for comprehensive support across a range of disciplines over an extended period of time.
- Group in the middle 50% of performance and viability.
- Female partners.
- Existing groups and networks.
- The 40% of beef producers who do not have strategic management skills and need help to develop these.
- Graziers who are most likely to be receptive.

The final session of the workshop wrapped up with each person identifying the one thing they thought would most improve the effectiveness of extension activities. The responses that were different to those recorded above were:

- Strategic planning of extension with a focus on personal drivers.
- Use objective methods to identify producer needs.
- Focus our messages on where graziers want to be in the future.
- Connect the networks to avoid the silos. Better marshal existing resources for extension. Need a better coordinated whole-of-Queensland approach to extension. Need better coordination across delivery agencies. Take a whole-of service provider network approach, as in Victoria.
- Remember that producers are our clients and that we need to target their needs not ours.

- Be flexible in delivery to hit as many targets as possible.
- Use existing data and tools to better target producers and use social science approach to change practices.
- Create learning opportunities for those who want to change. Provide training for risk management, strategic planning and use of buffers.
- Make available maps of grazing land on the internet.
- Focus on the next generation that will drive change in the industry.
- Use novel approaches that have been successful in other industries.
- Communicate to inspire interest.
- Make extension messages timely. E.g. promote forage budgeting at the end of the wet season. Help producers survive drought, recover from drought, and prepare for the next drought.

Record of workshop responses

The remainder of this workshop was devoted to how we might improve management practices and outcomes of beef producers in reef catchments. This whole-group discussion session was preceded by two presentations on engagement processes:

1. John James: Adoption models: Changing our approach to change.
2. Bruce Howie: Why advertising works.

Some of the main points from these presentations are recorded below.

John James: Adoption models: Changing our approach to change.


Need to do RD&E differently – insanity is doing the same thing over and over again and expecting different results.

A great deal is known from extension research but this is often not used in the design of RD&E projects, especially for increasing rates of adoption.

Need at least five years to achieve practice change when producers participate in projects from beginning to end.

The classical Roger's Diffusion of innovation approach has served us well, but we need to be aware of its shortcomings. For example, there can be a big chasm between the relatively small number of early adopters and the large number of later adopters, and therefore need to use different approaches for each group. The book *Crossing the chasm* by Geoffrey Moore highlights this problem and provides suggestions to overcome it.

ADOPT is a tool that can be used to assess the likely adoption rates of individual practices or technologies. Project leaders can use it before commencing the project to identify possible weaknesses in the proposed extension approach, and plan to overcome them accordingly. See <http://www.csiro.au/Organisation-Structure/Flagships/Sustainable-Agriculture-Flagship/ADOPT>



Use an Agricultural Innovation Systems approach by engaging with other key players (actors) while still planning the project, so that they have involvement and ownership throughout the life of the project. This then reduces any surprises at the end of the project as end-users have been trialling the R&D for some time

Recommends looking at the book by Chip and Dan Heath, *Switch: how to change things when change is hard*.

Change should be seen as a learning journey where there is long-term contact after face-to-face workshops. By walking alongside and following up with beef producers, barriers to change can be more readily overcome. We could use webinars and other online technologies to maintain this extended contact.

Also recommends Community Based Social Marketing for changing practices. See the book by Doug McKenzie-Mohr, *Fostering Sustainable Behaviour: an introduction to community based social marketing*. This has five components:

1. Select behaviours
2. Identify barriers and benefits
3. Develop strategy (-barriers, +benefits)
4. Pilot and test
5. Broad scale implementation and evaluation

No one of these approaches is likely to be a silver bullet, but we need to be open to trialling new ways of approaching change.

Bruce Howie: Why advertising works

Advertisements are often full of targeted images that hit people in the heart. Includes things which are aspirational, and communicates that customers can have confidence and trust in the product and company. This can trigger an emotional response and a desire for information.

Successful advertising has emotional hooks which align with people's values. Agency RD&E staff are often very reluctant to do this.

Not everyone is hungry for information but need to be triggered to seek this. The early adopters may be hungry for information, but the majority of other producers are more difficult to reach because they have an appetite for other things.

The early adopters who are hungry for information will test things, be innovative, will embrace change, will question things and will shape the future.


The later adopters who are not hungry for information and who are interested in other things tend to be more esteem driven, avoid social risks, are outward directed, want to belong, display symbols of success, and rely on trusted channels and evidence.

When farmers respond to "Why do you farm?" their responses are largely related to personal and lifestyle factors, rather than economic and business orientation.

Whole-group discussion


The whole-group discussion following these two presentations was prompted by the questions:

- What are the most effective existing or new strategies for improving the practices of beef producers? and

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- Which ones will be most effective for the target beef producers and/or areas?

The responses recorded during this discussion are listed below in the order in which they were raised by workshop participants:

- The values of beef producers could provide a more positive way of working with producers.
- Some producers “shut down” in response to some extension methods and theories.
- Can survey producers by looking at twitter responses or use twitter for surveys.
- Use twitter responses in designing extension programs as part of project R&D – blends science and peoples values and may be a more successful approach.
- Segment age groups in agriculture. Young people use e-media. Many Northern Australian beef producers are old and a different approach is needed.
- There is a range of age groups in families on properties, so target all age groups.
- Tap into people’s personal values to engender change or do we start again? Farmers are not naturally information seekers and thus have to stimulate their interest – arouse and fulfil.
- Need well-structured extension activities with appropriate content.
- Need consistency in information that is delivered.
- All demographics are using social media, and not just the younger cohort. However, it is the 40to 50 year olds that use e-media least.
- Money is often not the primary driver of primary producer’s decision making. Family, lifestyle and connection with the land may be more important.
- Need to look at the real motivations as to why they farm – their real values. Use value based messages to promote change as economics do not work as well.
- We need to stimulate people’s interest in what we have because most people do not seek information. We assume that by giving people information they will improve, but this does not work with most producers. We need to arouse people, draw them to the message, excite them, and do not disappoint by catering for the demand we create.
- We need to maintain quality information and work out how to arouse interest in it.
- A lot of producers think they are doing OK and do not need help – how do you get that spark with them?
- Need to raise producer’s goals and expectations, because these are often low.
- Need to work more on getting people in the room.
- We need to know more about what most motivates producers.


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- Banks are in a position to be a significant player in changing practices. They are attempting to develop strong relationships with producers and also run training courses.
 - Need to focus more on women as they play important roles in most beef businesses. RCS do this well.

Whole-group discussion

The whole-group discussion of how to improve the practices of beef producers continued after afternoon tea prompted by the question “What do we need to do differently?”

The following responses were recorded during this session:

- Need an inventory of what has been done.
- Pitch things in best light to maximise interest i.e. high quality information with a good pitch.
- Identify what has worked well and revisit/review and try again.
- Take a lead from other industries e.g. Health.
- Work at local level across agencies.
- Change message to a profitability focus rather than environmental or reef.
- Link the problem producers to the problem i.e. degraded reef.
- Business management approach is overdone. Take a more innovative approach, such as the “fuel gauge” analogy for performance.
- Go back to basics or fundamentals.
- How do we handle the “I’m OK Jack” managers which are a difficult group to work with?
- Engage with the above group to identify what does motivate them – listening with focused questioning, then match messages to their values.
- Get graziers to recognise that they do have a problem.
- Put more focus on getting people into the room.
- Independence is a driver – translate this into an option.
- Banks need more engagement with producers on technical issues. Could get assistance from Agforce, National Farmers Federation, and Governments etc.
- Identify triggers via developing relationships.
- The top 25% of producers always participate. Concentrate on the next 40%.
- Focus more on women in the business.

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- Need two-way communication with beef producers on reef matters. Need more reef people to visit properties.
 - The “Upper Murray Cowgirls” are a Victorian example of a successful women’s discussion group. They do things differently to the men-dominated groups and identify women’s needs.
 - Take time in developing the pitch, as RCS do.
 - Coat-tail onto other events.
 - Use a broader agenda at extension events.
 - Events should attract women.
 - R&D outputs are declining over time, and how can this be addressed?
 - Need more social science research.
 - Keep things grounded – too many spin-doctors.
 - Change the time frame for engagement – lengthen it
 - Need to develop and build networks.
 - Identify social, personal and economic drivers and strategically align with our messages.
 - Use external advertising companies to get messages out and have staff primed with information ready to respond to enquiries.
 - Explore going back to past – more long-term or enduring group work.
 - Take a better understanding of producers into the design of projects.
 - Use Grazing BMP to identify needs and take an adult learning approach from there.
 - Need more social research to develop engagement tools, and include evaluation.
 - A new project that includes social marketing approach.


The whole-group discussion then changed its focus to “on who and where do we target our resources.” The responses recorded during this discussion were:


- The locations which will give the greatest improvement in water quality.
- Graziers who are likely to be the most responsive.
- Group in the middle 50% of performance and viability.
- Female partners using appropriate mechanisms.

- Existing groups.
- Existing networks.
- Target all with broad spectrum extension messages.
- Use remote sensing imagery to identify properties that have low ground cover. Use this in conjunction with sediment source knowledge.
- The target group could be as large as the 85% of producers that are vulnerable to change. However, 40% do not have strategic management skills and need help to develop these.
- Recognise that intensification of grazing using high stocking rates increases risks of degradation.
- More producer demonstration sites to demonstrate practices and outcomes.
- More water and wire and run less stock.
- Work with properties that are identified as problems – need comprehensive support across a range of disciplines over an extended period of time.
- Offer voluntary land management agreements, as these motivate change in practices, and especially with women. Occurred when using VegMachine maps to approach properties that had low ground cover.
- Use a positive approach to support each other to get up to a certain standard.
- Make change a positive concept by providing support during periods of drought.
- Use mass-media such as television, but then use local media to target a particular area.
- Join sources of data to engender practice change and observe changes over time.
- Improve graziers drought management capabilities.
- Use a range of messages or values in a single presentation/promotion, even if people do not see all of them.
- Advertising needs to target specific groups of producers.

The final few minutes of the workshop were used to determine what we might do in the near future. Each person at the workshop was asked to recommend the one thing they thought would most improve the effectiveness of extension activities. The following responses were recorded:

- Use a bottom-up approach so that producers nominate directions.
- Think much more about how we communicate.
- Market products and services.
- Use blend of general and targeted marketing.

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- Use communication and extension tools.
 - Take a social science approach to delivery.
 - Strategic planning of extension with a focus on personal drivers.
 - Use objective methods to identify producer needs.
 - Be clear about who and where the target audience is.
 - Need to be innovative about engagement techniques because previous approaches are not working.
 - Use marketing approaches.
 - Focus our messages on where graziers want to be in the future.
 - Listen to the audience.
 - Connect the networks to avoid the silos.
 - Better marshal existing resources for extension.
 - Be clear about what we are selling – have a clear vision.
 - Try different approaches.
 - Need more social R&D and develop relationships.
 - Remember that producers are our clients and that we need to target their needs not ours.
 - Communication needs to be 2-way.
 - Get people together to talk and do things.
 - Less science and more marketing/pitch.
 - Be flexible in delivery to hit as many targets as possible.
 - Need better coordination across delivery agencies.
 - Need to work out how to have many targets with limited resources.
 - Make better use of the tools we have.
 - Use existing data and tools to better target producers and use social science approach to change practices.
 - Focus more on changing behaviour.
 - Create learning opportunities for those who want to change.
 - Take a whole family approach.

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- Use technology to educate e.g. a website.
 - Make available maps of grazing land on the internet.
 - Need a better coordinated whole-of-Queensland approach to extension.
 - Use the marketing approaches used by people who identify and sell lifestyle benefits.
 - Need more empowered leadership and graziers.
 - Bring sexy back – repackage messages.
 - Focus on the next generation that will drive change in the industry.
 - Build rapport and move forward on this basis.
 - Take a whole-of service provider network approach, as in Victoria.
 - Need to use active two-way communication.
 - Market personal values.
 - Use novel approaches that have been successful in other industries.
 - Innovation, sharing risks, experimenting and refining approaches.
 - Shared learning rather than competition.
 - Social incentives e.g. associated with status.
 - Provide training for risk management, strategic planning and use of buffers.
 - Communicate to inspire interest.
 - Use phone applications e.g. farming updates.
 - Make extension messages timely. E.g. promote forage budgeting at the end of the wet season.

Workshop Close

The workshop finished up with some comments from staff from the Australian Government Departments of Environment and Agriculture.

Peter Chase:

- How can we build on the momentum created here to the point where there is action on the ground?
- The Australian and Queensland governments are working with FBA and Northern Queensland Dry Tropics on a reef grazing project proposal that aligns well with the outcomes of this workshop.
- Particularly interested in a project proposal that better engages with beef producers.
- The outcomes of this workshop are applicable right across the beef grazing lands of northern Australia



Michele Barson:

- Geography is very important in targeting producers
- Working on making remote sensing imagery more available to the public
- Will need to target a smaller subset of beef producers from the 85% that are not resilient
- Need to focus on the groups of producers who we target
- Enduring groups has worked well as an extension process
- Need to consider women when designing engagement processes given their important role in agriculture.

Kevin Gale

- Canberra relies on its delivery partners in the states, and hence they need to take on-board the outcomes of this workshop
- Limit project activities to working with the willing and those that need help, and not just the early adopters. This will maximise public and private return on investment.
- Need to better use mainstream advertising and media, e.g. Country Life, Landline.
- Need more extension people to go out and interact with producers and build long-term relationships, to establish trust, increase their resilience to drought and other external factors.



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