

A REVIEW OF USER SATISFACTION WITH FUTUREBEEF COMMUNICATION TOOLS AND IMPACT ON PRACTICE CHANGE

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Pear Consulting, Rural Analytics and Livestock Dynamics are private research and consulting businesses servicing Australian agriculture and rural and regional Australian clients.

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ABBREVIATIONS

Acronym	Full name/description
BOM	Bureau of Meteorology
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAF	Queensland Department of Agriculture and Fisheries (also QDAF)
DPI	Department of Primary Industries
DPIRD WA	Department of Primary Industries and Regional Development, Western Australia
KEQ	Key Evaluation Questions
KLR	Private industry consulting firm
LPA	Livestock Production Assurance
MER	Monitoring, evaluation and reporting
MLA	Meat & Livestock Australia
NACP	Northern Australia Climate Program
NSAID	Non-steroidal anti-inflammatory drugs
NQR	North Queensland Register
NT DITT	Northern Territory Department of Industry, Tourism and Trade
NTCA	Northern Territory Cattlemen's Association
PDS	Producer demonstration site
Q&A	Question and answer
QCL	Queensland Country Life
QDAF	Queensland Department of Agriculture and Fisheries (also DAF)
R&D	Research and development
RCS	https://www.rcsaustralia.com.au/

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● EXECUTIVE SUMMARY

BACKGROUND

FutureBeef is a collaborative project for the northern Australian beef industry with partners including Queensland Department of Agriculture and Fisheries, Northern Territory Department of Industry, Tourism and Trade, Department of Primary Industries and Regional Development Western Australia, and Meat & Livestock Australia. FutureBeef provides a range of communication tools that offer practical and scientific insights into a range of issues specific to the northern Australian beef industry.

This report provides a systematic review of the FutureBeef communication tools through quantification of the rating of user satisfaction for the tools, the reasons given for those ratings, the degree and impact of practice change attributed to the use of the tools and finally what FutureBeef users believe are suggested improvements and requirements for a subsequent FutureBeef program.

This report addresses four key evaluation questions, that were established by the report authors and the FutureBeef advisory committee. These questions formed the basis of the review. Those questions were:

1. What level of brand awareness exists for FutureBeef within the northern beef industry?
2. How satisfied are the users of FutureBeef communication tools? (Including the website, eBulletin, webinars, social media, newspaper features and YouTube channel)
3. How has engagement in FutureBeef communication tools influenced practice change?
4. What are the future industry needs of FutureBeef beyond the current project?

METHODOLOGY

The evaluation of the FutureBeef communication tools was undertaken in two phases. The first component of phase one comprised of an online survey developed in consultation with the FutureBeef advisory committee and implemented via the Survey Monkey® platform. The survey aimed to evaluate brand awareness, user satisfaction with, and usefulness of, the FutureBeef communication tools, to identify elements of practice change and needs for a subsequent FutureBeef program. A link to that survey was distributed through FutureBeef communication tools and through paid advertisements on several social media platforms. The survey was open for 25 days during March-April in 2021.

At the close of the survey, there were 202 respondents that had completed the survey of which 184 were from the northern beef jurisdictions. An analysis of the responses to ratings questions indicated that there was a significant difference in responses to survey questions between producers and service providers (private and public), yet no difference between gender or age groups.

The second component of phase one involved one-on-one interviews conducted via phone or video conference (Zoom) with 19 FutureBeef stakeholders. The

interviewees were selected from the online survey participants who firstly indicated that they were prepared to be interviewed and had provided contact details and then secondly those that had undertaken a practice change partly attributable to FutureBeef. The interviews followed a semi-structured interview that obtained more in-depth responses to expand on the survey findings in relation to practice change and future needs.

Phase two of the project was undertaken following the completion and reporting of the survey and interviews. It involved the development of four producer case studies to illustrate how engagement with FutureBeef communication tools has supported meaningful practice change.

SUMMARY OF FINDINGS

This review found that FutureBeef is a valued and trusted information resource for the northern Australian beef industry. Overall awareness of the FutureBeef program is found to be high (8.3/10), with QDAF and MLA identified as key partners. In contrast the awareness of NT DITT and DPIRD WA was lower even within the respondents that were located within those jurisdictions. FutureBeef was also identified as one of the key sources of reliable and relevant information.

Overall user satisfaction with the FutureBeef communications tools was high. The majority of the specified tools exceed the target set in 2018 of 7.5/10. Notably the website, eBulletin, webinars, Facebook® and YouTube® channel exceeded that target. Whilst the Twitter® rating exceeded the target, the usage rates for it and LinkedIn® were exceptionally low and therefore may be potentially biased. Feature articles had the lowest rating of the tools 6.4/10, which is notable as it had the highest rating in a 2016 survey.

The high ratings given by FutureBeef users were linked to comments made on relevance, reliability, presentation and trust. Navigation of the website and accessibility of the tools (either time or via the internet) were areas where improvement could lead to greater usefulness. The FutureBeef website and webinars are the tools that are the most impactful for the program in terms of generating activity across the various stages of adoption of practice change. The website and eBulletin are essential for signposting FutureBeef activities and for indicating that new information is available.

The website and webinars are the predominate communication tools that provide a swath of information across a range of adoption points. The eBulletin is a focal or central point for FutureBeef and is the key catalyst for creating awareness of all FutureBeef activities and new information. These tools should be maintained or improved to ensure the on-going success of FutureBeef.

The surveys and interviews identified two different and distinct user types for FutureBeef. The first being classified as 'Active seekers' who are very much focused on information gathering, seeking knowledge that can be implemented directly particularly if supported by strong science or other producer endorsement. The second group are classified as 'Interest triggered' and predominately use FutureBeef as an awareness tool, being passive in looking for solutions and appear to be more opportunistic in the use of information from FutureBeef.

FutureBeef has been successful in influencing practice change within the northern Australian beef industry. Approximately 74% of survey respondents indicated that they had made or intend to make a practice change because of a direct engagement with FutureBeef. This is a strong result for the FutureBeef program. The key areas where FutureBeef participants have implemented practice change include pasture management, grazing management, supplementation, and animal performance (health and production). Attribution to FutureBeef was also high amongst those respondents that had implemented practice change (58%).

FutureBeef mostly supports the early phases of adoption pathway mainly through awareness and stimulating interest or satisfying the need for knowledge (the website and the eBulletin). The website and webinars have proven to be strong deliverers of credible information that has satisfied many users' need for information to support and provide confidence to decisions and for evaluation and trialling. Specifically, the interactive webinars supported several stakeholders to transition through the later stages of the adoption of practice change.

There is a strong desire amongst those surveyed to see FutureBeef continued as an essential source of information, support, and connectivity for the industry. FutureBeef users identified improving the website functionality (search) and format (style and structure), access to interactive webinars involving producers and producer case studies and ensuring that all content is formatted and structured in a form that allows easy access and useability as the key suggested improvements to be addressed in a subsequent FutureBeef program. In addition, the delivery of content in smartphone and tablet ready format is recommended to service future access needs.

Several recommendations are focussed on improving the functionality of the FutureBeef program and adding elements that would improve the overall useability and impact of the program and its communication tools.

● INTRODUCTION

BACKGROUND

The northern Australian beef industry is geographically and demographically diverse, representing over 60% of the land use in regions from the Kimberly and Pilbara in Western Australia, through most of the Northern Territory and Queensland (MLA Northern Beef Industry). Importantly 67% of Australia's beef herd exists within predominately large *Bos indicus* influenced herds owned by 8000+ northern beef industry participants from large corporates (domestic and foreign owned), large family enterprises, smaller individual family enterprises and indigenous land holders.

Productivity and profitability of northern beef enterprises are generally lower than southern beef enterprises, although cost of production is also lower (ABARES 2020). Northern beef production is targeted towards supply of cattle (both feeder and finished) for domestic markets and supply of feeder (with some breeder) cattle into the live export markets.

A key challenge for the northern beef industry is the rate of adoption of the outcomes of research and development (R&D) and improved management practices. Geographical isolation, communication and connectivity challenges, climatic variability and access to farm capital all impact on the adoption rates. As a result, investment by industry service providers and state agencies in on-line delivery and engagement mechanisms such as FutureBeef is important. Monitoring, evaluation and reporting (MER) of such services is critical to ensuring that there is return on those investments as well as ensuring that product characteristics are leading to adoption impacts.

PROJECT BACKGROUND

FutureBeef is a collaborative project for the northern Australian beef industry with partners including Queensland Department of Agriculture and Fisheries, Northern Territory Department of Industry, Tourism and Trade and Department of Primary Industries, Regional Development Western Australia and Meat & Livestock Australia.

FutureBeef uses a range of communication channels to support the northern Australian beef industry by providing practical tools, scientific insights, and relevant, timely advice.

In 2019/20 FutureBeef provided a coordinated approach to online information delivery and engagement for the northern beef industry. This approach delivered the following activities:

- a website with 1037 pages of curated content, over 360,000 views from 199,000 users
- 10 webinars with 1282 registrations and 558 attendees (39% producers). Webinar recordings with over 4500 views
- 1101 social media posts (Facebook® and Twitter®) to over 14,000 followers and a total of 21,525 clicks, shares, comments and reactions to these posts. 14,185 referrals to the website
- 12 eBulletins published to over 5400 subscribers

- YouTube channel with over 18,000 views and a total watch time of almost 1705 hours
- 3 beef features published in print media

This project was designed to evaluate the success of the FutureBeef communication tools, to rate user satisfaction/usefulness, to identify the future user needs and requirements and provide recommendations that may assist the future development of FutureBeef's communication offerings.

PROJECT OBJECTIVE

The objective of this project was:

- to understand the user satisfaction of FutureBeef communications tools and the value of the FutureBeef communications tools in influencing practice change through adoption of R&D and improved management practices.

KEY EVALUATION QUESTIONS

The project was designed to address four key evaluation questions (KEQs), listed below:

1. What level of brand awareness exists for FutureBeef within the northern beef industry?
2. How satisfied are the users of FutureBeef communication tools? (including website, eBulletin, webinars, social media, newspaper features and YouTube channel)
 - a. How useful are they?
 - b. What makes them useful/not useful?
 - c. How could they be improved?
3. How has engagement in FutureBeef communication tools influenced practice change?
 - a. What types of practice changes have occurred?
 - b. How did FutureBeef influence decision making around practice change?
 - c. What are the barriers to practice change?
4. What are the future industry needs of FutureBeef beyond the current project?
 - a. How could FutureBeef be improved in the future?
 - b. What communication tools should be prioritised?

The discussion of key findings and implications section of this report addresses the project findings relating to these questions.

METHODOLOGIES

The evaluation of the FutureBeef communication tools was undertaken in two phases. Phase one comprised of an online survey (through Survey Monkey®) and targeted one-on-one interviews. The online survey was used to gather a broad range of opinions of the FutureBeef tools. A smaller number of targeted one-on-one interviews were then used to test themes identified from the survey responses and to explore in greater detail how FutureBeef has influenced practice change, barriers to practice change and to identify future needs for FutureBeef users.

Phase two of the project was undertaken following the completion and reporting of the survey and interviews. It involved the development of four producer case studies to illustrate how engagement with FutureBeef communication tools has supported meaningful practice change.

ONLINE SURVEY

QUESTIONNAIRE

The primary goal and outcome of the online survey was to evaluate the success of the FutureBeef communication tools, how FutureBeef has influenced practice change and to source stakeholder opinions to influence future development of FutureBeef's communication tool offerings.

The project consultants developed the online survey based on a draft questionnaire provided by the FutureBeef Manager. The questionnaire was then further expanded to ensure compatibility with previous surveys and alignment with the project KEQs. It was then tested with the FutureBeef advisory committee and implemented using the commercial Survey Monkey® service.

The survey consisted of six sections:

1. Consent. Agreeing to participate on the understanding that this participation is voluntary, that the participant can withdraw at any time, and that the information provided is confidential and only for use in the current research project.
2. Demographics. This section gathered background information on the participant – which state they operate in, their business activity (producer/pastoralist, service provider, etc.), business structure (family/private, company, corporate, etc.), their role in the business (manager/decision maker, financial, worker, etc.), age category, and gender.
3. Awareness. Participants were asked to rate their awareness of FutureBeef and of the role of the partner organisations delivering FutureBeef (MLA, QDAF, NT DITT and DPIRD WA).
4. Assessment of communication tools. This section sought an assessment of each of the FutureBeef tools i.e. website, eBulletin, newspaper feature articles, webinars, Facebook®, Twitter®, LinkedIn®, YouTube®. This included whether they used the tool, how they rated the tool (if they used it), why they gave that rating, and how the tool might be improved.

5. Practice change. Has practice change occurred as a result of use of FutureBeef communication tools, what was the change, what was the level of impact and the level of attribution to FutureBeef?
6. Suggestions. Asking for suggestions or commentary on how the FutureBeef communications could be improved and what else might be considered for future inclusion.

The online survey questionnaire (see Appendix 2) was approved by the FutureBeef advisory committee prior to release.

SURVEY DELIVERY

The survey was opened to the public on 22 March 2021. The promotion of the survey was led by the FutureBeef Manager at QDAF with promotions via FutureBeef communication tools including direct emails to FutureBeef email lists, direct email to beef extension officers in the partner jurisdictions, inclusion in the FutureBeef eBulletin and via FutureBeef’s social media platforms including paid advertisements within a selection of those platforms and through MLA communication channels. The survey was also directly circulated to a contact list of northern beef stakeholders that was collated by the consultants.

After the initial promotion at the survey launch, three subsequent waves of promotion were delivered to encourage further participation. Those promotions were:

- direct email and social media posts (30-31 March 2021),
- paid social media promotion (5-14 April) and
- inclusion in the FutureBeef eBulletin (sent on 12 April 2021).

Those promotions resulted in increased survey activity (see Figure 1). The survey was closed on 15 April 2021 (25 days duration) after a 24-hour period of no further responses.

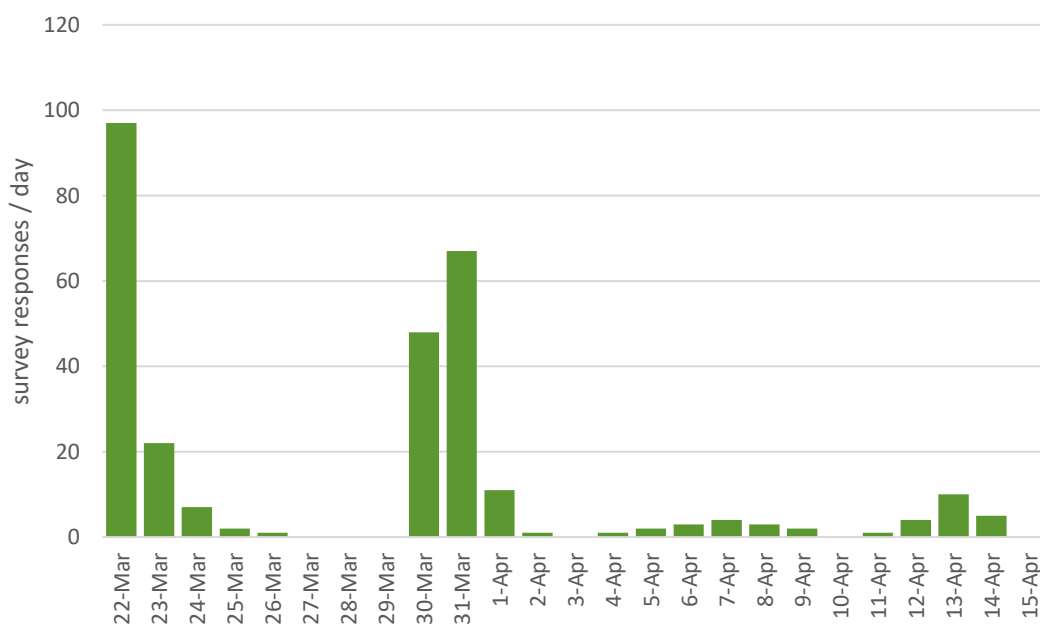


Figure 1. Number of survey responses by day.

An incentive prize in the form of a \$500 VISA card was offered to encourage participation. Participants opted to be included in the prize draw at the end of the

survey which may have assisted completion rates. At the conclusion of the survey period, the prize recipient was selected at random. The prize recipient was a beef producer from central Queensland.

SURVEY ANALYSIS

The survey responses were downloaded from Survey Monkey® in Microsoft Excel format and analysed using a combination of MATLAB by Mathworks¹ and Microsoft Excel.

Standard statistics (mean, median) and frequency distributions were used to characterise the responses. A MATLAB unbalanced Analysis of Variance procedure (ANOVAN) was used to test for significant differences between sub-samples of the data.

INTERVIEWS

One-on-one interviews were conducted via phone or video conference (Zoom) with 19 FutureBeef stakeholders. They were selected from the online survey participants who indicated they had undertaken a practice change partly attributable to FutureBeef. The interviews followed a semi structured interview process and were designed to test themes identified from the online survey, to gather more in-depth responses to support its findings in relation to practice change and future needs, and to identify potential case study participants.

The interviews were audio recorded (if the participant gave permission) and recordings were used to review the interview and transcribe key quotes and notes after the event.

Interviews were conducted over a two-and-a-half-week period between 28 April and 17 May 2021.

INTERVIEW QUESTIONS

The project consultants developed the interview questions after initial analysis of the online survey results. The interview questions were reviewed and approved by the FutureBeef advisory committee prior to the interviews commencing. The interviews were designed to gather in-depth information to answer KEQ's 3 and 4 relating to practice change and future needs of FutureBeef.

The interview questionnaire consisted of six sections:

1. Consent - Agreeing to participate on the understanding that participation is voluntary, the participant can withdraw at any time, and the information provided is confidential and only for use in the current research project. Each participant was asked for consent for the interview to be audio recorded to ensure accuracy of information collected and they were free to ask for the recording to be stopped at any time.
2. Description of practice change – Describing in more detail the forms of practice change influenced by FutureBeef. Where more than one practice change was indicated, participants were asked to choose their most significant change for discussion throughout the interview.

¹ www.mathworks.com

3. Decision making influence – Seeking to understand the prompts and triggers for practice change, how FutureBeef influenced the decision, the stages of adoption where FutureBeef assisted and additional support that was needed to make the practice change.
4. Benefits of practice change – Identifying key benefits of the practice change to the property or business.
5. Barriers to practice change – Understanding the types of intended practice changes and the barriers preventing producers from proceeding with the practice change.
6. Future needs for FutureBeef – Gathering in-depth responses to the future needs of FutureBeef, preferred communication tools and further comments on FutureBeef.

SELECTION OF INTERVIEW PARTICIPANTS

The interview participants were selected from the online survey respondents. The following criteria was used to generate a final list of 27 potential interview participants:

1. Consent given for further contact from the consultancy team (n=61)
2. Has implemented some form of practice change (n=41)
3. Has identified as a primary producer, feed lotter or seedstock producer (n=30)
4. Has a herd size greater than 54 head (n=27)

A number of very small herd sizes were excluded from the interview list to ensure the interview list primarily included commercial beef operations.

As all the potential interview participants selected were from Queensland, three Western Australian producers (who had consented to be interviewed and had indicated an intent for practice change) and one Northern Territory service provider (who also had cattle and had indicated a practice change) were added to the list.

Email requests for participation in an interview were sent to the individuals on the list on 27 April, with follow up emails sent on 4 May and in the week of 10 May. Interviews were booked via reply email. An interview consent form detailing the consent, confidentiality and ethical considerations associated with the interview was sent to participants and either signed and returned or agreed to at the start of each interview.

INTERVIEW ANALYSIS

Interview transcripts and notes were reviewed to identify emerging themes. The results are reported against the key areas investigated by the interviews:

- Interview demographics
- Summary of the interview practice changes
- Decision making influence
- Barriers to practice change
- Future needs for FutureBeef

In depth data gained from the interviews was used to support the findings of the online survey in addressing the KEQs. These are summarised in the discussion and findings section of this report.

The benefits of practice change raised by interview participants were used to help identify suitable case study participants. These benefits and supporting evidence are explored more explicitly in the four producer case studies. A summary of the key benefits relating to the interview practice change themes is provided in Table 37 of this report.

CASE STUDIES

Four producer case studies were identified from the phone interviews. The case studies highlight the practice changes implemented, the impacts of FutureBeef tools in influencing these changes and the benefits they have led to. These producers were re-interviewed to gather further information for the case studies. Case study interviews were conducted by video conference using Zoom and were audio recorded and transcribed after the event.

The 'Story of change'² interview technique was used to guide the case study interviews. Transcript notes were used to write the stories of change and written case studies included the following content: background, producer involvement with FutureBeef tools, practice change(s) influenced by FutureBeef tools, impacts and benefits of the practice change and a summary of key take home messages. Photographs were requested from the case study participants at the time of the interview and used to support the written case studies. The producer cases studies are included as a compendium to this report.

² The 'Story of Change' technique uses a participant's own experiences to describe why they feel the change is significant. It is based on the 'Most Significant Change' technique developed by Dart and Davies, 2005.

ANALYSIS OF SURVEY AND INTERVIEW RESPONSES

ONLINE SURVEY RESPONSES

DEMOGRAPHIC OF THE SURVEY RESPONDENTS

At the close of the survey, there were 291 responses recorded by SurveyMonkey®. However, 86 respondents did not proceed past the demographic questions which is an unusual result as normally survey participants complete several questions before abandoning the survey, and perhaps may be a result of the offer of an incentive draw. A further two respondents only answered a small number of questions after the demographics section, and one gave answers that did not address the actual questions. The majority of the remaining 202 responses were in the northern beef states (Table 1). There were a few responses (9%) from outside the target states including a couple of service providers operating across several states.

Table 1. Distribution of completed responses by state.

Location	Number of responses
Queensland	157
Western Australia	15
Northern Territory	12
Northern states	184
New South Wales	11
Victoria	2
South Australia	2
Southern states	15
Operating across QLD, NSW, VIC, SA, WA, and NT	1
Operating across QLD, WA, and NT	1
Nigeria	1
Total	202

Thus, there were 184 responses from the northern beef states (WA, NT, QLD), and 15 from southern beef states (NSW, VIC, SA).

Of the 184 northern beef respondents, 132 (72%) are primary producers including 119 who identified as producers/pastoralists, 12 as seedstock producers plus one feed lotter. The 52 service providers included both public (21) and private (31) service providers.

Out of 175 respondents that indicated the form of their business structure, 160 (91%) are family or privately owned, ten (6%) are companies, four (2%) are large corporates and one (<1%) is indigenous owned or managed.

Of the 178 respondents that identified their role in the beef enterprise, 143 (80%) are owners or decision makers, 15 (8%) are property managers and only six (3%) are property workers. Thirteen indicated other roles (7%).

Of the 199 respondents that indicated their gender, 48% are female with an estimated average age of 45 years, lower than the male respondents at 53 years (Table 2).

Table 2. Number of survey respondents by age and gender.

Age range	Female	Male	Total
Under 18	1		1
18-24	8	3	11
25-34	17	5	22
35-44	20	24	44
45-54	24	26	50
55-64	24	18	42
65+	2	27	29
Total	96	103	199

An interesting theme was that even though the FutureBeef communication tools reviewed are all online, the age bracket (18-34), that was expected to be most likely engaged with social media platforms only represented approximately 15% of the responses. This is potentially related to a belief that the primary decision makers are most likely to engage with FutureBeef. Another possible influence on this result is that there is a belief that the younger demographic is more likely not to complete online surveys. Regardless, this result is worthy of further investigation.

Herd size across all respondents averaged 3,554 head with a range from 6 to 200,000 (Table 3). The median number of head across all northern states was 400 indicating a skew toward smaller herds; 59% of herds were 500 or fewer (Figure 2). This result was unexpected as northern beef herds are usually larger³ than in southern regions.

Table 3. Herd size statistics by state reported by survey respondents.

Region	Count	Average	Median	Range
Queensland	107	2,769	300	6 – 200,000
Northern Territory	6	7,325	6,000	450 – 25,000
Western Australia	9	10,378 ⁴	4000	9 – 65,000
Total	122	3,554	400	6 – 200,000

³ ABARES 2021. Australian beef: financial performance of beef farms 2017–18 to 2019–20
Therese Thompson and Fred Litchfield.

⁴ Includes one service provider covering 65,000 head. Average herd size of the eight Western Australian producers was 3,550 head.

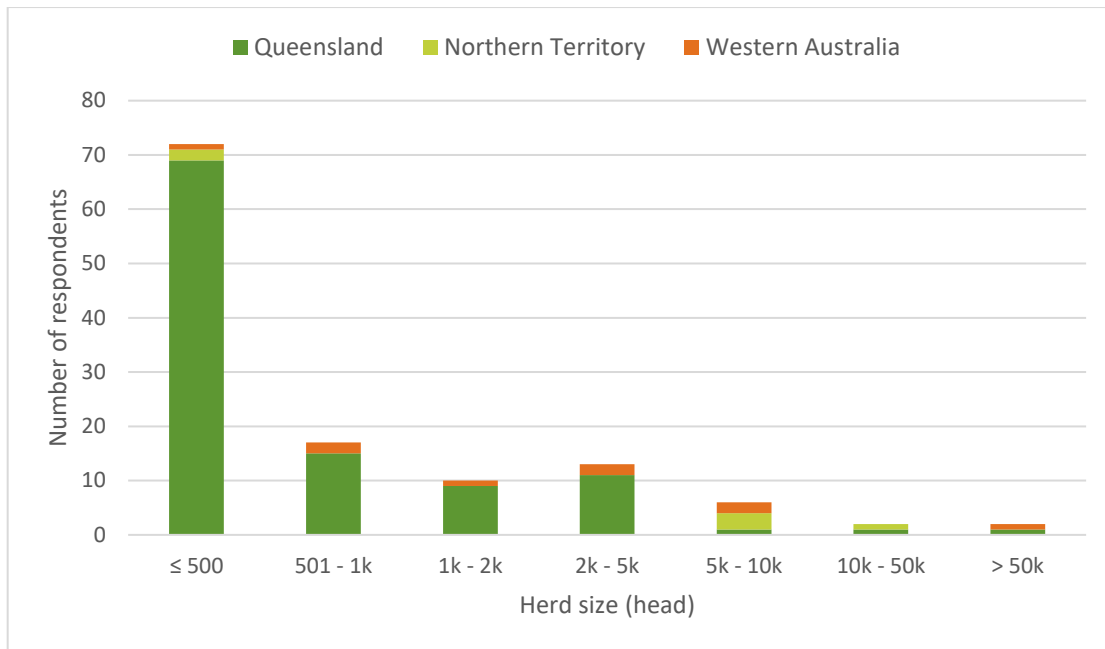


Figure 2. Distribution of survey respondents by herd size.

DEMOGRAPHIC SUB-GROUPS

An analysis of variance was used to identify if there are demographic sub-groups within gender, age category, and industry role that provided significantly different ratings. Sub-groups with a small number of responses were combined, prior to the analysis, as follows:

- Producer/pastoralist, seedstock producer and feed lotter were combined to form 'all producers.'
- Public and private service providers were merged to form 'all service providers.'
- The 'under 18' and '18-24' age groups were merged into an 'under 25' group.

All responses from the 14 questions that asked respondents to provide a rating were pooled giving a total of 1829 observations. All ratings were on a scale from 1 to 10 with higher ratings indicating a better result. An analysis of variance was used to determine if there was a difference by age, gender or role in the ratings provided.

Table 4. Analysis of variance of pooled ratings showing a significant effect of role (producer versus service provider) but no significant difference for age or gender.

Source	Sum Squares.	Degrees of freedom	Mean Square error	F statistic	Prob>F
Age	18.6	5	3.726	0.53	0.7511
Gender	16.2	1	16.193	2.32	0.1281
Role	122.9	1	122.889	17.59	<0.0001
Error	12720.9	1821	6.986		
Total	12888.7	1828			

This analysis shows that there was no significant difference between the ratings given by different age groups ($p=0.75$) nor between males and females ($p=0.13$). However, there was a significant difference ($p<0.0001$) between the ratings given by

producers (including seedstock producers and feed lotters) and that given by service providers (both public and private). A separate regression analysis showed that on average, service providers gave a rating across all questions 0.6 units (6%) higher than that given by producers.

RELIABLE AND RELEVANT SOURCES OF INFORMATION.

A key performance indicator for FutureBeef is being positioned (or viewed) as one of the key information sources for the northern Australian beef industry. A survey question asked of all respondents was what (or who) were their key sources of information followed by a supplementary question of how reliable and relevant those sources are.

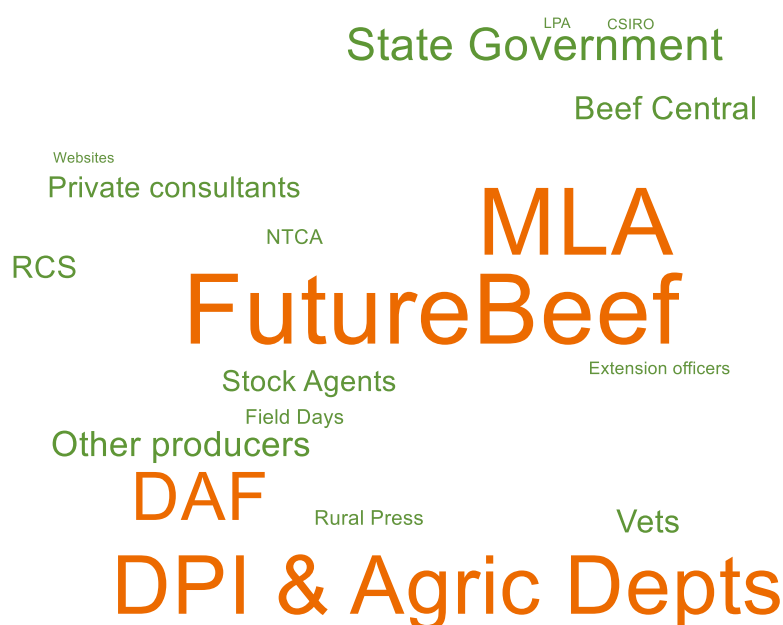


Figure 3. Word cloud for the 18 most mentioned sources for reliable and relevant information.

The word cloud in Figure 3 indicates the main sources of information that were considered reliable and relevant with the size of the text reflective of the number of mentions recorded in the survey. FutureBeef, MLA and the state departments (including DAF and DPI) were all identified as key sources of reliable and relevant information. Of note Rural Press, extension officers and field days were mentioned less often than expected.

When asked why respondents nominated those sources, the recurring themes were:

- Up-to-date, relevant, practical information.
- Local knowledge and hands-on experience. Learning from other producers.
- Backed by research. Scientifically validated information. Delivered by those who did the research.
- Credibility.
- Good topics. Well summarised.

Table 5 lists the most mentioned sources and how many times they were mentioned. Typical comments (*‘quotes’*) from the supplied responses are included to support the themes.

Clearly FutureBeef and MLA are highly valued, and they dominate the identified sources of information. The following figure (Figure 4) shows the number of mentions of FutureBeef, MLA or both FutureBeef and MLA by survey respondents against each of the topics associated with their reason for nominating that organisation as a reliable and relevant source of information. Respondents were not asked to provide their reasons separately for each organisation. In most cases, respondents who recorded more than one organisation did not specify reasons against individual organisations.

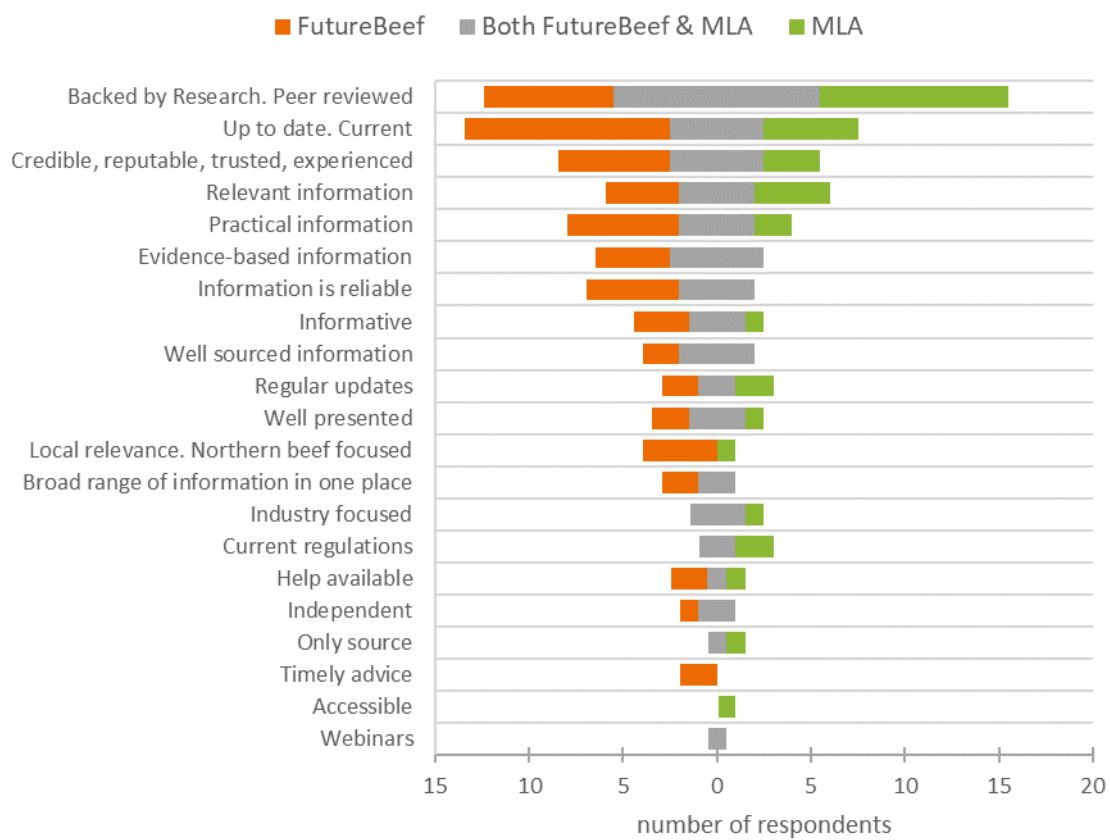


Figure 4. Number of survey respondents grouped by the topics they mentioned when asked why they nominated FutureBeef, MLA or both FutureBeef and MLA as reliable and relevant sources of information.

The quality, practicality and ground truthing of information are common themes of what constitutes reliability and relevance. There is potentially some overlap between state departments, QDAF and FutureBeef as respondents indicated that in many cases, they were the same or similar people delivering content.

Table 5. The number of mentions and the commentary provided from respondents when asked ‘what are their reliable and relevant sources of information for the northern beef industry’.

Source	Mentions	Illustrative quotes ⁵
FutureBeef	45	<p><i>‘Credibility, understanding of and experience in the pastoral industry.’</i></p> <p><i>‘Local knowledge. North Australian beef industry relevance.’</i></p> <p><i>‘We rely on ... FutureBeef for the information sessions and newsletters.’</i></p> <p><i>‘Always informative.’</i></p> <p><i>‘... because they have access to up-to-date info.’</i></p> <p><i>‘Factual, links to official documentation.’</i></p> <p><i>‘Because they are up to date and provide scientifically validated information.’</i></p> <p><i>‘...reliable useful information.’</i></p> <p><i>‘FutureBeef - well informed and extremely well-educated staff who know what they are talking about. Also, evidence-based practice.’</i></p> <p><i>‘They are either government or producer groups with controls over quality of content.’</i></p> <p><i>‘Varied, subject specific, well written and quote sources.’</i></p> <p><i>‘Focused on the producer at local level.’</i></p> <p><i>‘Combine science, practice and field delivery/trialling/experience, and work in the northern rangelands.’</i></p> <p><i>‘Local knowledge. North Australian beef industry relevance.’</i></p> <p><i>‘The information they provide covers many different demographics as trials are spread through these.’</i></p> <p><i>‘Ever evolving with latest research. Been operational for many years. Take in the whole business aspects.’</i></p> <p><i>‘Ever evolving with latest research. Been operational for many years. Take in the whole business aspects.’</i></p> <p><i>‘Up to date information shared it usable formats - meetings, workshops, webinars and sharing information sheets, articles etc.’</i></p> <p><i>‘Tailored advice that is timely.’</i></p> <p><i>‘Information can be relevant to our Grazing systems in Northern Australia.’</i></p> <p><i>‘Always relevant information and help available on any topic and subject.’</i></p> <p><i>‘They are all located in the same place and updated regularly.’</i></p>

⁵ Throughout this report, quotes from survey responses (shown in italics) are included as written by the respondent with only minor editing for grammar, spelling or punctuation.

Source	Mentions	Illustrative quotes ⁵
FutureBeef and MLA ⁶	36	<p><i>'Good topics. Well summarised. Generally backed by research.'</i></p> <p><i>'Informative, ... provide educational webinars and good principles for better management.'</i></p> <p><i>'Up to date & relevant to the industry & have access to good reliable information.'</i></p> <p><i>'Credible and up-to-date.'</i></p> <p><i>'Knowledge and experience, ability to clearly communicate information.'</i></p> <p><i>'Research backed.'</i></p> <p><i>'Because they come from reliable and reputable sources.'</i></p> <p><i>'They are tested and ground truthed and continually updated.'</i></p> <p><i>'Seem to be accurate and contain detail rather than just simply broad ideas. Calculators and feed tables also!'</i></p> <p><i>'Gov organisation; industry organisation; provides information to support findings of investigation.'</i></p> <p><i>'These organisations work closely with the producer and that makes a huge difference when using the information to present to producers.'</i></p> <p><i>'I feel they are credible and reputable; they are updated regularly, and both conduct a lot of research.'</i></p> <p><i>'Informative, up to date info with prices/markets, welfare issues, provide educational webinars and good principles for better management.'</i></p> <p><i>'They are up to date and informative with the latest news and regulations.'</i></p> <p><i>'They are usually straight forward and easy to read.'</i></p> <p><i>'Knowledge and experience, ability to clearly communicate information.'</i></p> <p><i>'Broad range of information available, set up to service the industry, their job depends on it.'</i></p> <p><i>'Generally independent and have the industry's best interests in mind.'</i></p>
MLA	39	<p><i>'Practical information backed by years of on-ground practice.'</i></p> <p><i>'Science based, reputable, regionally relevant.'</i></p> <p><i>'Extensive research backing & good people.'</i></p> <p><i>'More rigorous research and subject to review.'</i></p> <p><i>'Peer reviewed, scientifically proven.'</i></p> <p><i>'Research based, contributions from individuals and organisations with substantial experience.'</i></p> <p><i>'Well written informative literature, field days, networking.'</i></p> <p><i>'Up to date, all relevant to the cattle industry.'</i></p>

⁶ The quotes in this row were made by survey respondents who nominated both FutureBeef and MLA (and in some cases other organisations) as reliable and relevant sources but with no indication if the reason referred to a specific organisation.

Source	Mentions	Illustrative quotes ⁵
		<p><i>'Relevant, aware of regulations as well as economic impacts of practices. Confidence that industry need to have a suitable approach.'</i></p> <p><i>'Up to date information, relevant and funded mostly by producer levies.'</i></p> <p><i>'They are the only sources we use and are aware of.'</i></p> <p><i>'Built up trust and proven performance of members that we liaise with.'</i></p> <p><i>'Phone call accessible.'</i></p> <p><i>'Easy to access at most times.'</i></p> <p><i>'Long term investment in industry, skin in the game.'</i></p> <p><i>'Up to date and active.'</i></p>
DPI and Agric Depts	58	<p><i>'Well written informative literature, field days, networking.'</i></p> <p><i>'Peer reviewed and based on facts.'</i></p>
DAF (QDAF)	41	<p><i>'Because they are completed by those that are doing direct research within the specific field that these resources are developed for.'</i></p>
State Government	20	<p><i>'They hold good field days and provide practical information.'</i></p>
Other producers	13	<p><i>'Hands on experience, and in a group situation, you get a variety of experiences of what has worked or not worked, or how they prefer to do things for reasons that you might not have thought of.'</i></p> <p><i>'Producers who consistently produce good results are obviously doing something right.'</i></p>
Beef Central	11	<p><i>'Current.'</i></p> <p><i>'It gives you information on latest develops and trends which I can investigate further.'</i></p>
Vets	11	<p><i>'Local knowledge relevant to the local area as well as industry best practice.'</i></p>
RCS	10	<p><i>'Up to date with what is actually happening on the ground.'</i></p>
Private consultants	9	<p><i>'They are science and data-based sources.'</i></p> <p><i>'Tailored advice that is timely.'</i></p> <p><i>'Generally independent and have the industry's best interests in mind.'</i></p> <p><i>'The private providers have to be relevant and effective, or they don't survive. Many have a Department background where they were able to build their initial skills.'</i></p>
Stock Agents	9	<p><i>'Have vast experience.'</i></p> <p><i>'Local knowledge relevant to the local area as well as industry best practice.'</i></p>
NTCA	5	<p><i>'Producer group with control over quality of content.'</i></p>
Field Days	5	<p><i>'Human interaction leads to adoption'</i></p>
Rural Press	5	

Source	Mentions	Illustrative quotes ⁵
Extension officers	4	
CSIRO	3	
LPA	3	
Websites	3	

AWARENESS OF FUTUREBEEF ONLINE COMMUNICATION TOOLS

As described earlier in this report (see page 19), segmentation based on role in the beef industry (i.e. Producer/Pastoralist vs Service provider) provided significantly different responses when all ratings were pooled.

As a result, the following series of tables addressing the awareness questions have been constructed to illustrate the overall aggregated response and the significant differences between producer/pastoralists and service providers.

Overall awareness of FutureBeef was high, with an average rating of 8.3 on a scale of not at all aware (1) to very aware (10). Less than 10% of the survey respondents gave a rating of 5 or less. Service providers tended to be more aware than producer/pastoralists, with a higher proportion indicating that they were very aware.

Table 6. Awareness of FutureBeef on a scale of 1 (not at all aware) to 10 (very aware). Number of observations by rating.

FutureBeef	Rating	Sample
All respondents	8.3	202
Producers/pastoralists	8.1	142
Service providers	8.6	60



The responses to the awareness of investment partners (see Table 7) in FutureBeef was mixed. Both MLA and QDAF received strong awareness ratings with 31% and 33% respectively being very aware. Overall average ratings were high at 7.7 and 7.5. Only 2% and 4% were not at all aware respectively and less than 10% had a rating of 4 or less.

In contrast the awareness of the involvement of NT DITT and DPIRD WA was low in part due to the much greater involvement of Queensland based respondents, both producers and service providers, in the survey. Both state organisations had approximately 20% of the respondents being not at all aware of their involvement. With only 10% being very aware of those organisations' involvement in FutureBeef. The average ratings reflected this lower awareness with NT DITT receiving an overall rating of 5.0, with service providers (6.2) being more aware than producers/pastoralists. Both producers (5.6) and service providers (7.0) based in the Northern Territory had a higher awareness of NT DITT being an investment partner in FutureBeef. The higher rating from public service providers is to be expected given they should be aware of their own organisation's involvement.

Overall awareness of the DIRPD WA involvement in FutureBeef was disappointingly low. Again, there was poor awareness from producers and pastoralists with a significant percentage being not at all aware. Service providers were more aware of DPIRD WA as a partner in FutureBeef which is not surprising. As was observed for NT DITT, survey respondents based in WA, both producers (7.1) and service providers (6.3), gave higher average ratings for their awareness of the involvement of DPIRD WA than that given by all survey respondents.

Table 7. Awareness of the investment partners in FutureBeef on a scale from 1 (not at all aware) to 10 (very aware). Number of observations by rating.

Table 7a. Meat and Livestock Australia (MLA).

MLA	Rating	Sample
All respondents	7.7	200
Producers/pastoralists	7.6	140
Service providers	8.0	60

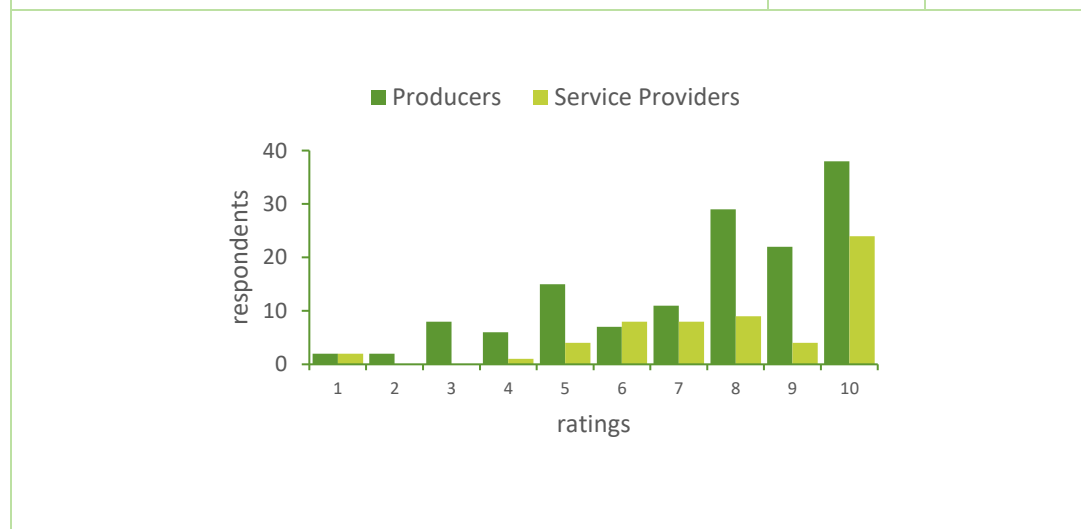


Table 7b. Queensland Department of Agriculture and Fisheries (QDAF). Numbers in brackets refer to Queensland respondents.

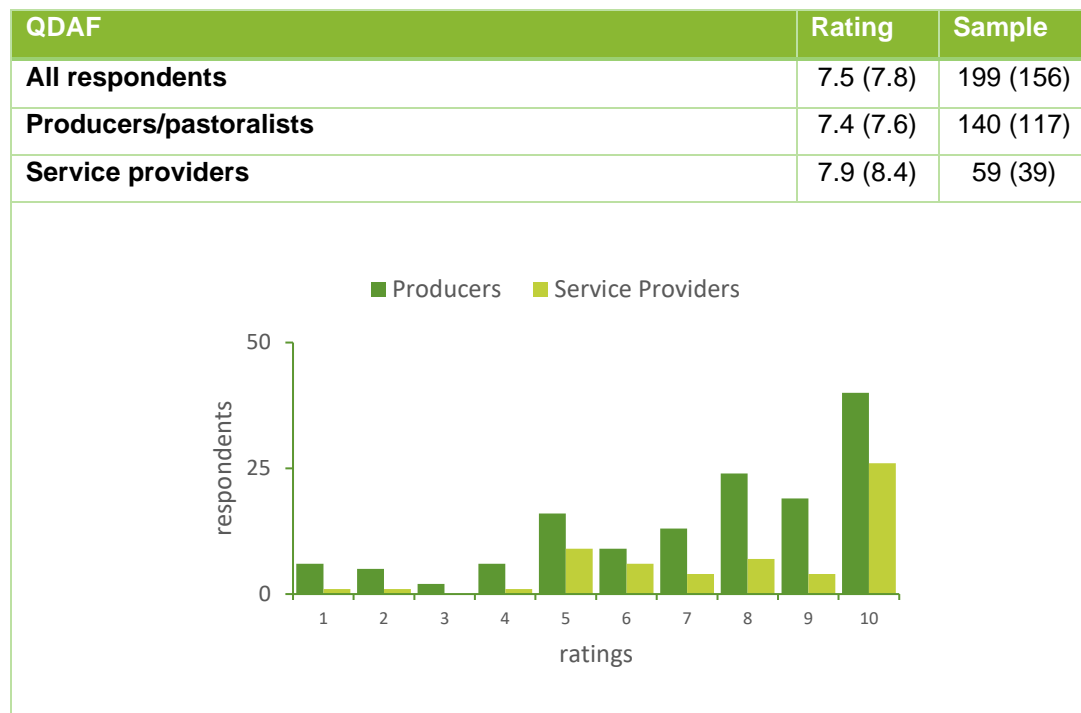


Table 7c. NT Department of Industry, Tourism and Trade (NT DITT). Numbers in brackets refer to Northern Territory respondents.

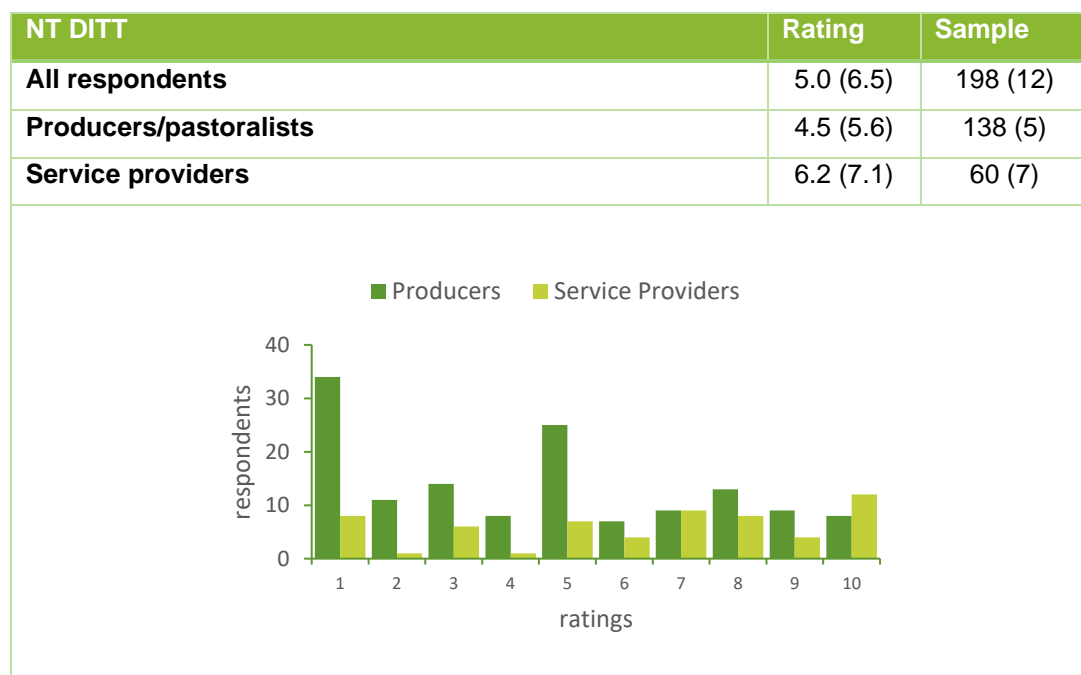
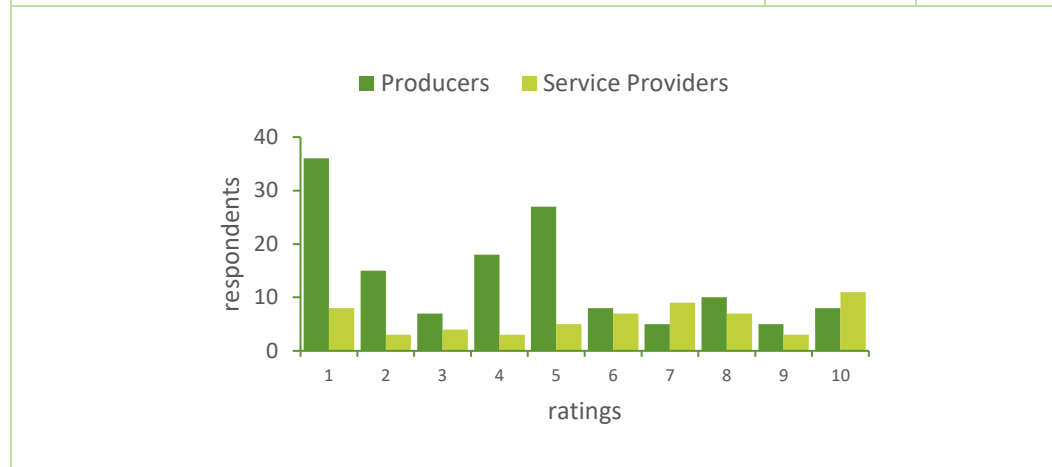


Table 7d. Department of Primary Industries and Regional Development Western Australia (DPIRD WA). Numbers in brackets refer to Western Australian respondents.

DPIRD WA	Rating	Sample
All respondents	4.7 (6.8)	199 (15)
Producers/pastoralists	4.2 (7.1)	139 (9)
Service providers	6.0 (6.3)	60 (6)



ASSESSMENT OF FUTUREBEEF ONLINE COMMUNICATION TOOLS

FutureBeef website

The use of the FutureBeef website was very high, particularly with service providers (100%; see Table 8). Of interest, 11% of producers either did not find the website useful or did not access the website. Respondents that used the website rated the site as useful (7.7) on a scale of 1 (not at all useful) to 10 (very useful), with no apparent differences between producers/pastoralists and service providers.

Table 8. Use of the FutureBeef website by producers and service providers and rating of the FutureBeef website on a scale from 1 (not at all useful) to 10 (very useful) by those that use it.

Table 8a. Use of the FutureBeef website.⁷

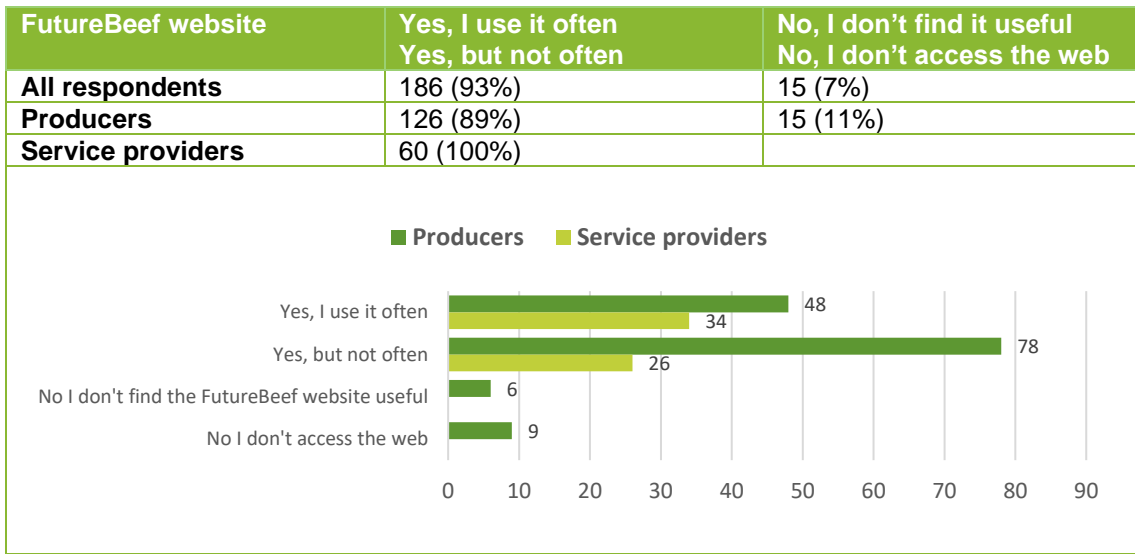


Table 8b. Average rating of the FutureBeef website by users. Number of observations by rating.



The following figure (Figure 5) summarises into themes the comments provided by respondents to explain the rating they gave the FutureBeef website. The higher rating, generally more positive responses are shown in descending order on the left of the diagram. Key themes include independence, comprehensiveness and ease of use. Comments related to barriers and suggestions for improvement generally received lower ratings and are shown on the right side in the diagram. Difficulty in

⁷ A full expansion of this table is shown in Appendix 4, Table 45.

navigation and content management are key barriers to website usefulness. The average ratings and key examples for each theme are shown in Table 9.

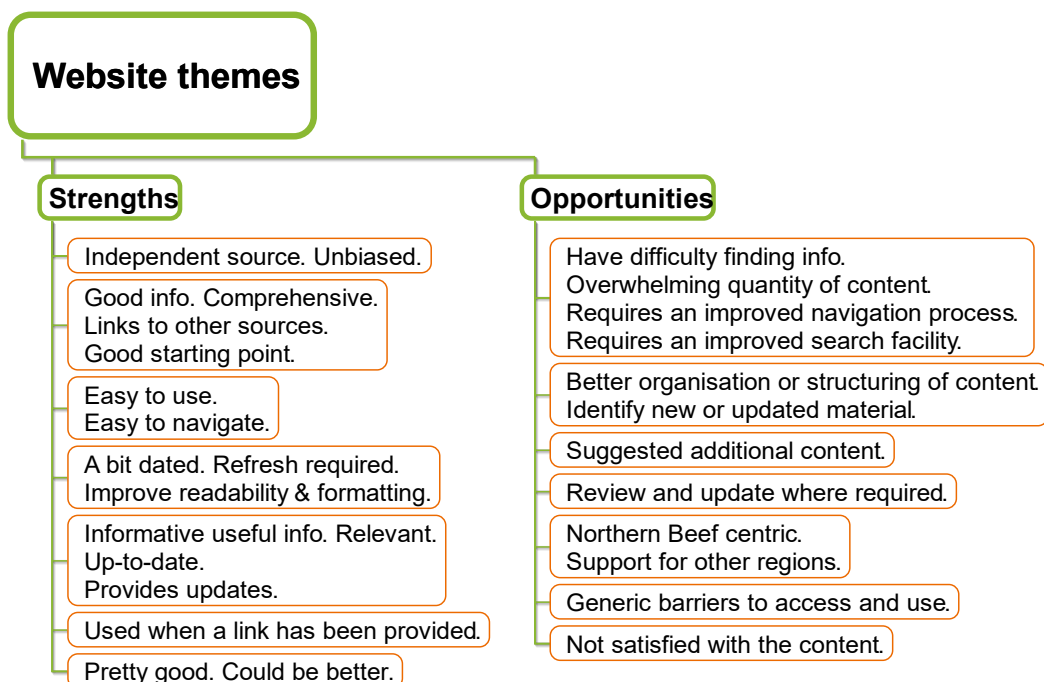


Figure 5. Key themes summarising the reasons given for the rating of the FutureBeef website.

Table 9. Themes identified from the explanations provided by respondents when explaining the reasons for the ratings they assigned to the FutureBeef website. The 'rating' shown is the average of the ratings for all responses assigned to the theme and the number of responses is in brackets ().

Theme	Rating (count)	Key quotes
Independent source. Unbiased	10.0 (4)	<i>'FutureBeef info seems unbiased and informative.'</i> <i>'Information is relevant and impartial.'</i> <i>'Found what I was seeking from a trusted resource.'</i>
Good info. Comprehensive. Good starting point with links to other sources.	8.9 (26)	<i>'Comprehensive and has various places to go - events, document library, news.'</i> <i>'I believe if I needed technical info, I would find it on FutureBeef.'</i> <i>'If what I am looking for is not on your site, I can search or link from FutureBeef to a suitable reference.'</i> <i>'I can always find what information I need or have a starting point to find it elsewhere.'</i>

Theme	Rating (count)	Key quotes
		<p><i>'Covers a wide variety of topics which can suit all levels of industry.'</i></p> <p><i>'Complete and comprehensive hub for all sector specific information of interest.'</i></p> <p><i>'Lots of excellent information available on important topics as well as current and past research projects and their results. Links to project reports and recorded presentations on YouTube are very useful.'</i></p>
Easy to use. Easy to navigate.	8.5 (22)	<p><i>'It seems easy to get around and gives useful information.'</i></p> <p><i>'Easy to access and navigate. Up-to-date and very applicable information.'</i></p> <p><i>'It well set out and easy to follow.'</i></p>
A bit dated. Refresh required. Improve readability and formatting.	8.5 (2)	<p><i>'The general look is a bit outdated. I use the knowledge centre and it would be good if it was broken up into sections more. e.g. Pasture management, Animal health etc.'</i></p> <p><i>'Sometimes the formatting on the site can make it hard to read.'</i></p>
Informative useful info. Relevant. Up to date. Provides updates.	8.4 (42)	<p><i>'Timely, relevant, applicable.'</i></p> <p><i>'Mostly current and relevant.'</i></p> <p><i>'I use it a fair bit and also the YouTube channels - the information is relevant to what we do every day.'</i></p> <p><i>'Clear, titled subjects so no looking through non relevant parts. Up to date information. Take out what you need.'</i></p> <p><i>'Easy to access and navigate. Up-to-date and very applicable information.'</i></p> <p><i>'Relevant info all in one place.'</i></p> <p><i>'We wanted to start backgrounding, FutureBeef was almost a one stop shop.'</i></p>
Used when a link has been provided.	8.0 (5)	<p><i>'I read the emails when they are sent to me and find the information very informative but unfortunately don't make the time to go looking for information on the website.'</i></p> <p><i>'I receive the newsletter and search relevant information as associated to my industry.'</i></p>

Theme	Rating (count)	Key quotes
		<p><i>'Lots of excellent information available on important topics as well as current and past research projects and their results. Links to project reports and recorded presentations on YouTube are very useful.'</i></p> <p><i>'I don't use it often but mainly access articles via links on email notification or the magazine.'</i></p>
Pretty good. Could be better.	7.6 (5)	<i>'It is functional, without being innovative or exciting.'</i>
Have difficulty finding info. Overwhelming quantity of content. Requires an improved navigation process. Requires an improved search facility.	7.3 (25)	<p><i>'Most stuff is there. Sometimes navigation has been a challenge.'</i></p> <p><i>'I think it's very useful though could be a little bit more user friendly with its searchability.'</i></p> <p><i>'Sometimes difficult to use the search function and find resources I know are there.'</i></p> <p><i>'I think sometimes it can be difficult to find the right information in the knowledge centre, but it is there if you spend the time to track it down.'</i></p> <p><i>'It is not the easiest to navigate. There is so much information, it can be overwhelming. The advanced filters are good though! Just takes a bit of sorting to get what you want.'</i></p> <p><i>'While it is an excellent resource, I find it difficult to navigate even if I know what I am looking for. Often 'googling' FutureBeef/what I actually want to find is easier than searching the FutureBeef site alone.'</i></p>
Better organisation or structuring of content. Identify new or updated material.	7.0 (3)	<i>'Group information into themes and sub themes i.e. Animal production > Breeder management. Make searching on a topic easier. For example, FutureBeef has a very good Phosphorus page but it's hard to find and when you search using Phosphorus it brings a up a lot of information and you have to find the Phosphorus page.'</i>
Suggested additional content.	6.7 (6)	<i>'Difficult to ascertain what has recently been published (case studies, reports, etc) and what's old - having publish dates'</i>

Theme	Rating (count)	Key quotes
		<p>on Knowledge Centre pages would easily solve this.'</p> <p>'Good but would still like more calculators, feed tables etc.'</p>
Review and update where required.	6.0 (2)	<i>'Needs updating. All the relevant information is there but it could be a bit more user friendly. Also, if I am following dieback, then I should get an email with a link if new information/article is available on the FutureBeef website.'</i>
Northern Beef centric. Support for other regions.	6.0 (2)	<p><i>'Broaden info for more southern Qld operators.'</i></p> <p><i>'I can get more out of US and society sites. I am interested in production and flavour, most importantly flavour. No flavour, no market. I do not produce a commodity product.'</i></p> <p><i>'... it is very northern centric i.e. north of Rocky and does not deal with the Downs or South Burnett.'</i></p> <p><i>'Make it broader/relevant so other states are included.'</i></p>
Generic barriers to access and use.	4.4 (5)	<p><i>'I'm not real computer literate.'</i></p> <p><i>'Not always easy to access, poor internet.'</i></p> <p><i>'Not aware of the information.'</i></p> <p><i>'Do not use the website much as I do not know its full function. More information about what the website does for the beef industry.'</i></p>
Not satisfied with the content.	4.3 (4)	<p><i>'Content is not always practical.'</i></p> <p><i>'Most stuff is not helpful. Wrong area.'</i></p> <p><i>'Some of the content is often not backed up by current research or industry practice and so seems to be more personal views or findings rather than proven data.'</i></p>

Recommendation 1. That the FutureBeef team consider a technical review of the website to ensure all information and advice is consistent with current best practice.

Survey respondents suggested several additional improvements or reinforced already identified opportunities. The topics most often mentioned referred to improving search and navigation, and better content organisation by topic. These suggestions along with other ideas are shown in Table 10.

Table 10. Suggested improvements to the FutureBeef website.

Topic	Suggested improvements
Improved search and navigation	<p><i>'Request for a better search facility.'</i></p> <p><i>'It can be difficult to find what you are looking for without entering the exact title of the page or report/project.'</i></p> <p><i>'The suggested topics that come up on the right-hand side when you are viewing a page seem completely unrelated to the topic you are currently viewing.'</i></p> <p><i>'Navigation is a little cumbersome.'</i></p> <p><i>'Better search facility. I am better off googling e.g. grasshopper case study than trying to find it with the FutureBeef search bar.'</i></p>
Organisation by topic	<p><i>'Split up the descriptions - Clearer focus on when the work was done/report was published (sort by date? Most recent?) - Split up tools/services into relevant sections.'</i></p> <p><i>'I use the knowledge centre and it would be good if it were broken up into more sections e.g. Pasture management, Animal health etc.'</i></p> <p><i>'Events section filtered for regions.'</i></p>
Calendar	<p><i>'Calendar is a pain.'</i></p> <p><i>'Calendar is a little clunky.'</i></p>
Flag new content	<p><i>'Needs updating. All the relevant information is there but it could be a bit more user friendly. Also, if I'm following dieback, then I should get an email with a link if new information or an article is available on the FutureBeef website.'</i></p> <p><i>'Tailoring of alerts depending on parameters such as location, type of operation, topics, etc'</i></p>
New content	<p><i>'More information on grants and government funding.'</i></p> <p><i>'Publishing or allowing the publishing of private research that has been supervised properly by a recognised body.'</i></p> <p><i>'Body condition score photos.'</i></p> <p><i>'Regional updates of conditions and markets.'</i></p> <p><i>'Links to industry bodies supporting FutureBeef.'</i></p> <p><i>'More details on references and resources on topics and full contact details of authors etc.'</i></p> <p><i>'More direct links to the scientific trial data in the different articles/subjects.'</i></p>

Topic	Suggested improvements
	<p><i>'Some more [information for] smaller holdings and how to improve profitability and become more efficient.'</i></p> <p><i>'Easy digestible videos, more links to podcasts, fact sheets, testimonials from real producers. See the Farm Table website.'</i></p> <p><i>'Broaden info for more southern Qld operators.'</i> <i>'Make it for all Qld.'</i> <i>'Deal with issues for the southern end of Qld.'</i></p> <p><i>'Include some printable fact sheets on nutrition and calculations'</i></p>
FutureBeef app	<i>'FutureBeef should do an app for the younger generation.'</i>
Delivery	<p><i>'Make articles also available as pdf downloads.'</i></p> <p><i>'More mobile friendly format.'</i></p>
Technical, quality	<p><i>'More external review of documents to ensure they are as technically correct as they could be.'</i></p> <p><i>'[improve] accuracy and conciseness.'</i></p>

Recommendation 2. That the FutureBeef team consider options to improve navigation of the FutureBeef website including use of the search facility and possible reorganising the content by the topics important to users.

FutureBeef eBulletin

Most respondents indicated that they actively read or scan the FutureBeef eBulletin (newsletter) with a slightly higher read rate amongst service providers when compared to producers/pastoralists (93 vs 89% respectively). Of note approximately 10% of the respondents indicated that they did not read or did not receive the eBulletin (see Table 11). This is surprising given one of the main forms of contact with this survey was via the eBulletin, suggesting that there may be some confusion in what respondents identify as the eBulletin.

On a scale of 1 (not at all useful) to 10 (very useful), respondents that had read the eBulletin rated that tool highly, with an average rating of 8.2. There was no apparent difference between producers/pastoralists and service providers.

Table 11. Readership of the FutureBeef eBulletin by producers and service providers and rating of the FutureBeef eBulletin on a scale from 1 (not at all useful) to 10 (very useful) by those that receive it.

Table 11a. Proportion of respondents that read the FutureBeef eBulletin.⁸

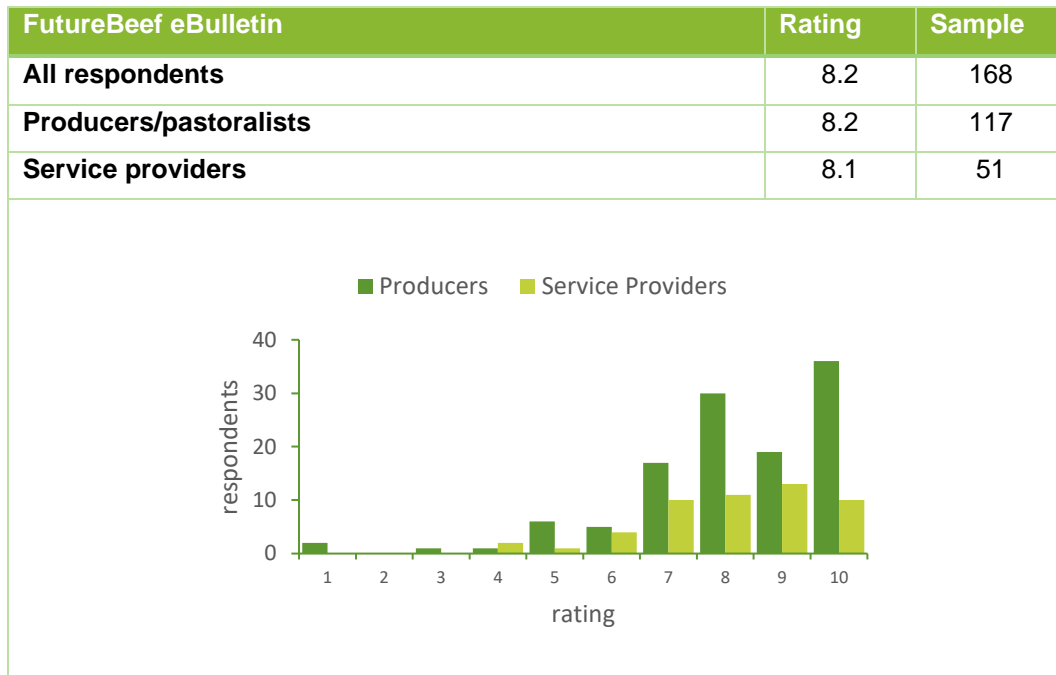
FutureBeef eBulletin	<ul style="list-style-type: none"> • Yes, I actively read articles and follow links • Yes, I scan articles of interest 	<ul style="list-style-type: none"> • No, I do not read the eBulletin • No, I don't receive the eBulletin
All respondents	179 (90%)	19 (10%)
Producers/pastoralists	125 (89%)	15 (11%)
Service providers	54 (93%)	4 (7%)

The chart displays the number of respondents for each category. The x-axis represents the number of respondents, ranging from 0 to 80. The y-axis lists four response categories. For each category, there are two bars: a dark green bar for Producers and a light green bar for Service providers. The exact count for each bar is labeled at the end of the bar.

Response Category	Producers	Service providers
Yes, I actively read articles and follow links	72	27
Yes, I scan articles of interest	53	27
No, I don't read the eBulletin	7	2
No, I do not receive the eBulletin	8	2

⁸ A full expansion of this table is shown in Appendix 4, Table 46.

Table 11b. Rating of FutureBeef eBulletin. Number of observations by rating.



The key themes that summarise the comments provided by respondents to explain the rating they gave the FutureBeef eBulletin are shown in (Figure 6). New information, ease of use and practical actions were the higher rating, generally more positive responses, as shown in descending order on the left of the diagram. Content that is neither useful nor relevant appears to be the most common negative or barrier to the eBulletin usefulness. The average ratings and key examples for each theme are shown in Table 12.



Figure 6. Key themes summarising the reasons given for the rating of the FutureBeef eBulletin by readers.

Table 12. Themes identified from the explanations of the ratings assigned to the FutureBeef eBulletin. The 'rating' shown is the average of the ratings for all responses assigned to the theme and the number of responses is in brackets ().

Theme	Rating (count)	Key quotes
Keeps me up to date. New information. Alerts to what is happening.	9.4 (29)	<p>'Good overview. Keeps me up to speed with industry information. I only need to click through to the link I'm interested in.'</p> <p>'Good updates on what is happening.'</p> <p>'It gives timely advice; short amount of reading keeps you up to date.'</p> <p>'Highlights new information.'</p> <p>'Useful, up to date on current issues.'</p> <p>'It highlights current issues and showcases current research and recommendations.'</p>
Prompt to action. Timely.	9.4 (8)	<p>'As well as providing great information - it is also a reminder to review progress on some things we are doing.'</p> <p>'Pretty good summary of articles, and normally timely.'</p> <p>'Spot on seasonal and new info to jog the memory and [trigger] the necessary actions.'</p>

Theme	Rating (count)	Key quotes
		<i>'Timely relevant information in very readable format.'</i>
Look forward to receiving it. Really interesting. Enjoy reading it.	9.3 (8)	<i>'I always find something of interest in it and look forward to it.'</i> <i>'Good read with lots of information.'</i> <i>'I find the bulletins interesting and a useful source of relevant information.'</i>
Easy to use. Well set out.	9.2 (10)	<i>'Well set out with links so you can click on topics you want more information on.'</i> <i>'It's available, bite-sizable, relevant.'</i> <i>'Timely relevant information in very readable format.'</i> <i>'Good information quickly.'</i>
Always something to read and follow up. Relevant information. Useful. Practical.	8.6 (37)	<i>'Always at least one thing of interest to read and follow up on.'</i> <i>'There is a lot of useful information they send out.'</i> <i>'Gives an overview of information relevant at that time.'</i> <i>'Interesting and relevant information covering a broad range of topics in the beef industry.'</i> <i>'I get a lot of good information from this source.'</i>
Quick intro to topics. Links to further info, events.	8.4 (7)	<i>'Allows you to have a quick look at topics covered without having to go directly to the website.'</i> <i>'Always provides relevant information and links to events.'</i> <i>'The information sent has good links and varied topics.'</i>
Direct delivery to me.	8.3 (4)	<i>'Easy to access, it arrives in my inbox, I don't have to remember to look for it. Short and to the point. Relevant.'</i> <i>'I like having issues sent straight to my mailbox.'</i> <i>'Good to receive and scan through in case there are articles of interest to me.'</i>
Consistent format.	7.5 (2)	<i>'Make sure to outline the key points and nothing else - who, what, where, when and why.'</i> <i>'Layout.'</i>

Theme	Rating (count)	Key quotes
Quick skim only.	7.3 (4)	<p><i>'Good but I do tend to flick over it until I remember and have time to go back so often forget.'</i></p> <p><i>'Not always able to give it the attention I would like immediately and then fail in coming back to it.'</i></p> <p><i>'I tend to only scan not read more deeply like beef central articles.'</i></p>
Additional content. Suggestions.	6.6 (11)	<p><i>'It is really interesting information, but I wish it talks about people using all of these interesting programs and I would like to be able to click on the programs to see who is running them.'</i></p> <p><i>'Summaries of articles.'</i></p> <p><i>'Could be more tailored to users (not a one size fits all).'</i></p> <p><i>'More regular like MLA weekly updates.'</i></p> <p><i>'I think it would be interesting to have a section written by a person in the industry.'</i></p>
Content is not useful. Content not relevant to us.	6.1 (8)	<p><i>'Information is either old, repetitive, or irrelevant.'</i></p> <p><i>'We are small to medium and find it generally does not relate to us.'</i></p> <p><i>'I am interested in flavour and not necessarily in production. The industry needs to look for a future with less beef consumption but of a much higher quality. FutureBeef does not do that.'</i></p> <p><i>'More information on issues/areas outside Queensland.'</i></p> <p><i>'Some articles not useful.'</i></p> <p><i>'... too concentrated on the far north and NT.'</i></p>
Barriers.	4.8 (4)	<p><i>'Have limited ability and access to computers.'</i></p> <p><i>'If you're internet is not brilliant so many links to open to try & find good articles.'</i></p> <p><i>'... because I have an email overload - eBulletins sometimes get lost in the mix.'</i></p> <p><i>'Not the fault of FutureBeef, but we get what seems like a lot of newsletters from different ag bodies. If I'm short of time, I don't always scan them.'</i></p>

Recommendation 3. That the FutureBeef team develop a mechanism that highlights new or changed material on the website and through the eBulletins. This should be prominent so that users can easily identify when information of interest to them has been added or changed.

Several improvements were suggested, and these are summarised in Table 13. In addition to specific ideas for content, there were requests to update or modernise the style, make it easier to read on mobile devices, and expand the content to make it relevant to other regions (e.g. southern Queensland).

A suggestion worthy of further consideration was to deliver tailored, or theme based eBulletins matched to pre-defined topics of interest to the recipient. While likely challenging to implement, there is intuitive appeal to receiving an eBulletin where those items most likely to be of interest are prioritised to the front. These might include reminders of events in the receiver’s local area, and items (webinars, reports, videos) on topics of interest to the reader.

Table 13. Suggested improvements to eBulletins.

Subject	Suggested improvements
Content ideas	Financial articles, including business efficiency and profitability. Links to existing programs, programs people are using. Links to cutting edge activities from around the world. Summaries of articles. Raise awareness. More notice of and better precis of webinars and other engagement activities. Advertise the availability of this website and eBulletin at relevant events. Specific ideas Environmental rehydration of landscapes Information for cattle traders and backgrounders More agronomy articles. Market projections. Long term weather forecasts. More information on grazing trials and pastures - both drought tolerant and productive.
Format	Update layout. Modernise. Make easier to read on mobile devices. Revert to paper editions.
Style	Outline the key points and nothing else (who, what, where, when and why). Shorter and to the point. More attention grabbing.

Subject	Suggested improvements
Target audience	<p>More southern Queensland content. For example Darling Downs.</p> <p>Spread the area covered.</p> <p>Articles for specific areas.</p> <p>Tailored version – ‘Can we plug in "areas/regions of interest" or some keywords that means the eBulletin we receive is tailored?’</p> <p>More information for small producers, hobby farms.</p>
Delivery	More regular e.g. weekly.

Recommendation 4. That the FutureBeef team consider how eBulletins can be tailored to the needs of individual readers. This may be through dedicated eBulletins focussed on key themes or topics or regions.

FutureBeef feature articles in rural press publications

The proportion of respondents that had read (either often or sometimes) the FutureBeef feature articles (Northern Muster, Beef Talk and in CQ Beef) in Rural Press publications was lower than expected and ranged from 28 to 40%. A significant proportion of respondents indicated that they had not seen any of the features listed, whilst approximately 35% of respondents did not read those articles. There was no difference between the different respondent demographics (see Table 14). This lower-than-expected response could possibly reflect respondents not identifying the feature articles with the names (branding) provided.

Table 14. Proportion of respondents that have read FutureBeef feature articles in Rural Press publications.

Table 14a. Northern Muster.⁹

Northern Muster	<ul style="list-style-type: none"> • Yes (often) • Sometimes 	<ul style="list-style-type: none"> • No, I have not seen these features • No • Do not know
All respondents	53 (30%)	125 (70%)
Producers	35 (28%)	88 (72%)
Service providers	18 (33%)	37 (67%)

Response Category	Producers	Service providers
Yes (often)	13	6
Sometimes	22	12
No, I have not seen these features	34	18
No	49	17
Do not know	5	2

⁹ A full expansion of this table is shown in Appendix 4, Table 47.

Table 14b. Beef Talk.¹⁰

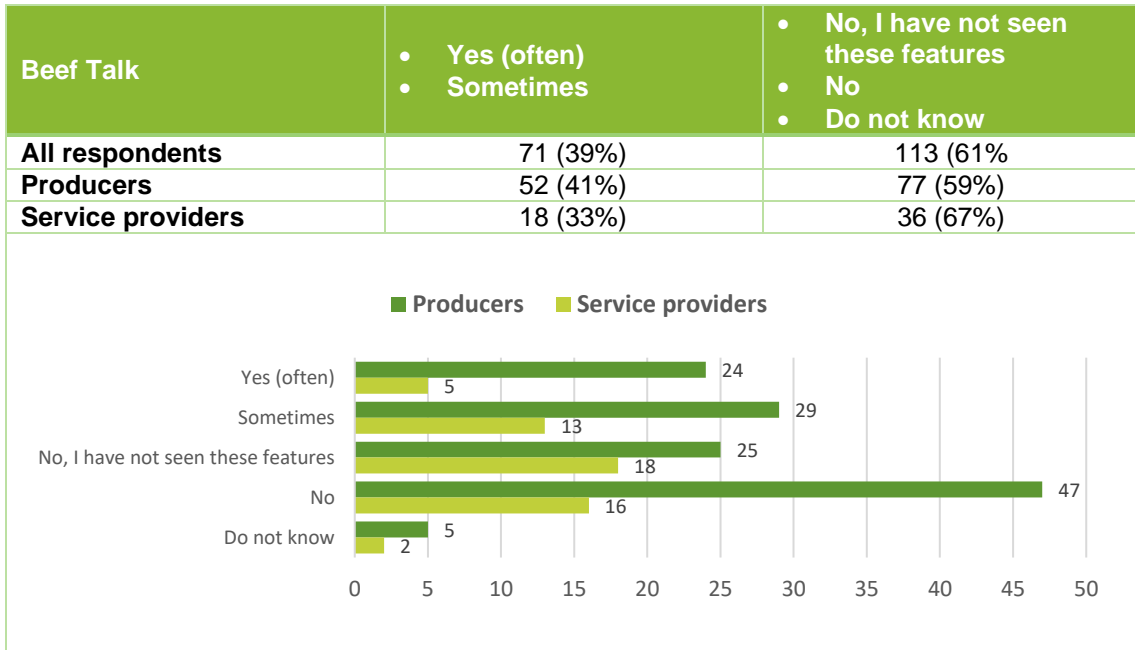
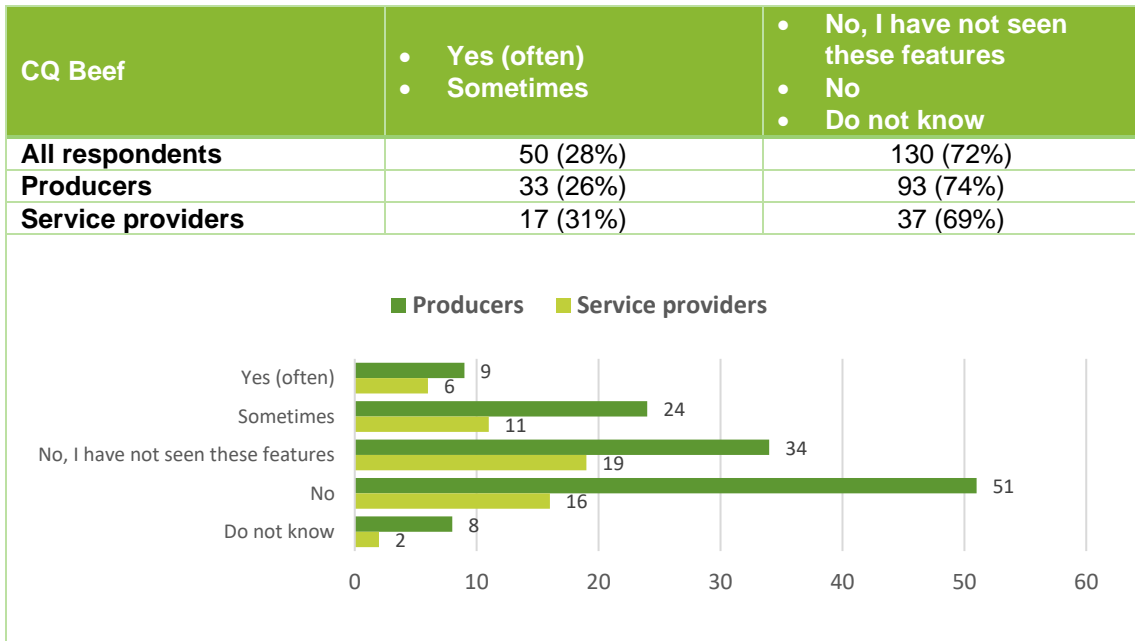


Table 14c. CQ Beef.¹¹



There was a positive distribution in ratings on a scale from 1 (not at all useful) to 10 (very useful), for those respondents that had read the FutureBeef feature articles (Table 15). Although the average rating was 6.5, less than 10% rated articles less than 5 which is a good result.

¹⁰ A full expansion of this table is shown in Appendix 4, Table 48.

¹¹ A full expansion of this table is shown in Appendix 4, Table 49.

Table 15. Average rating assigned by readers of FutureBeef features on a scale from 1 (not useful at all) to 10 (very useful). Number of observations by rating.

FutureBeef features	Rating	Sample
All respondents	6.5	116
Producers/pastoralists	6.5	81
Service providers	6.7	35



A summary of the themes that emerged from the comments provided by respondents to explain the rating they gave for FutureBeef feature articles published in rural press is shown in Figure 7. Content in a hard copy format was a strength of FutureBeef feature articles. Despite comments being restricted to people that had indicated they had read articles, there was still a surprising number of respondents that indicated they had not seen or did not receive rural press publications. Average ratings and key examples for each theme are shown in Table 16.

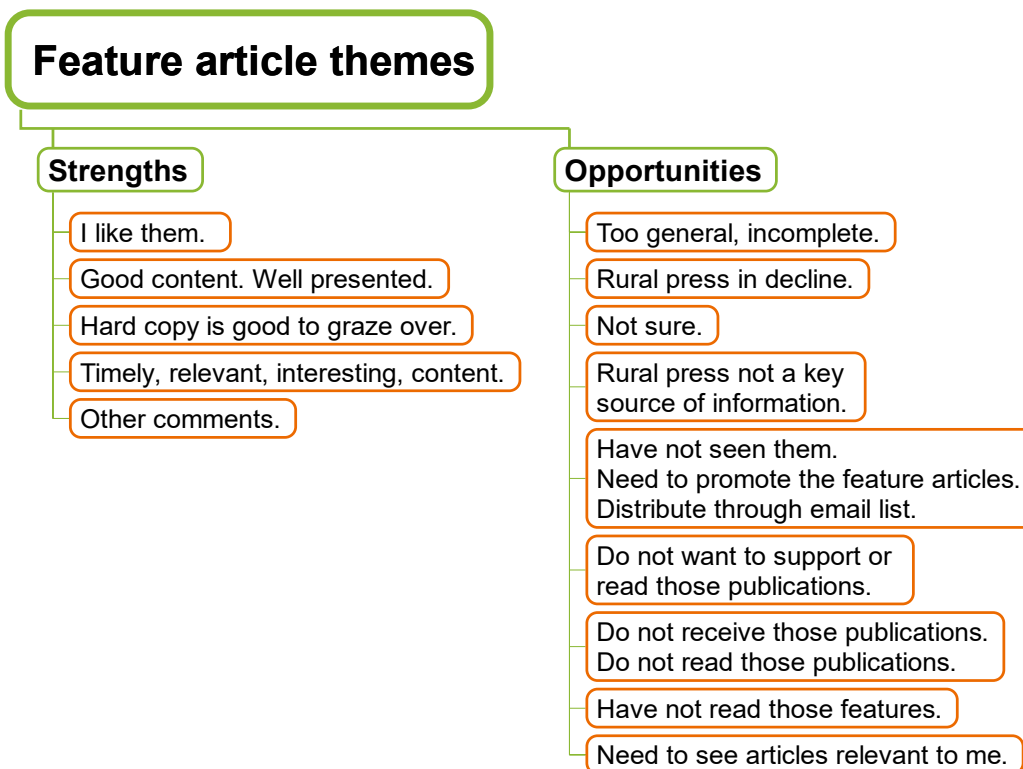


Figure 7. Key themes summarising the reasons given for the rating of the FutureBeef feature articles.

Table 16. Themes identified from the explanations provided by respondents when explaining the reasons for the ratings they assigned to the FutureBeef feature articles. The 'rating' shown is the average of the ratings for all responses assigned to the theme and number of responses is in brackets ().

Theme	Rating (count)	Key quotes
I like them	9.2 (11)	'Great way to get information.' 'Excellent. Should be more of it in these 'mainstream' publications.' 'Many different contributors and stories.' 'Informative on a range of topics.'
Good content. Well presented	9.1 (11)	'Fits those ... criteria. Digestible, relevant, timely, topical.' 'On topic and well written.' 'Timely relevant information in very readable format.'
Hard copy is good to graze over	9.0 (1)	'I regularly buy QCL and NQR so get a "hard copy" to graze over when time permits.'

Theme	Rating (count)	Key quotes
Timely, relevant, interesting content	8.3 (10)	<i>'Great way to reach a bigger audience and get the relevant information out at that time period.'</i> <i>'Informative. Pertinent and interesting. Directly relevant.'</i>
Too general, incomplete	8.0 (2)	<i>'A bit too general. Understand that the target audience is broad and difficult to target a specific topic or region.'</i> <i>'I think they often lack background information.'</i>
Rural press in decline	7.7 (5)	<i>'Having a Rural Press in the future looks like it could be an issue.'</i> <i>'Very few [rural publications] if any available. Sad that we lost rural weekly which was published in local paper [as] even that is not published anymore.'</i> <i>'I still use the web sites over printed as its more current - print is too slow.'</i> <i>'Newspapers are snail mail.'</i> <i>'No rural press here.'</i>
Not sure	5.7 (11)	<i>'Just not sure about it. [if I have read any]'</i> <i>'I don't pay attention to who produces articles. I read because the article appeals to me.'</i>
Other comments	5.5 (7)	<i>'I've seen it but that [is] all.'</i> <i>'An email link in addition would be beneficial. QCL comes and goes in a week. Sometimes I want to go back to that information and read again. By then it's in the bin.'</i>
Rural press not a key source of information	4.5 (7)	<i>'[I] use the website more often.'</i> <i>'I don't often have time to read these publications. I rely a lot more on digital info emails and social media.'</i> <i>'I don't often see a newspaper or press publications, but I notice FutureBeef branded features when I do.'</i> <i>'I don't tend to read rural press - more email.'</i>
Have not seen them. Need to promote the feature articles. Distribute through email list	3.4 (13)	<i>'I haven't seen them. Never seen it.'</i> <i>'Did not know that this was available.'</i> <i>'They are informative when seen.'</i>

Theme	Rating (count)	Key quotes
		<i>'Unaware of these. Rarely consult printed press. Look online for information as I need it.'</i>
Do not receive those publications. Do not read those publications	3.0 (19)	<i>'I don't purchase these publications.'</i> <i>'I have not read any of the Rural Press publications.'</i> <i>'No longer read printed info.'</i> <i>'Those publications aren't widely available outside Queensland.'</i> <i>'Don't buy them. Just overpriced catalogues.'</i> <i>'Don't read QCL rely on publications like FutureBeef.'</i>
Have not read those features	~ ¹² (11)	<i>'Haven't read them. I read QCL, The Land and Weekly Times.'</i> <i>'Probably don't view them enough to comment.'</i> <i>'I don't read the paper - hubby does and says he only glances at them.'</i>
Need to see articles relevant to me	~ (3)	<i>'Depends upon the type of article story or information.'</i> <i>'More WA articles'</i>
Do not want to support or read those publications	~ (3)	<i>'Don't read the Country Life much at all, got tired of the right-wing self-righteousness. There are some producers that are not a credit to the industry.'</i> <i>'Don't read newspapers as they are full of useless gossip.'</i>

Further suggestions for the content of rural press feature articles and other improvements suggested are shown in Table 17. As a number of readers of these feature articles rated them highly, and that rural press is not available to all (at least not in a timely manner), consideration should be given to increasing circulation through other channels.

¹² No ratings provided.

Table 17. Suggested improvements for rural press feature articles.

Subject	Suggestions
Content	<p><i>‘Seasonally relevant topics. Address problems occurring in the industry – drought, flood, pests.’</i></p> <p><i>‘Regenerative Agriculture.’</i></p> <p><i>‘Financial education for grazing industry.’</i></p> <p><i>‘New and innovative land management options.’</i></p> <p><i>‘Backgrounding.’</i></p> <p><i>‘Weed control methods.’</i></p> <p><i>‘Carbon projects.’</i></p> <p><i>Case studies e.g. ‘Cattle folk profiles. Success stories.’</i></p>
Regions	<p><i>‘More information for Darling Downs.’</i></p> <p><i>‘Report on more area specific trials.’</i></p>
Format	<p><i>‘Include a summary and more images. Provide access to a B&W version that can be printed. Suitable for ‘... reading out loud to others, when tired at night and by men who refuse to put on their reading glasses.’</i></p> <p><i>‘Prefer printed edition (‘... and forget about webinar.’)</i></p>
Admin	<p><i>‘Email these articles to the general email list. Make available online.’</i></p> <p><i>‘Include more information about FutureBeef, raise awareness.’</i></p> <p><i>‘Include full contact details for authors.’</i></p> <p><i>‘Should be weekly.’</i></p>

Recommendation 5. That the FutureBeef team consider the value proposition of hard copy feature articles in Rural Press publications. Articles could be included in special editions of the eBulletin.

FutureBeef webinars

Approximately two thirds of survey respondents had accessed the live or recorded versions of FutureBeef webinars. Importantly a significant proportion did access the recorded versions for various reasons. Timing and/or internet access was the most common reason given for not accessing the live webinars. There was only a small number of respondents that were not interested in webinars. Service providers tended to access the webinars at a higher rate (see Table 18a).

Table 18. Proportion of respondents that have accessed the FutureBeef webinars and average rating assigned to FutureBeef webinars on a scale from 1 (not useful at all) to 10 (very useful).

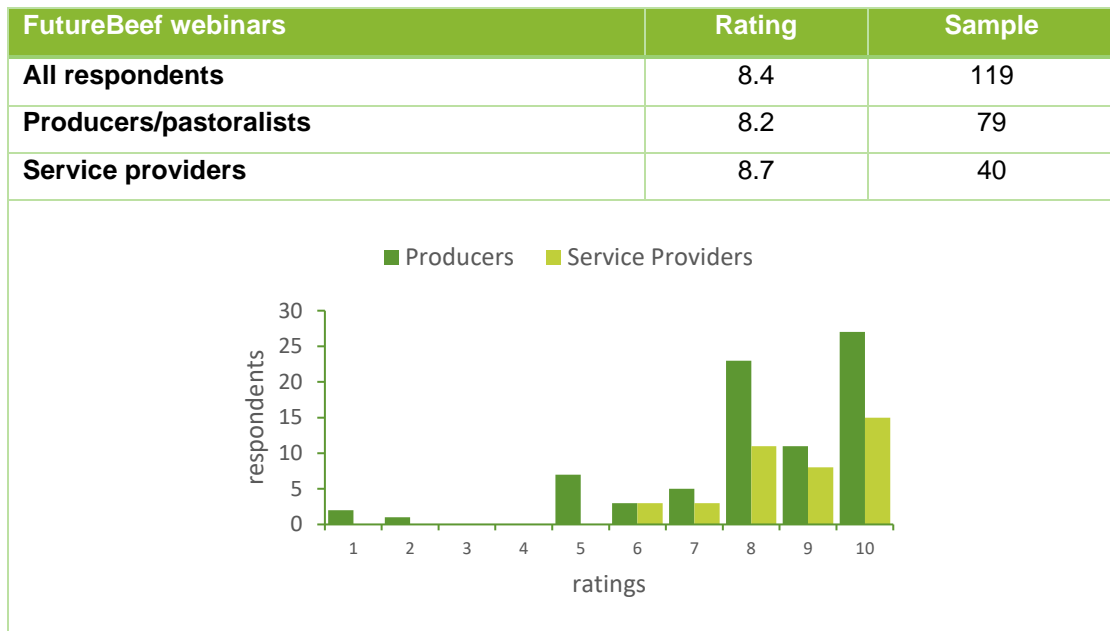
Table 18a. Proportion of respondents that access or view FutureBeef webinars.¹³

FutureBeef webinars	<ul style="list-style-type: none"> Yes, I access or view the live webinars. Yes, I access the recorded versions via the website or YouTube channel. Yes, but rarely. 	<ul style="list-style-type: none"> No, the topics have not interested me. No, the timing or my internet access prevents me from using this product. No, did not know about them. No (other reasons).
All respondents	124 (67%)	62 (33%)
Producers	81 (62%)	50 (38%)
Service providers	43 (78%)	12 (22%)

Reason	Producers	Service providers
Yes, I access or view the live webinars	51	26
Yes, I access the recorded versions via the website or...	29	16
Yes, but rarely	1	1
No, the topics have not interested me	6	1
No, the timing or my internet access prevents me from...	37	10
No, did not know about them	2	0
No (other reasons)	5	1

¹³ A full expansion of this table is shown in Appendix 4, Table 50.

Table 18b. Average rating assigned to FutureBeef webinars. Number of observations by rating.



The ratings on a scale from 1(not at all useful) to 10 (very useful) were consistently high for the FutureBeef webinars (Table 18b), with an average rating of 8.4 and approximately one third of respondents rated webinars as a 10. Less than 5% had a rating lower than 5. Service providers rated webinars higher than producer/pastoralists.

The following figure (Figure 8) summarises into themes the comments provided by respondents to explain the rating they gave for FutureBeef webinars. In general webinars are seen as convenient, interactive and well presented. Given the remoteness of many northern beef industry stakeholders, reducing isolation and improving access to learnings from others is a key adoption positive. There were virtually no negatives for webinars (apart from internet connectivity limitations) with the average ratings for each theme and key quotes shown in Table 19.

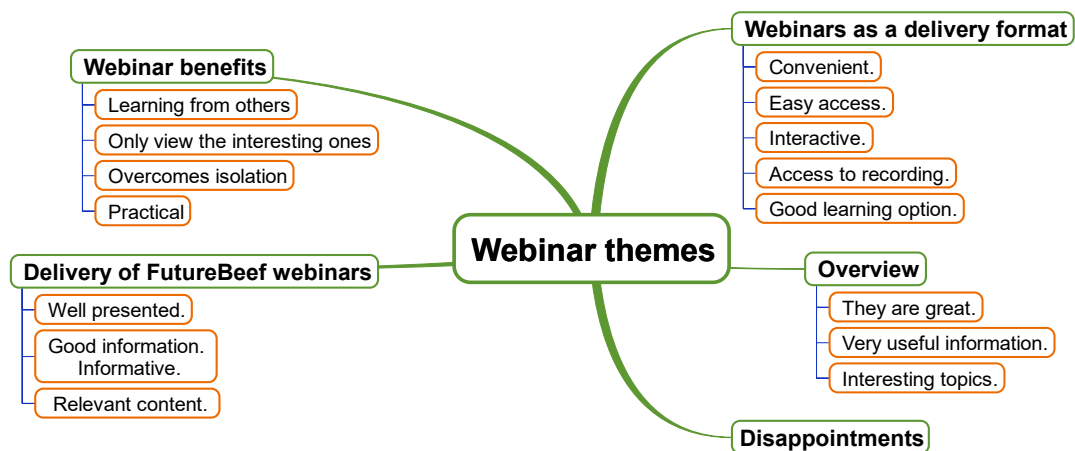


Figure 8. Key themes summarising the reasons given for the rating of FutureBeef webinars.

Table 19. Themes identified from the explanations provided by respondents when explaining the reasons for the ratings they assigned to the FutureBeef webinars. The rating shown is the average of the ratings for all responses assigned to the theme and number of responses is in brackets ().

Theme	Rating (count)	Key quotes
Webinar benefits	9.5	
• Learning from others	10.0 (2)	<i>'Love picking up new ideas and options from others in the industry.'</i>
• Only view the interesting ones	9.5 (4)	<i>'I only listen to the ones I'm interested.'</i> <i>'Good information well presented for topics I was interested in.'</i>
• Overcomes isolation	9.0 (1)	<i>'I watched ones such as grass dieback where I am worried about the issue itself and I learn more about those topics and feel less isolated.'</i>
• Practical	9.0 (1)	<i>'They are pretty hands-on even though northern based.'</i>
Delivery of FutureBeef webinars	8.9	
• Well presented	9.5 (6)	<i>'Clearly presented and relevant.'</i> <i>'Very inciteful and well run.'</i> <i>'Easy to understand and doesn't go for too long.'</i> <i>'Always well-presented and facilitated.'</i>
• Good information. Informative.	9.1 (17)	<i>'The information is relevant & trustworthy.'</i> <i>'Very well run and majority I have listened to either live or recorded have had interesting and informative speakers.'</i> <i>'Information was excellent, a huge help for me being a beginner in the industry.'</i> <i>'Good information well delivered on a wide range of topics.'</i> <i>'Good valuable information and a supporting organisation to back it up - Beef cattle husbandry officers.'</i>
• Relevant content	8.6 (16)	<i>'Organisers pick relevant topics.'</i> <i>'The topics were relevant to me.'</i> <i>'Topic was on a subject particularly relevant.'</i>
Webinars as a delivery format	8.9	
• Convenient	10.0 (2)	<i>'Saves travelling to access info.'</i> <i>'Not many workshops are held in my area. Webinars allows me to attend training.'</i>

Theme	Rating (count)	Key quotes
• Easy access	9.0 (4)	<i>'Easy to use, relevant topics, recorded so I can access later.'</i> <i>'Easy to access.'</i>
• Interactive	9.0 (1)	<i>'Easy to take out the message being portrayed. Chance to pose a question "live" with the speaker/expert.'</i>
• Access to recording	8.8 (6)	<i>'Love you can access a recording.'</i> <i>'Very useful and archived access is valuable.'</i> <i>'Well-presented and can be reviewed on the website.'</i>
• Good learning option	8.6 (8)	<i>'They are another option to assist people with learning.'</i> <i>'I think they're a great resource and extension by FutureBeef.'</i> <i>'Enjoyed, and learnt from, the few I have watched'</i>
Overview	8.6	
• They are great	9.5 (4)	<i>'Only listened to one last week and thought it was great.'</i> <i>'I love them.'</i>
• Very useful	9.0 (3)	<i>'I find these very useful.'</i>
• Interesting	7.7 (6)	<i>'Informative, interesting and engaging.'</i> <i>'The few that I have seen were very interesting.'</i>
Disappointments	6.2 (5)	<i>'Some content was not as technically correct as it should be.'</i> <i>'I am disappointed when it's someone just selling to me.'</i> <i>'Could not get the notes at the end of the session when they were very important.'</i> <i>'... they are not useful. If the topic sounds interesting and I might learn something I watch it. Only two times have I watched these. They are usually stacked with department staff and information or trial data that has been compromised and can't be taken as true and correct because of incompetence's within the trial.'</i> <i>'A bit wishy washy in terms of content validity.'</i> <i>'Not "death by power point" please.'</i>

Some additional suggestions for improving webinars are summarised in Table 20.

While webinars rated well, and many viewers appreciated the opportunity to catch up on webinars at a time of their choosing and to re-watch them, there were several comments that the webinars were delivered at an inconvenient time and that ‘access to recordings would be great.’ This indicates a need to not just advise of upcoming webinars, but also highlight that recordings of past webinars are available through the FutureBeef YouTube channel. It was also suggested that an easier way to find the webinar recordings is needed.

The suggestion of a printable summary distributed immediately after completion of the webinar would reinforce the key messages and be good extension practice.

Table 20. Suggestions for improvements to the delivery and content of webinars.

Subject	Suggestions
Awareness and access to recordings	<p>‘An easier way to find the recordings on the FutureBeef site.’</p> <p>‘Letting people know about the webinars.’</p> <p>‘Perhaps more reminders that they are happening.’</p> <p>‘Better advertising so you know they are on and what is upcoming.’</p> <p>‘Timing isn’t that good for me in the day. Access to recordings would be great.’</p>
Presentation ideas and format	<p>‘Not "death by power point" please’</p> <p>‘Actual footage of a project, in the field as back up to speaker.’</p> <p>‘Maybe an interactive panel.’</p> <p>‘Include more producers as presenters or co-presenters.’</p> <p>‘More interviews with prominent producers doing progressive things.’</p> <p>‘... get a story and real data from someone that is actually achieving something that is outstanding. Just give a different perspective, if we only pick up one thing that might help our business that someone else is doing successfully then that is a big help.’</p>
Content ideas and quality	<p>‘More business and production topics on backgrounding and trading.’</p> <p>‘Spread the area [regions] covered.’</p> <p>‘Some of the animal health information is not as technically correct as it could be.’</p> <p>‘Less surveys.’</p>
Printable summary	<p>‘Give a printable summary at end, that can be used ‘at the family table’ with dot points for talking on.’</p> <p>‘Get the notes out immediately upon completion.’</p>

Recommendation 6. That the FutureBeef team consider additional measures to alert industry to the availability of recorded webinars for those unable to participate live or who wish to re-watch them. Options include greater prominence in other appropriate FutureBeef communication tools of the availability of recorded webinars and how to access them, through to registering to receive an alert (email or SMS) once the recorded webinar has been uploaded.

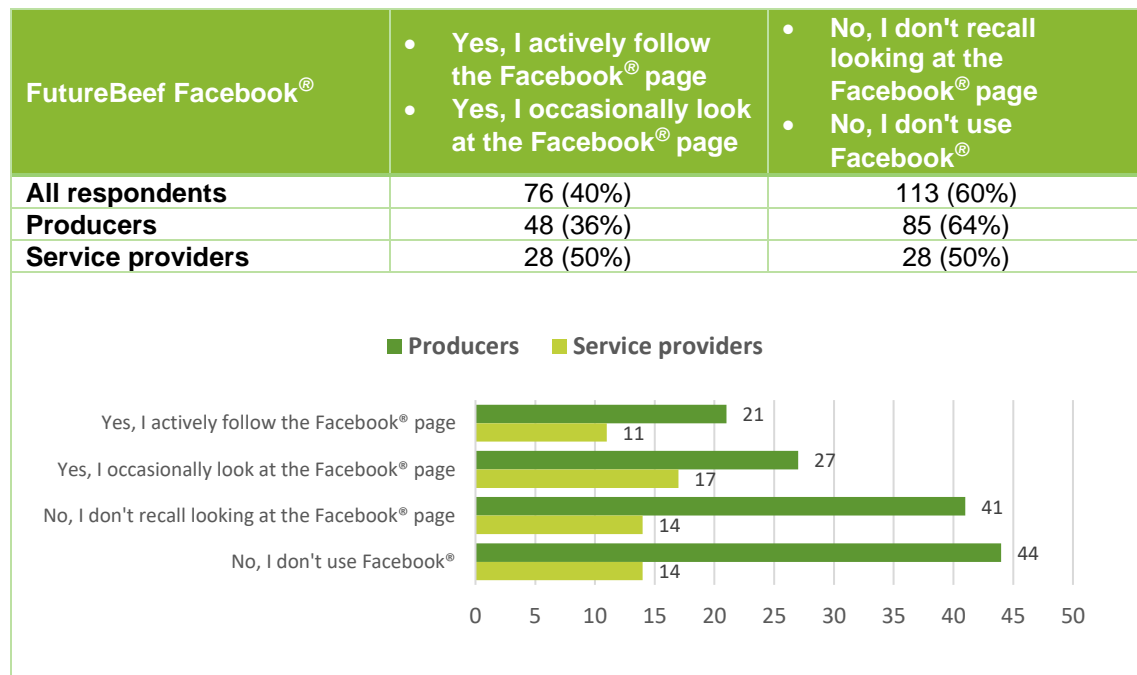
Recommendation 7. That the FutureBeef team make it a priority that a printable summary of the key points from webinars is available and distributed to registered participants within a prescribed time after completion of the webinar. Within two business days is suggested. Links to the summary should also be visible to those watching the recorded version.

FutureBeef Facebook® page

Only 40% of survey respondents actively follow or occasionally look at the FutureBeef Facebook® feed, with the proportion rising to half among service providers (Table 21). A large proportion of the 60% were respondents that did not actually use Facebook®.

Table 21. Proportion of respondents that follow the FutureBeef Facebook® feed and average rating on a scale from 1 (not useful at all) to 10 (very useful).

Table 21a. Proportion of respondents that follow FutureBeef on Facebook®.¹⁴



¹⁴ A full expansion of this table is shown in Appendix 4, Table 51.

Table 21b. Average rating assigned to the FutureBeef Facebook® feed. Number of observations by rating.

FutureBeef Facebook®	Rating	Sample
All respondents	8.0	72
Producers/pastoralists	7.8	46
Service providers	8.2	26



Survey respondents that do follow the FutureBeef Facebook® feed gave it a relatively high rating (8.0) with service providers rating it a little higher than producers/pastoralists. The reasons for these ratings are grouped into themes in Figure 9 and tabulated along with average ratings and supporting quotes in Table 22.

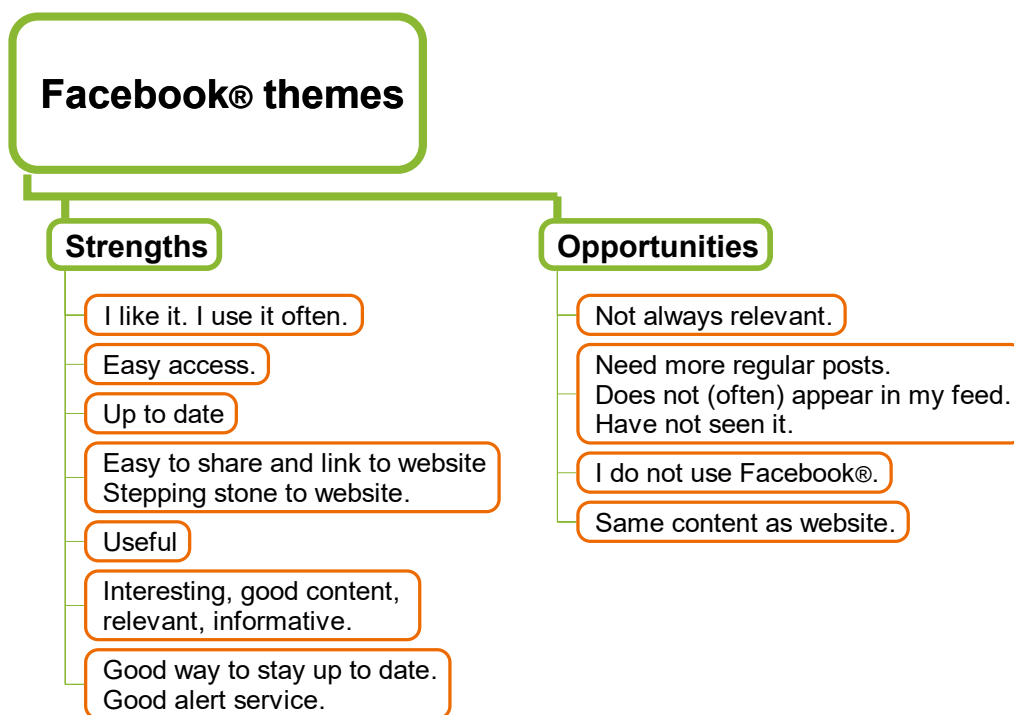


Figure 9. Key themes summarising the reasons supporting the FutureBeef Facebook® feed ratings.

Table 22. Themes summarising the reasons given to support the FutureBeef Facebook® feed ratings along with supporting quotes. The 'rating' shown is the average of the ratings for all responses assigned to the theme and number of responses in brackets ().

Theme	Rating (count)	Key quotes
Useful	9.3 (3)	'Any time there is something of interest posted I read it and it's useful.'
I like it. I use it often	9.0 (3)	'I view and find events on it regularly'
Easy access	9.0 (3)	'Easy to access, good information.' 'Good info. Accessible platform.'
Up to date	9.0 (1)	'Kept up to date.'
Easy to share and link to website. Steppingstone to website	9.0 (3)	'Ok for news prompts and snippets of info and then go to web site.' 'Easy to share to our peers and excellent way to take people to the FutureBeef website.'
Interesting, good content, relevant, informative	8.7 (13)	'Topics covered are interesting.' 'Relevant articles and information.'

Theme	Rating (count)	Key quotes
		<i>'Good coverage of topics.'</i>
Good way to stay up to date. Good alert service	8.0 (3)	<i>'Interesting and relevant posts on a range of topics. Good way to stay up to date with key opportunities.'</i>
Not always relevant	8.0 (1)	<i>'Not always relevant to me.'</i>
Need more regular posts. Does not (often) appear in my feed. Have not seen it	7.5 (11)	<i>'Needs to be more regular. 'A bit quiet.' '... it doesn't always pop up in feed.' 'It doesn't seem to show up in my news feed.' 'It is handy when the articles come up in the news feed.'</i>
I do not use Facebook®	7.3 (4)	<i>'I do not use Facebook as a means to stay updated with what is happening throughout the industry.' 'Don't use Facebook much'</i>

Respondents generally indicated that they use Facebook® to stay up to date and for alerts about information and activities. Mostly those who followed the FutureBeef Facebook® feed were satisfied with the content and what function it performed. The limited number of suggestions provided by respondents for how the Facebook® feed could be improved included:

- *'More relevant and current happenings across the northern beef industry.'*
- *'Needs to be more regular. More activity to bring page to top of news feed.'*

Recommendation 8. That the FutureBeef team continue to use Facebook® as a mechanism to alert northern beef stakeholders to new information and activities within the FutureBeef program.

FutureBeef Twitter®

Only six per cent of survey respondents follow FutureBeef on Twitter®. The vast majority (87%) of those not following FutureBeef tweets simply do not use Twitter®.

Table 23. Proportion of survey respondents that follow the FutureBeef Twitter® feed and average rating on a scale from 1 (not useful at all) to 10 (very useful).

Table 23a. Proportion of respondents that follow FutureBeef on Twitter®.¹⁵

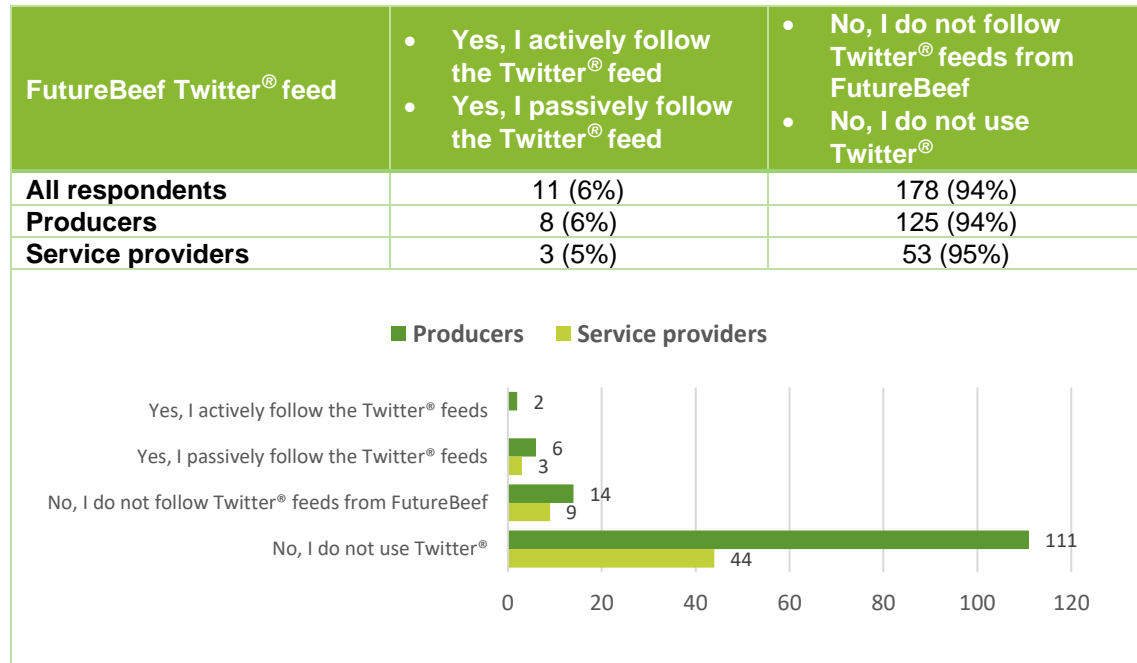
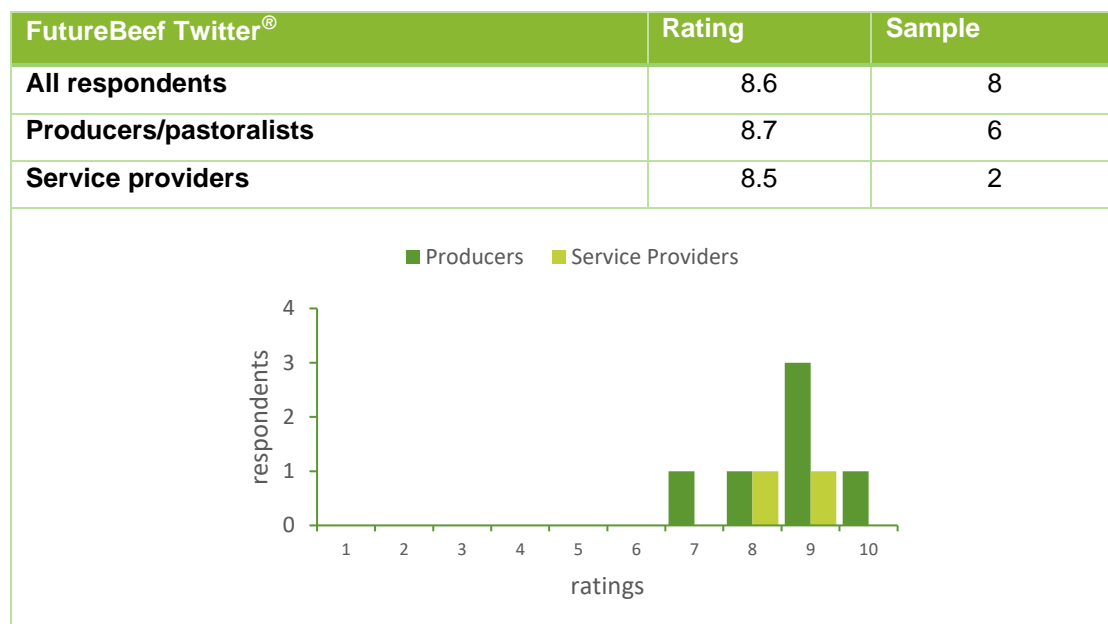


Table 23b. Average rating of survey respondents who follow FutureBeef on Twitter®. Number of observations by rating.



¹⁵ A full expansion of this table is shown in Appendix 4, Table 52.

Those few followers of the FutureBeef tweets rate it highly (Table 23b). The main feedback was that it was a useful alert system (*'Useful first alert to issues'*) and that it was *'Short and to the point'*.

One respondent indicated the information was better presented on Facebook®, but if presented on Twitter®, the content needs to be better formatted for that medium.

Given the low apparent uptake of Twitter® by the northern beef industry, limited resources may well be better applied to other FutureBeef communication tools.

Recommendation 9. The FutureBeef project team should consider Twitter® as a low priority for subsequent programs as there is a high proportion of the FutureBeef's intended audience who do not use Twitter.

FutureBeef LinkedIn®

As for Twitter®, only a very small number of survey respondents (8%) see FutureBeef’s LinkedIn® posts. Participation by producers (5%) is much lower than by service providers (14%), most likely reflecting the target audience of this social media platform.

Table 24. Proportion of survey respondents that see FutureBeef posts on LinkedIn® and average rating on a scale from 1 (not useful at all) to 10 (very useful) given to FutureBeef posts.

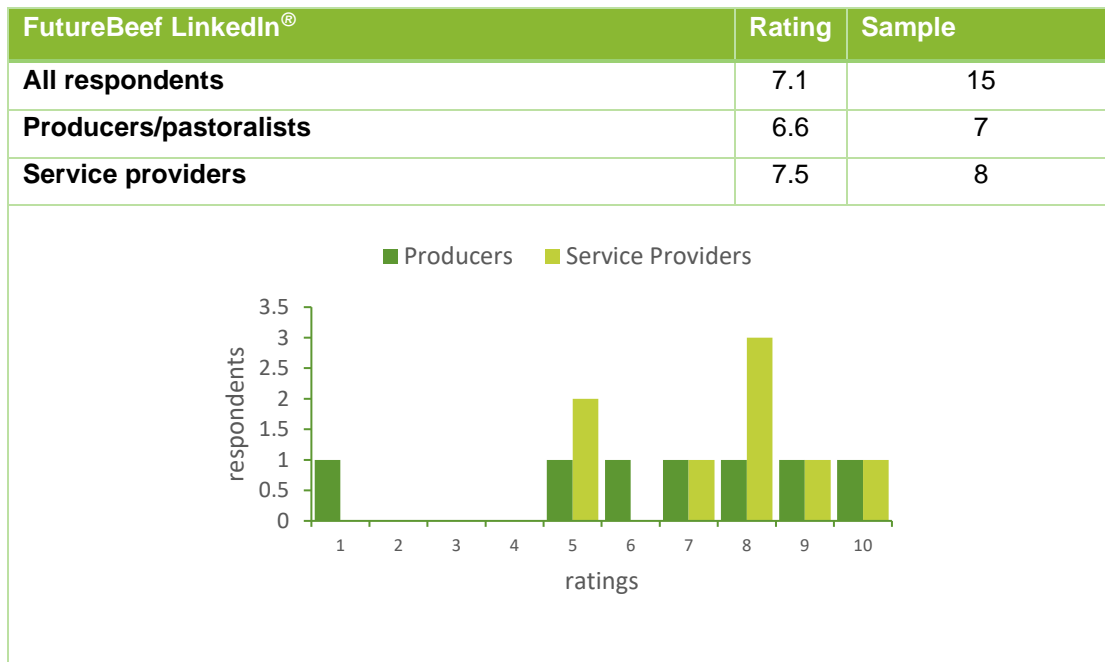
Table 24a. Proportion of survey respondents that have seen FutureBeef LinkedIn® posts.¹⁶

FutureBeef LinkedIn®	<ul style="list-style-type: none"> • Yes, I have added FutureBeef as a link • Yes, I see the occasional FutureBeef posts 	<ul style="list-style-type: none"> • No, I don't see FutureBeef posts • No, I don't use LinkedIn®
All respondents	15 (8%)	173 (92%)
Producers	7 (5%)	125 (95%)
Service providers	8 (14%)	48 (86%)

Response Category	Producers	Service providers
Yes, I have added FutureBeef as a link	4	2
Yes, I see the occasional FutureBeef posts	3	6
No, I don't see FutureBeef posts	34	19
No, I don't use LinkedIn®	91	29

¹⁶ A full expansion of this table is shown in Appendix 4, Table 53.

Table 24b. Average rating given for FutureBeef LinkedIn® posts. Number of observations by rating.



Average ratings for FutureBeef’s LinkedIn® posts were moderate, however this result is problematic because of the low sample size (n=15) and because several respondents admitted to not having seen the FutureBeef posts on LinkedIn®.

Only one respondent gave the highest rating for the LinkedIn® posts indicating it was his main ‘e-Access’ entry point.

Table 25. Themes summarising the reasons given to support the FutureBeef LinkedIn® posts along with supporting quotes. The ‘rating’ shown is the average of the ratings for the responses assigned to the theme and number of responses in brackets ().

Theme	Rating (count)	Key quotes
Main e-Access entry point	10.0 (1)	‘My main e-access pathway.’
Relevance	7.0 (3)	‘Useful articles.’ ‘Not always relevant to me.’
Need more frequent updates Just do not see FutureBeef info	6.0 (3)	‘I just don’t see much of it to be honest.’ ‘Have only seen a few but I clicked to read.’

The main improvement requested was for more content and more frequent updates e.g. ‘[Increase] the frequency of posts and advertise that FutureBeef has a LinkedIn® profile.’

One respondent was more specific asking for ‘more content on environmental rehabilitation.’

Given the low apparent adoption by the northern beef industry, there is little justification at this stage for more than minimal resources being allocated to LinkedIn®.

Recommendation 10. Given the high proportion of survey respondents who do not use LinkedIn®, the FutureBeef project team should consider LinkedIn® to be a low priority as a mode of engagement for FutureBeef.

FutureBeef YouTube® channel

Only a third of survey respondents have accessed or actively follow the FutureBeef YouTube® channel. A higher proportion of service providers (43%) than producers (28%) access or follow the FutureBeef YouTube® channel which is perhaps driven by their better internet access.

Table 26. Proportion of survey respondents that have accessed the FutureBeef YouTube® channel and average rating given by users of the YouTube® channel.

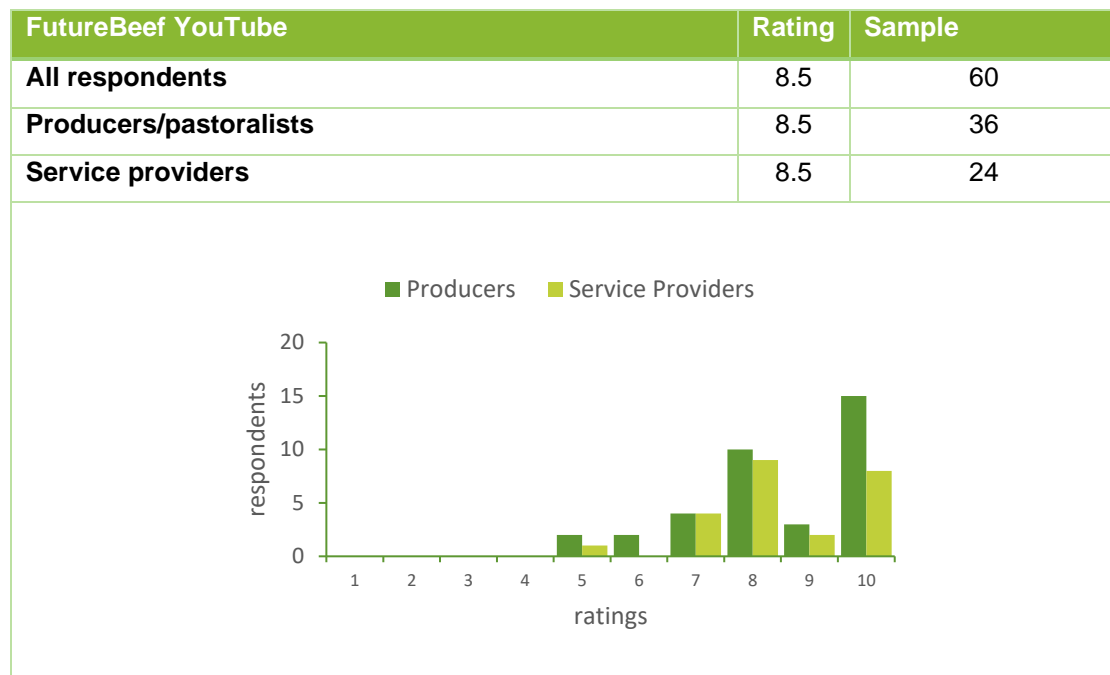
Table 26a. Proportion of survey respondents who access the FutureBeef YouTube® channel.¹⁷

FutureBeef YouTube	<ul style="list-style-type: none"> • Yes, I actively follow the FutureBeef YouTube® channel. • Yes, I have accessed the FutureBeef YouTube® channel to watch a video or webinar recording. 	<ul style="list-style-type: none"> • No, I have not accessed or viewed the FutureBeef YouTube® channel. • No, I don't use YouTube®.
All respondents	61 (32%)	127 (68%)
Producers	37 (28%)	95 (72%)
Service providers	24 (43%)	32 (57%)

Response Category	Producers	Service providers
Yes, I actively follow the FutureBeef YouTube channel	6	2
Yes, I have accessed the FutureBeef YouTube channel to watch a video or webinar recording	31	22
No, I have not accessed or viewed the FutureBeef YouTube channel	58	22
No, I don't use YouTube	37	10

¹⁷ A full expansion of this table is shown in Appendix 4, Table 54.

Table 26b. Average rating of the FutureBeef YouTube channel assigned by users. Number of observations by rating.



Both producers and service providers gave the same high average rating (8.5) with the key reasons for the high rating being the flexibility to watch (and re-watch) YouTube® channel videos in their own time, they are easy to view and are useful, relevant, interesting and well presented.

Table 27. Themes, average rating (number of responses in brackets) and key quotes relating to the FutureBeef YouTube channel.

Theme	Rating (count)	Key quotes
Can watch again	10.0 (2)	<i>'I can watch over and over until I fully understand.'</i> <i>'Good to be able to catch up on past webinars etc.'</i>
Easy to view. Can view in own time	9.0 (7)	<i>'Informative, able to access when have time.'</i> <i>'Very useful and I regularly use it to watch webinars.'</i> <i>'Excellent body of presentations. The ability to view information when convenient, in our own time, is much appreciated.'</i> <i>'YouTube - love it as we can watch them at any time of the day - don't need a time schedule like the webinars.'</i>
Interesting and useful content relevant, well presented	8.6 (17)	<i>'Relevant, convenient.'</i> <i>'Anything I've watched I have been interested in it and have found it useful.'</i> <i>'Easy to find, well presented and facilitated. Relevant topics.'</i> <i>'Very useful in the video format.'</i>
Great learning tool	10.0 (1)	<i>'They are great learning tools. Short and sweet.'</i>

Suggested improvements to the FutureBeef YouTube® channel include:

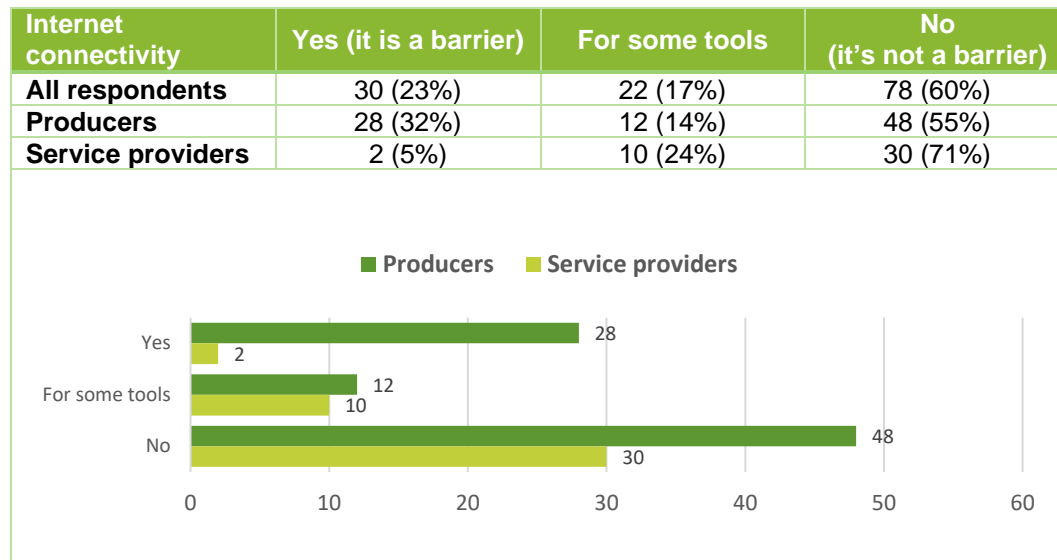
- *'The content is good, [but] it's very hard to find anything. What is on the YouTube channel doesn't link with what is on the website. [That] makes it hard to find things.'*
- *'When you click on YouTube videos on the website, it is difficult to enlarge - making them subsequently hard to see.'*

Recommendation 11. That the YouTube® channel content is specifically identified and promoted on the website to increase engagement.

Internet connectivity

Internet connectivity was reported as a barrier to accessing FutureBeef content by 23% of all survey respondents, though the rate was much higher (32%) for producers. In addition, a further 17% of survey respondents indicated their internet connectivity was a barrier for some of the FutureBeef tools.

Table 28. Proportion of survey respondents that indicated internet connectivity is a barrier to using FutureBeef communication tools, is a barrier to some tools, or is not a barrier.



Live webinars were cited several times as a problem for rural internet connections. This was partly solved by accessing them via recordings on the YouTube channel or by getting them 'sent to you instead.' But mostly the problems are associated with the slow connection, and the intermittent nature of the signal/service at times.

- 'It's just rural internet - get used to it – I go sit up the hill to get better connection.'
- 'All internet connection fails when it is raining, the perfect office days.'

These results are consistent with the 2016 FutureBeef survey reports that noted that 'While many stakeholders appreciate and prefer email updates and other online resources, internet and mobile coverage along with download limits impacted on access. Stakeholders were frustrated by these limitations, preventing many from consistent access of online resources.'

CONTRAST WITH THE 2016 FUTUREBEEF SURVEY

One of the key requirements of this project was to compare the results obtained from this survey (2021) with results obtained from the 2016 survey^{18,19,20}. It is important to note the differences in the survey methodologies – the 2016 survey was a random survey conducted via phone interview and the 2021 survey was a Survey Monkey® online survey that was sent to a wide range of known FutureBeef stakeholders. This difference could result in a bias, most notably that while the questions asked about the FutureBeef communication tools were consistent, the rating questions in the 2021 survey were only asked of those respondents that have used or accessed the communication tool.

Overall awareness of the FutureBeef program was higher in this survey (8.3/10) than awareness observed in 2016 (6.2/10). The average awareness of the partners in FutureBeef was also higher in this survey than it was in 2016. Awareness of MLA (7.7/10 vs 7.2/10) and QDAF (7.5/10 vs 6.9/10) increased by approximately 7%. The awareness of both NT DITT (5.0/10 vs 2.6/10) and DPIRD WA (4.7/10 vs 1.8/10) improved but are still relatively low.

The following table has been developed to provide a snapshot of the longitudinal ratings of the communication tools and to compare those against the proposed targets* for FutureBeef.

Table 29. User satisfaction ratings (out of 10) of FutureBeef communication tools comparing 2016, 2021 and targets.

FutureBeef communication tool	Rating in 2016 survey (number surveyed)	Rating in 2021 survey (number of responses)	Target set in MLA agreement in 2018	Achieved (Yes or No)
Website	6.2 (89)	7.7 (174)	7.5	Yes
eBulletin	6.6 (124)	8.2 (168)	7.5	Yes
Feature articles	6.8 (128)	6.5 (116)	No target [†]	
Webinar	6.7 (78)	8.4 (119)	7.5	Yes
Facebook®	6.7 (34)	8.0 (72)	7.5	Yes
Twitter®	6.3 (13)	8.6 (6)	7.5	Yes
LinkedIn®	N/A	7.1 (15)	No target ^β	
YouTube®	6.4 (35)	8.5 (60)	7.5	Yes

* These were targets set in the project proposal agreement with MLA and have been subsequently reported against in FutureBeef milestone reports.

[†] No target set as externally published and not possible to evaluate changes in satisfaction.

^β No target set as LinkedIn® activities commenced in 2020.

Noting the difference in methods used, it still appears that the FutureBeef user ratings on the majority of FutureBeef communication tools have improved, except for

¹⁸ DAF FutureBeef Website and Intranet Evaluation report April 2016 Coutts J&R

¹⁹ DAF FutureBeef Webinar Series Evaluation report April 2016 Coutts J&R

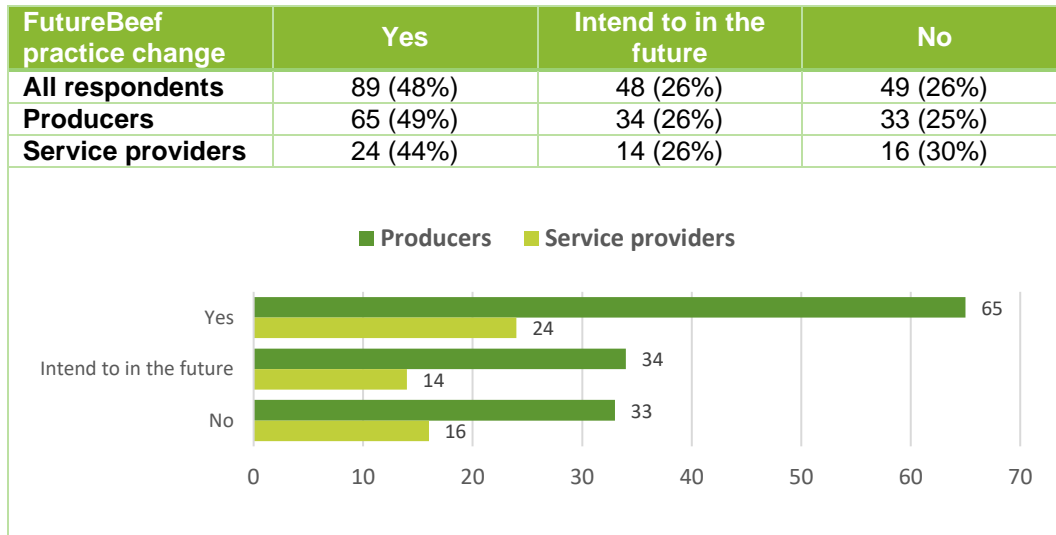
²⁰ FutureBeef Update eBulletin and Social Media Evaluation April 2016 Coutts J&R

feature articles. That tool was the only media that did not increase in user rating between 2016 and 2021 and may reflect a decline in users seeking information through rural newspapers.

PRACTICE CHANGE

Almost half of all survey respondents (48%) indicated that FutureBeef communication tools had contributed to practice change on their property or their client's property. A further 26% indicated the tools have contributed to a practice change they intend to make. This indicates that the technical information provided through FutureBeef's communication tools is being used to influence on-farm practice change.

Table 30. Proportion of survey respondents that indicated that FutureBeef has contributed to practice change on their property or their client's property, or to a change they intend to make.



Of interest, practice change and the intent to make a practice change was very similar (in percentage terms) between producers and service providers. This indicates that indirectly FutureBeef is providing resources that enable service providers to work with clients to stimulate practice change. This impact potentially needs to be further quantified as a service provider may work with multiple producers.

Types of practice changes

The practice changes listed and described by respondents were grouped into thematic areas based on the authors' interpretation of the responses provided. The most frequent practice change themes are displayed in Figure 10. Table 31 provides supporting quotes for all practice change themes.

It should be noted that in grouping the responses into themes the authors have differentiated between the provision of mineral supplements and licks e.g. phosphorus, as being different to supplementary feeding of grain or conserved forage. This also applies to differences assumed in general grazing management approaches (e.g. set stock versus rotation grazing) compared to the specific management practices of feed budgeting and matching stocking rate to carrying capacity.

Of those who had implemented a practice change the most frequent themes included pastures, supplementation and phosphorus supplementation, early weaning, feed budgeting, stocking rates and carrying capacity. For those intending to make a

practice change, grazing management, animal production and animal health, and welfare were the more frequent practice changes listed. It is noted that the themes represented by this group are less specific than those who had implemented a practice change, possibly due to the fact that the change has not yet been implemented and is still in the early phases of the adoption process. These themes align with technical information provided by FutureBeef communication tools and shows that in general that information is valued by FutureBeef users.

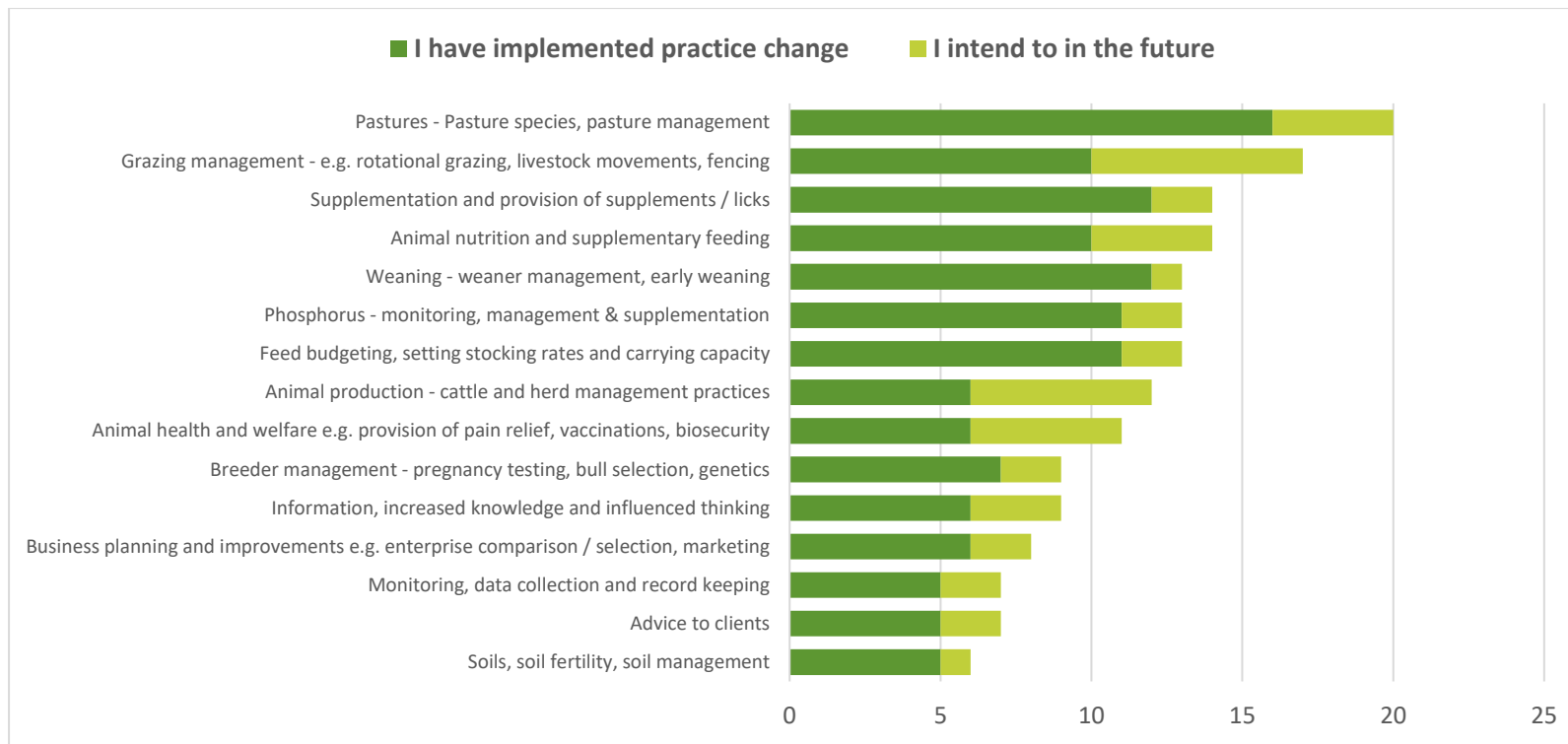


Figure 10. Frequency of key practice change themes FutureBeef has contributed to or to changes intended to be made.

Table 31. Practice change themes and supporting quotes.

Practice change themes	Supporting quotes
<p>Pastures - Pasture species, pasture management</p>	<p><i>'Pasture improvement - 5 types of grasses and legumes'</i></p> <p><i>'Pasture management - using stocktake'</i></p> <p><i>'Cattle management and grass paddock management. This has improved our grass coverage markedly and helped in weed control'</i></p>
<p>Grazing management - rotational grazing, livestock movements, fencing</p>	<p><i>'Ideas around rotational grazing methods and different grazing practices have been great. We have implemented them in our own business and to see how other people have gone about it are useful in avoiding the mistakes they've made'</i></p> <p><i>'We changed our mindset on beef production to kg of beef produced. We changed to feeding for production and use rotational grazing. We feed our cattle daily on a planned feed and shift the feeders to a new paddock every month. Made a huge difference to our bank balance.'</i></p>
<p>Supplementation and provision of supplements/licks</p>	<p><i>'Weaning supplementation.'</i></p> <p><i>'Improved supplementation.'</i></p> <p><i>'Advice on nutrient supplementation in rangelands'</i></p>
<p>Animal nutrition and supplementary feeding</p>	<p><i>'Some of the cattle best practice ideas. Nutrition changes'</i></p> <p><i>'Molasses feeding and calf rearing'</i></p> <p><i>'We feed our cattle daily on a planned feed and shift the feeders to a new paddock every month.'</i></p>
<p>Feed budgeting, setting stocking rates and carrying capacity</p>	<p><i>'Re-enforced RCS practices, matching stocking rate to carrying capacity'</i></p> <p><i>'Pasture management - using stocktake'</i></p> <p><i>'Matching stocking rate to carrying capacity'</i></p>
<p>Phosphorus - monitoring, management & supplementation</p>	<p><i>'Phosphorus and coastal cattle in the wet season-delving into how we can do it better'</i></p>

Practice change themes	Supporting quotes
	<i>'Use of phosphorus supplements year-round'</i>
Weaning - weaner management, early weaning	<i>'Weaner management'</i> <i>'Weaning supplementation'</i> <i>'Introduced new ideas and helped me develop skills to improve productivity. These include early weaning.... which FutureBeef has allowed me to become more informed'</i>
Animal production - cattle and herd management practices	<i>'Improved cattle husbandry practices.'</i> <i>'The articles and webinars provide new information to producers that drive improved animal production outcomes.'</i>
Animal health and welfare e.g. provision of pain relief, vaccinations, biosecurity	<i>'We now use NSAIDs at branding.'</i> <i>'Have used information from webinars to improve in animal health'</i>
Breeder management - pregnancy testing, bull selection, genetics	<i>'More preg testing'</i> <i>'Controlled mating'</i> <i>'Bull selection'</i>
Information, increased knowledge and influenced thinking	<i>'Everything is food for thought. Might not be immediately.'</i> <i>'I regularly advise/encourage people to search FutureBeef. I search the FutureBeef site for topics such as green date, NACP, adult equivalents, forage budgeting. '</i> <i>'The articles and webinars provide new information to producers that drive improved animal production outcomes.'</i>
Business planning and improvements - enterprise comparison/selection, marketing	<i>'Economic data comparing production and enterprise mixes, to change to sheep or Leucaena etc.'</i> <i>'Stocktake pasture & fencing. Model of enterprise from straight cattle to mixed livestock.'</i> <i>'I tried to get a loan again based on a webinar, used feed calculators from links off there to work out stocking rates'</i>

Practice change themes	Supporting quotes
Advice to clients	<p><i>'I forward all information from the FutureBeef website to producers when they ask me questions - changed supplementation (phosphorus) - improving grass species and looking after ground cover on our agistment paddocks.'</i></p> <p><i>'Use of pain relief in dehorning, castration. Initiate conversations about the research presented.'</i></p>
Monitoring, data collection and record keeping	<p><i>'Better records'</i></p> <p><i>'Clients herd and pasture management practices. Business management record keeping'</i></p>
Soils, soil fertility, soil management	<p><i>'Soil and pasture management'</i></p> <p><i>'Fertiliser program'</i></p> <p><i>'Water ponding'</i></p> <p><i>'Grazing management, importance of soil management in rangelands.'</i></p>
Adoption of best management practices	<p><i>'I'm new to the industry, so I am looking for best practices to implement.'</i></p> <p><i>'Some of the cattle best practice ideas. '</i></p> <p><i>'It is also useful as a timely reminder during the yearly cycle of best practice things to do at particular times.'</i></p> <p><i>'Increase uptake of key management practices using current industry best practice (e.g. pain relief, phosphorus supplementation).'</i></p>
Weed management	<p><i>'Giant Rats Tail Grass management and control measures'</i></p>
Use climate and weather forecasting information	<p><i>'We regularly use MetEye and a few other pages on BOM now we know how to read them accurately.'</i></p>
Land management	<p><i>'Long Paddock for reports on grass growing season for properties. Looked up and downloaded Land Type data for properties. Both improve our land management'</i></p>

Practice change themes	Supporting quotes
Training/education	<i>'Changes old practices by educating all workers.'</i>
Leucaena and legumes	<i>'I follow advice very carefully on my current Leucaena planting.'</i> <i>'Sown pastures and legumes and their optimal management.'</i>
Chemical use	<i>'Records of treatments when using chemicals.'</i> <i>'Rotation and spelling of paddocks, chemical use and records plus possibly more if available.'</i>
Pasture dieback	<i>'Dieback management.'</i> <i>'Informed farmers on pasture dieback updates.'</i>
Drought management	<i>'Feeding weaners and drought management.'</i>
Use of tools/calculators	<i>'Use of excel calculators.'</i> <i>'I tried to get a loan again based on a webinar, used feed calculators from links off there to work out stocking rates'</i>
Environmental sustainability	<i>'We hope to go greener and sequester more carbon into the soil'</i>
Water quality	<i>'Understanding water quality and how it affects production'</i>
Regulations	<i>'Regulations.'</i>

Tools influencing practice change

Three FutureBeef communication tools, the website, webinars and eBulletins, were mentioned most often as influences of practice change (see Figure 11), both in terms of actual change and intent to change. It appears that these media provide sufficient content and supporting material to encourage decisions beyond awareness.

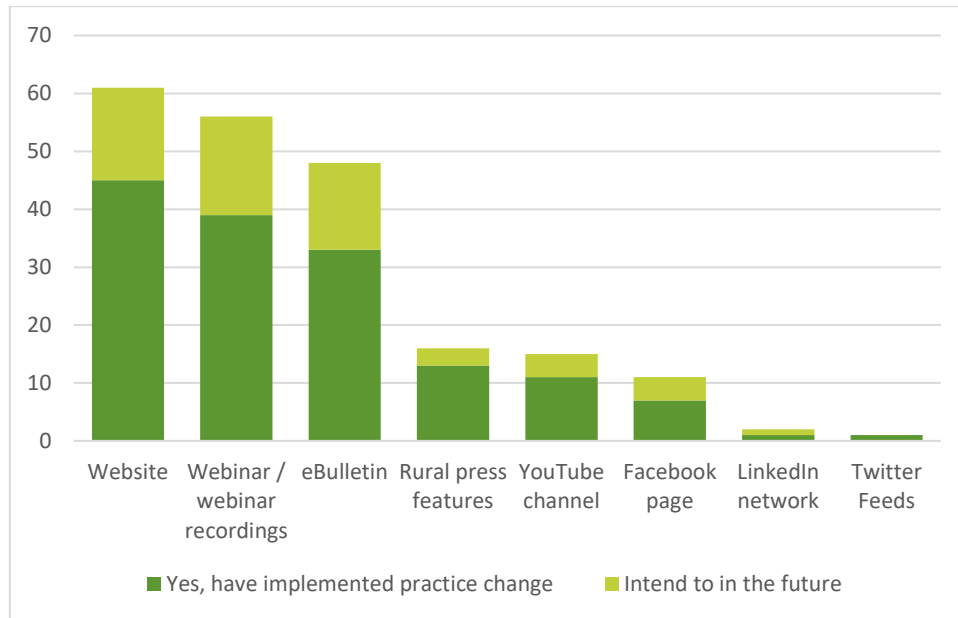


Figure 11. The FutureBeef communications tools in descending order of mentions that have influenced practice change or intent to make practice change.

These results are consistent with the results obtained directly after the webinars have been completed. Fifty-two per cent of FutureBeef webinar attendees indicated they intend to make a practice change and 20% indicated they are very likely to make this change²¹. This survey confirmed that webinars and webinar recordings have directly prompted practice change and intent to change practices.

Impact of practice change

Respondents were asked to indicate via check boxes the areas of their property or business that were impacted by practice change. As indicated in

²¹ L.GFB.1802 Nicole Sallur, Jodie Ward, Greg Bath and Kate Brown. Department of Agriculture and Fisheries. 31 May 2020. Delivery of FutureBeef industry engagement. Milestone 4 Progress report on financial year 3.

Table 32, animal production, grazing management and animal health and welfare were the production themes where the most practice change and intent to change were recorded. This is consistent with the descriptions provided on practice change (see Table 31) relating to comments on pasture management, nutrition and supplementation. Business improvement and environmental improvement impacts were associated with the use of calculators, kg of beef /ha, ground cover, pasture dieback and carbon.

Interestingly, mention of genetics in relation to practice change impact was quite low compared to the resources provided within the FutureBeef tools on this topic. The impact of practice changes on social and human resources was also low.

Table 32. The production or management theme of the property or business that were impacted by practice change.

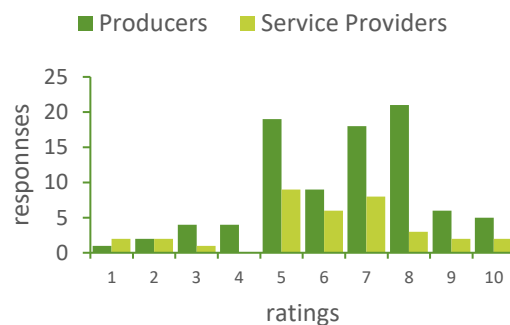
Impacted theme	Frequency (All)	Frequency (Yes, have implemented practice change)	Frequency (Intend to in the future)
Animal production	68	47	21
Grazing land management	68	47	21
Animal health and welfare	60	44	16
Business improvement	38	28	10
Environmental improvement	32	25	7
Reproductive efficiency	27	22	5
Genetics	17	10	7
Social and human resources	7	5	2

Respondents were asked to rate the impact of their practice change on a scale from 1 (small) to 10 (very large). They were then asked what proportion of their practice change they attributed to FutureBeef.

Table 33 shows the average rating of the practice change impacts on their property or business for those respondents where they had some attribution to FutureBeef communication tools. Where some attribution to FutureBeef was reported, there was a good result with an average rating of 6.4 out of 10.

Table 33. Average rating for the impact of the practice change undertaken with some attribution to FutureBeef.

Impact of practice change	Rating	Sample
All respondents	6.4	124
Producers/pastoralists	6.5	89
Service providers	5.9	35



The average percentage of the impact of practice change attributed to the FutureBeef communication tools was 58% for those who had implemented a change versus 37% for those who nominated a practice change they intended to implement. The distribution of impact of practice change is shown in Figure 12.

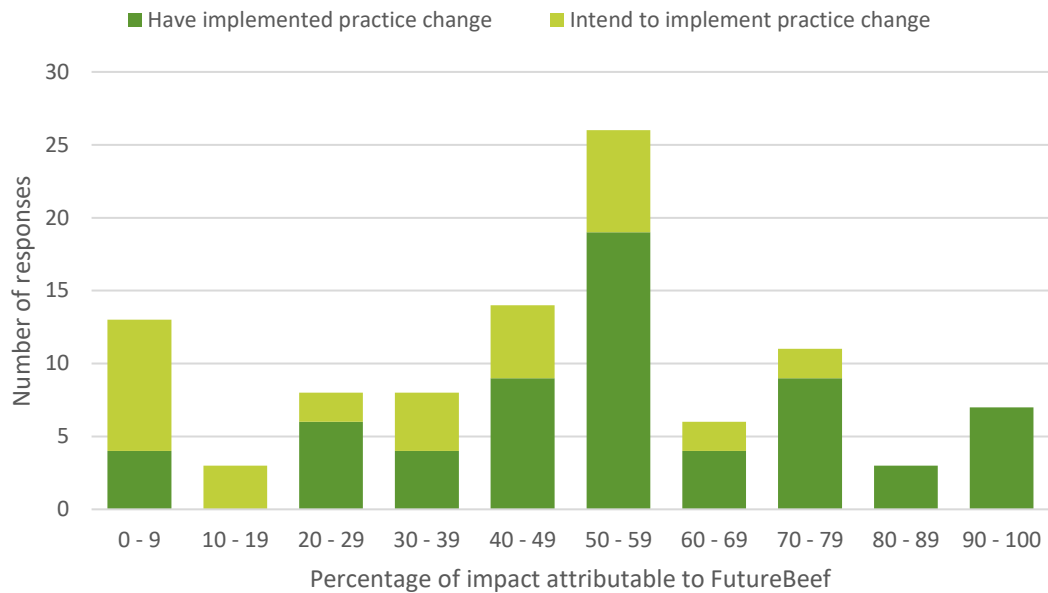


Figure 12. Distribution of the percentage of the impact of practice change attributed to the FutureBeef communication tool or tools, split between those who have implemented a change and those who intend to.

This result is consistent with the results obtained from the 2016 survey, where 68% indicated that FutureBeef had (37%) or might have (31%) stimulated practice changes. Of note, the attribution to FutureBeef was higher for those that have completed a change relative to those that indicated an intention to change.

The practice change survey results have demonstrated FutureBeef’s strong role in influencing on-farm practice change (74% of respondents have either made or intend to implement practice change). Further to this, producers attribute over half of the impact of the practice changes implemented to FutureBeef communication tools. These results highlight the importance of FutureBeef in influencing on farm adoption of technologies and best practice management for the northern Australian beef industry.

FUTURE OPPORTUNITIES

The current FutureBeef program concludes in February 2022. The final section of the online survey invited participants to comment on what might be considered for inclusion in a follow-up FutureBeef program.

Two open ended questions were included:

- How could FutureBeef be improved?
- What could be included in the next FutureBeef program?

There was a lot of crossover in the answers provided to these questions with suggested improvements and ideas for new content recorded against both questions. As a result, the responses have been combined and are reported in three groups (Figure 13):

- suggested improvements
- suggested new content
- suggested new roles or function.

While neither an improvement nor an idea for new content but rather an endorsement of current value of FutureBeef, the grouping with the most responses could be summed up as 'Keep it going, happy with it as it is.' The overwhelming majority of these responses were provided by producers/pastoralists. This sentiment is expressed in the aside quotes.

Many if not all the suggested improvements have been raised in the responses to the individual FutureBeef communication tools and therefore the recommendations made in this report are consistent with those improvements and suggestions. Several of these suggested improvements are also very consistent with the recommendations made in the 2016 survey report¹⁸, specifically the navigation of the website, the options for printable materials (*'it is important to continue to produce printed material, particularly as poor internet accessibility was noted by a number of producers'* 2016), and the access to off-line resources. The following table (Table 34) provides supporting quotes and explanatory notes for the suggested improvements listed in the first column of Figure 13.

'Keep doing what you do - it's one of the more useful spends of state govt money.'

'Definitely continue its presence ... I hope it does not die next year after all the work that has been put into it!! Especially as Departmental support disappears regionally!!!'

'Don't stop in Feb 22 - you need to keep going. This information is essential for everyone from small hobby farms to large pastoral companies.'

'Keep doing what you are doing.'

Figure 13. Improvements, new content and new roles/functions suggested for consideration in planning a subsequent FutureBeef program.

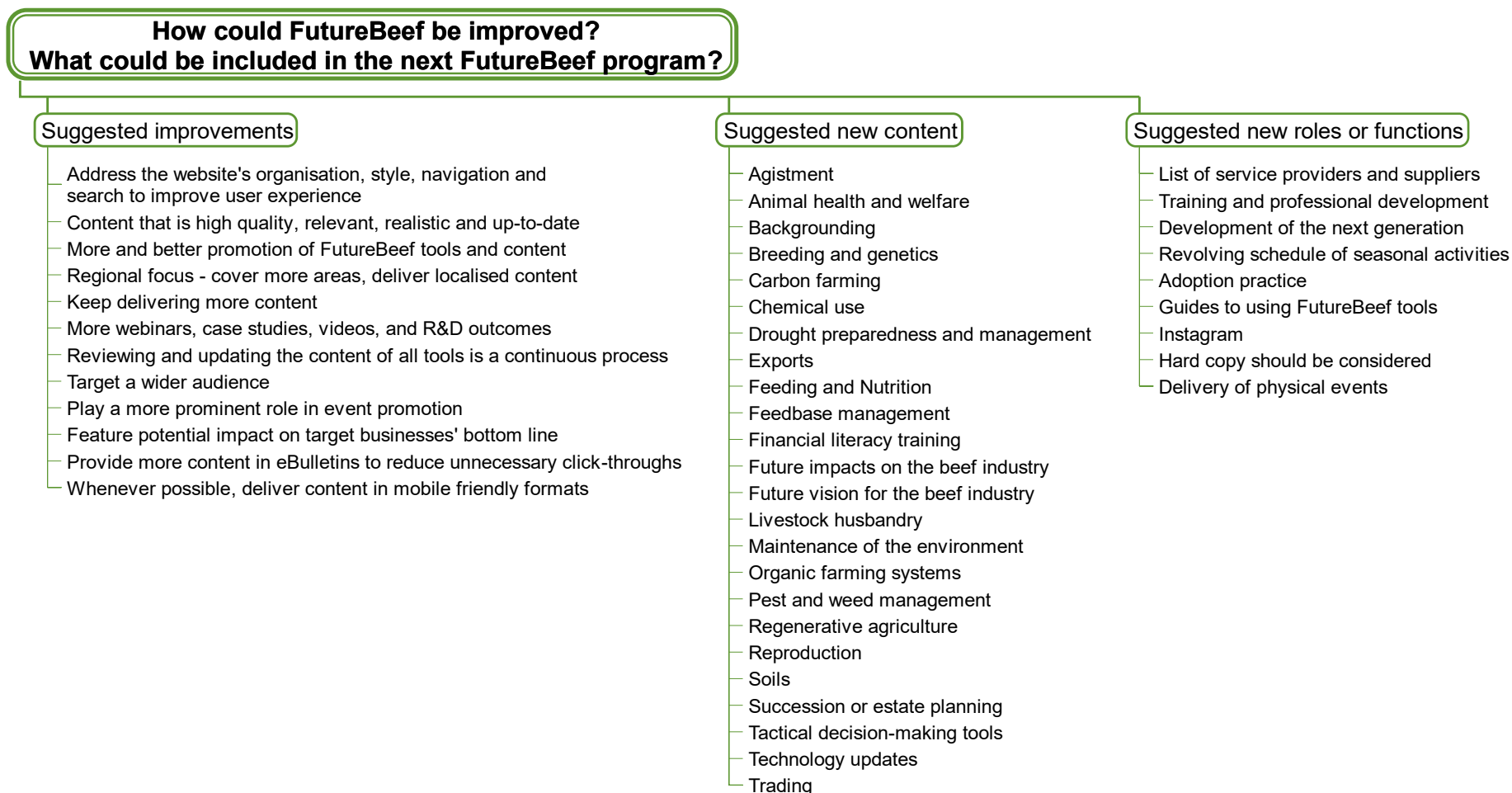


Table 34. Improvements suggested for consideration in planning a subsequent FutureBeef program.

Suggested Improvement	Key quotes	Further insights and implications
<p>Address the website's organisation, style, navigation, and search to improve user experience</p>	<p><i>'Make website easier to use'.</i></p> <p><i>'Just improve the website search engine and get the name out there more. Can't wait to hear the podcasts.'</i></p> <p><i>'There is a wealth of information and resources there. Unfortunately, I find it difficult to navigate and I imagine I am not the only person who gives up - especially if I don't know how/where to look for something.'</i></p> <p><i>'Needs to be a more attractive tool for the everyday user (it is presented visually, in my opinion, as a tool for academics). Something more user-friendly would definitely up the interaction. The more quickly people can find the information they need, the more likely they'll be to engage with it and keep looking for more!'</i></p> <p><i>'The user interface could use some work, making it as intuitive as possible for technology-challenged graziers.'</i></p> <p><i>'Website with better visuals, linked to social media platforms and easier navigation to access regionally relevant articles and webinars.'</i></p>	<ul style="list-style-type: none"> • The web site is recognised as a key 'knowledge' resource – <i>'...just to be there is a help.'</i> • However, finding information is a challenge for some people. They ask for better organisation of the content and a more usable search facility. • The presentation style (user interface) needs updating and modernising.
<p>Content that is high quality, relevant, realistic, and up to date</p>	<p><i>'...With content that is relevant, reliable and can improve northern beef businesses.'</i></p> <p><i>'Making it relevant to changing conditions.'</i></p> <p><i>'You must be real and not off with the fairies.'</i></p>	<ul style="list-style-type: none"> • The quality of the content provided through all the tools is make or break. Good quality, relevant information builds a positive feedback loop on use of the tools – content that is less well prepared, out of date, irrelevant inhibits future use of the tools.

Suggested Improvement	Key quotes	Further insights and implications
More and better promotion of FutureBeef tools and content	<p><i>'Promote what is available.'</i></p> <p><i>'... more regular bulletins.'</i></p> <p><i>'Increase awareness of the resources available.'</i></p> <p><i>'Advertisement of other platforms available to follow (Twitter®, LinkedIn®, etc).'</i></p>	<ul style="list-style-type: none"> On-going promotion is crucial to driving uptake and usage. Nowhere is this more important than in social media applications where having frequent posts, tweets, updates, uploads etc. is vital to obtaining the attention of active users.
Regional focus - cover more areas, deliver localised content	<p><i>'Cover all of Queensland.'</i></p> <p><i>'Widen audience to more NT and WA.'</i></p> <p><i>'More relevant information for Western Qld.'</i></p> <p><i>'Less Queensland centric.'</i></p> <p><i>'Love to see some programs run in S.E. Qld, this side of the range things are very different so would love some workshops tailored to our area.'</i></p>	<ul style="list-style-type: none"> Some areas within the target northern beef region hint that they are not included and indicate a need for information/activities directed toward them. With calls to cover more regions both within and outside the northern beef region and to develop information for specific regions, it is crucial that expectations are managed in line with program objectives and available resources.

Suggested Improvement	Key quotes	Further insights and implications
<p>Keep delivering more content</p>	<p><i>'More of the same - current topics, promoting adoption of R&D, promoting upcoming workshops/information days.'</i></p> <p><i>'Finance, marketing, business relationships, animal production, issues like ticks, law, branding rules, PIC number, where to start, salt lick recommendations.'</i></p> <p><i>'Certainly, information on upcoming events, webinars, webinar recordings, access/information on tools e.g. Breedcow, forage reports, Stocktake, land types, pasture photo standards, etc all in one place is well worthwhile.'</i></p> <p><i>'More of the current "favourite" beef industry advisors providing content? i.e. breeders, vets, freight providers, equipment manufacturers of merit (not just generic chemical companies saying "we make great stuff and it's gonna save you thousands")'</i></p>	<ul style="list-style-type: none"> • Content that can and should be delivered is changing continuously. Results of R&D activities, changing seasonal, market and economic conditions and the implications of those changes are a moving feast. The annual production cycle also results in focus changing throughout the year. This should be reflected in the continuous review of content being provided and actively updated information.

Suggested Improvement	Key quotes	Further insights and implications
<p>More webinars, case studies, videos, R&D outcomes, and physical events</p>	<p><i>'More stories/case studies from farmers'</i></p> <p><i>'What real producers are doing not trendy ones chasing something they may never catch.'</i></p> <p><i>'Comparing animal health practices, multimin, [Vitamins] ADE.'</i></p> <p><i>'We are new to beef, so we have found all the webinars etc useful.'</i></p> <p><i>'More webinars or recordings of workshops etc.'</i></p> <p><i>'More webinars that maybe involve people highly regarded within the industry for their grazing practices.'</i></p> <p><i>'More video content! Short videos that tell a compelling story, that have more in-depth analyses (i.e. articles) to back them up.'</i></p> <p><i>'More info on research and development ... promoting adoption of R&D.'</i></p>	<ul style="list-style-type: none"> • There was strong support for case studies - carefully chosen and reported, they are pragmatic, instructive and influential. • Webinars have wide support from new entrants to established users, and access to recordings is important both for those who cannot participate in the live webinars and those that want to listen/review again. The credibility or reputation of the presenter is critical to obtaining high user satisfaction. • Videos and webinars should be supported by summary material that is made available shortly after completion, or links to such supporting information.
<p>Reviewing and updating the content of all tools is a continuous process</p>	<p><i>'Information from the past be stored and updated as the climate and technology cycle repeats itself.'</i></p> <p><i>'Animal health advice is often lacking technical rigour. Some outdated information and advice continues to be provided on some topics.'</i></p> <p><i>'[provide] more relevant information on all topics as more study is performed.'</i></p>	<ul style="list-style-type: none"> • Ensuring the accuracy and quality of information to be published is the first step. Keeping it up to date and relevant is an ongoing function/activity.

Suggested Improvement	Key quotes	Further insights and implications
Target a wider audience	<p><i>'Broader engagement with all producers.'</i></p> <p><i>'[provide] some basic details for small producers like us who don't really understand the industry.'</i></p> <p><i>'More information applicable to small producers and hobby farms.'</i></p>	<ul style="list-style-type: none"> • Provide content for all categories of stakeholders, or clearly communicate to which stakeholders the program is targeted and manage expectations accordingly.
Play a more prominent role in event promotion	<p><i>'Event promotion that is better set out with information and links.'</i></p> <p><i>'Promoting field days/communication media that present findings of research and producer practices which clearly demonstrate economic, livestock and environmental sustainability and improvement.'</i></p>	<ul style="list-style-type: none"> • There is an indication that advertising and promotion of upcoming events through FutureBeef tools could be improved. • In addition, its suggested that emphasis be directed toward the better targeted and potentially more beneficial events.
Feature potential impact on target businesses' bottom line	<p><i>'Focussing in more on how your article's/topics really impact the bottom line of the businesses of your target audience.'</i></p> <p><i>'Focus on areas of industry growth and continue showing how change leads to financial and productivity as well as environmental benefits.'</i></p>	<ul style="list-style-type: none"> • As for event promotion, FutureBeef content should clearly benefit the bottom line or other business objectives.
Provide more content in eBulletins to reduce unnecessary click-throughs	<p><i>'... more details on email instead of just links on a page.'</i></p>	<ul style="list-style-type: none"> • Rather than just a bare title or curt sentence, it is suggested that a brief summary is provided along with the link to the full article. • Links generate click-throughs that can be counted with the assumption that this is a useful measure of interest. However, this does not measure whether the reader has enough information to gauge interest?

Suggested Improvement	Key quotes	Further insights and implications
Wherever possible, deliver content in mobile friendly formats	<p><i>'Easier to read on mobile phone.'</i></p> <p><i>'More mobile user friendly.'</i></p>	<ul style="list-style-type: none"> • The increasing reliance on mobile devices makes this suggestion self-evident. • For some remote stakeholders, internet connectivity may only be available through mobile devices.
Hard copy should be reconsidered	<p><i>'B&W print-off versions (a tab for this) so those of us who prefer to read hardcopy can.'</i></p> <p><i>' "Tweak up" the hard copy.'</i></p> <p><i>'Bigger font for print'</i></p> <p><i>'I regularly buy QCL and NQR so get a "hard copy" to graze over when time permits.'</i></p>	<ul style="list-style-type: none"> • Printed copy has some advantages over electronic formats. • It can be read away from the office in rooms large and small, and in the absence of internet connectivity. • It is easily shared and does not slide off screen and out of sight, though it may be buried in a pile of papers or borrowed forever.

FutureBeef stakeholders provided a range of suggestions for improvements to the FutureBeef communication tools. The following recommendation highlights several suggestions the authors consider of higher priority, but all suggestions should be considered.

Recommendation 12. That the FutureBeef team consider the suggestions provided by stakeholders and in particular consider:

- (a) improving the organisation of the website's content and search functionality to improve the user experience,***
- (b) enhancing the value of eBulletins by providing brief summary of referenced articles to minimise unnecessary 'click-throughs',***
- (c) increasing the promotion of FutureBeef tools and content through existing communications by encouraging further distribution through personal networks (forwarding emails, 're-tweeting', 'likes', etc.),***
- (d) further customising content for specific regions (e.g. adjusting for seasonal differences, addressing regional issues, using local case studies),***
- (e) increasing the number of webinars and the range of topics addressed, and***
- (f) developing all future content in friendly formats and converting existing high-usage reference material into a smartphone/tablet accessible format.***

In addition to the suggested improvements outlined in the previous section, respondents to the online survey suggested additional topics for future content. These are listed in

Table 35 in alphabetical order.

Arranging the topics in priority order or rating the topics was not possible nor appropriate given the current project methodology, however priority order should be considered before development of content is undertaken.

Several of these suggestions are generic, and some information is likely already available perhaps indicating a difficulty in finding or sourcing that information, or a broader lack of understanding of what is available through the FutureBeef program and elsewhere.

Where provided, relevant quotes expanding on the topics have been included in the following table. Generic topics without detail have been included in the table to indicate non-specific interest in the subject. A follow-up evaluation might tease out specific or targeted interests within those topics.

Table 35. Topics suggested for consideration in planning a subsequent FutureBeef program.

Suggested topic	Illustrative quotes
Agistment	<i>'With our property reliant on allowing other people's cattle on our property I suppose some support about this may be useful.'</i>
Animal health and welfare	<i>'Pain relief'</i>
Backgrounding	<i>'More business and production [information] on backgrounding.'</i>
Breeding and genetics	<i>'Where breeding programs are headed and why.'</i> <i>'... look at what American farmers are doing and how it could be used [here]'</i> <i>'Bull selection'</i>
Carbon farming	<i>'Carbon farming opportunities.'</i> <i>'Tools to record carbon emissions/ sequester carbon and reduce footprint.'</i>
Chemical use	
Drought preparedness and management	<i>'Drought proofing'</i> <i>'Drought feeding guides'</i>
Exports	
Feeding and nutrition	<i>'More on supplements'</i> <i>'More on antibiotic free growing options'</i> <i>'Mineral supplements - comparison/ benefits /when to use which etc (how they can complement to save \$).'</i> <i>'Some nutrition info for basalt country.'</i>
Feedbase management	<i>'Pasture fertilisation & productivity trials particularly for Buffel pastures.'</i> <i>'Multi species pastures and the benefits'</i> <i>'Pasture, grazing and nutrition for coastal areas.'</i> <i>'Pasture management in variable climates.'</i> <i>'Importance of groundcover.'</i> <i>'Monocultures are not sustainable. i.e. Buffel.'</i>
Financial literacy training	<i>'How to financially diversify your grazing operation - shares, property etc.'</i>
Future impacts on the beef industry	<i>'e.g. Beef in a future warming world. Including the benefits from methane mitigation.'</i>
Future vision for the beef industry	<i>'10-year scope in cattle production for Australian export.'</i>
Livestock husbandry	<i>'Benefits of tailing weaners.'</i> <i>'Heifer management.'</i>

Suggested topic	Illustrative quotes
	<p><i>'Yard education.'</i></p> <p><i>'Self-herding.'</i></p>
Maintenance of the environment	<p><i>'Water retention methods.'</i></p> <p><i>'Biodiversity.'</i></p> <p><i>'Reef credits for grazing.'</i></p> <p><i>'Land improvement.'</i></p>
Organic farming systems	<p><i>'Organic benefits.'</i></p>
Pest and weed management	<p><i>'Heartleaf control and support.'</i></p>
Regenerative agriculture	<p><i>'Regenerative farming grazing practices.'</i></p> <p><i>'Stories on regenerative agriculture.'</i></p> <p><i>'Regenerative Agriculture in extensive regions.'</i></p>
Reproduction	<p><i>'More information on driving profitability through reproductive performance.'</i></p> <p><i>'...any information on calving, problems, difficulties, calf rearing etc.'</i></p>
Soils	<p><i>'Concentrate on soil health.'</i></p>
Succession or estate planning	<p><i>'... more resources and/or case studies around succession - it's a common topic and some case studies around how other families are tackling successfully or otherwise would give great insights.'</i></p>
Tactical decision-making tools	<p><i>'... e.g. a very up-to-the-minute [report] on climate and resultant conditions, how best to go forward relative to known ground cover (access satellite imagery).'</i></p>
Technology updates	<p><i>'Updates of technology, accessibility/usability of that technology across the whole industry/country [including in] remote areas.'</i></p> <p><i>'As much information on old and new technology [as it] becomes available in the future.'</i></p>
Trading	<p><i>'More business and production information on trading cattle.'</i></p>

Recommendation 13. *That the FutureBeef team undertake or commission an evaluation process of the suggested topics to identify those of highest priority and demand, and these be included in forward planning and delivery.*

Table 36. New roles or functions suggested for consideration in planning any subsequent FutureBeef program.

Role or function	Quotes
List of service providers and suppliers	<p><i>'List of contacts for each region, Vets, agents etc.'</i></p> <p><i>'Links to consultants and services.'</i></p> <p><i>'Reliable suppliers of reliable solar pumps.'</i></p> <p><i>'Reliable long lasting gate alarms.'</i></p>
Training and professional development	<p><i>'Continue sharing and holding professional development in the regions.'</i></p> <p><i>'Comprehensive course covering how to improve a grazing business.'</i></p> <p><i>'Producer packs that cover the top couple of issues all together.'</i></p> <p><i>'More industry training and updates.'</i></p> <p><i>'Subsidised courses.'</i></p> <p><i>'Online training modules for a basic certification.'</i></p> <p><i>'...giving producers the tools and skills to run their own trials on-farm if they are curious about something but aren't quite ready to undertake change involving outsiders, showing them how setup, measure and assess outcomes.'</i></p>
Development of the next generation	<p><i>'Young grazier network/program similar to the NSW DPI young farmer program.'</i></p> <p><i>'Encouraging young people into the game.'</i></p> <p><i>'Young children learning about the future of beef.'</i></p>
Revolving schedule of seasonal activities	<p><i>'Have a background yearlong schedule of activities and bring them to the fore and go over their details as they need to be done in real time.'</i></p> <p><i>'Provide relevant information prior to the seasonal change to allow property owners to try or adapt changes before the season finishes.'</i></p>
Adoption practice	<p><i>'Communication remains the key, adoption remains the challenge.'</i></p> <p><i>'... move into methods of adoption and addressing barriers to change.'</i></p>
Guides to using tools promoted by the FutureBeef program	<p><i>'Information on how to use the various tools on the website.'</i></p>
Instagram	<p><i>'Instagram posts?'</i></p>

No attempt has been made to check if these proposed roles are already being delivered. If they are then additional promotion or adjustment may be required so they are recognised by the relevant stakeholders.

Recommendation 14. That the FutureBeef team consider the new roles and functions (or expand existing functions) as suggested by stakeholders and specifically consider:

(a) developing lists of service providers (e.g. Vets, rural supplies outlets, agronomists, specialist equipment suppliers, installers and maintenance contractors) that can be filtered by type and region,

(b) developing and delivering (or having delivered) industry training and professional development courses specific to the beef industry, and

(c) Refreshing the calendar function to support planning for forthcoming management activities by displaying an annual cycle of regionalised reminders.

INTERVIEW THEMES AND RESPONSES TO PRACTICE CHANGE

Interviews were undertaken by phone or Zoom video conference with 19 of the online survey respondents. Whilst the sample was small in comparison to the 200+ respondents who completed the online survey (10%), the interviews were useful in gaining greater depth in understanding of the responses. The interviews provided further explanation of the types of practice changes influenced by FutureBeef and how FutureBeef tools were used to influence this. The interviews also explored the future needs for FutureBeef to support or supplement the data collected in the online survey.

INTERVIEW DEMOGRAPHICS

Twenty-seven survey respondents were sent an email to request their participation in an interview, of which 19 consented and participated in an interview. The demographics represented in the interview sample included:

- 16 participants who had undertaken a practice change and 3 who had indicated an intent to implement a practice change.
- 17 participants who were producers/pastoralists, 1 seedstock producer and 1 public service provider (who also had some cattle).
- 15 participants who were from Queensland, 3 from Western Australia and 1 from the Northern Territory.
- 12 male and 7 female interview participants.
- Represented a herd size ranging from 60 to 4,000 head, with an average herd size of 834 head.

SUMMARY OF THE INTERVIEW PRACTICE CHANGES

Interview participants were asked to describe a key practice change they had implemented as a result of FutureBeef. These examples were then explored in detail throughout the interview to gain an insight into the changes made, decision making influences, tools and support used and benefits of the change. Table 37 provides a summary of the key practice change themes explored in 18 of the 19 interviews, prompts and triggers, tools used, benefits and supporting quotes. The remaining interview failed to provide specific details of a practice change or the expected benefits and is therefore not included in the below Table. Benefits of practice changes are explored in the producer case studies. These will be detailed in the case studies and supported by evidence where available.

Table 37. Interview practice change themes, prompts/triggers for change, FutureBeef tools used, benefits and supporting quotes.

Practice change (count) • Further description	Prompt for change • Specific trigger(s)	FutureBeef Tools used in decision	Benefits of practice change	Supporting quotes
Practice changes implemented				
Phosphorus supplementation (3) <ul style="list-style-type: none"> • P supplementation during wet season • Lick formulation • Use as a self-herding tool 	Low rainfall area and desire to improve cattle. Efficiency <ul style="list-style-type: none"> • Articles read and changing feed company 	FutureBeef webinars	<ul style="list-style-type: none"> • Increased production and weight gain. • Increased fertility by number of cows getting back in calf. • Maximising weight gains of grower cattle off different feed types. • Better cattle condition. • Ability to use licks as tool to move cattle to control grazing pressure (self-herding). 	<i>'The research that has been done over the years and reading about it has encouraged me to get phosphorus into my lick program and through the wet season was important. I got a handy kick along by reading articles that FutureBeef put out and even some of the events they have had on.'</i>
Implemented pain relief (2) <ul style="list-style-type: none"> • Use of pain relief drugs in branding, castrating and de-horning 	Welfare and desire to not cause undue harm. Drive for a quality product	Pain relief article accessed on FutureBeef website and webinars/webinar recordings	<ul style="list-style-type: none"> • Reduced stress on animals. • Improved handling. • Reduced OH&S risks for producers. • Improved ease of, and time taken in, mustering 	<i>'We have been looking at doing something welfare wise with the cattle when branding and marking. We want to do what's best by the calves' welfare wise.'</i> <i>'I looked at the three choices Tri-Sulfen, Buccalgesic and Metacam. It was around that time there was a story from FutureBeef. It had a run down on the pros and cons. As a result</i>

Practice change (count) • Further description	Prompt for change • Specific trigger(s)	FutureBeef Tools used in decision	Benefits of practice change	Supporting quotes
			<p>afterwards with better mothering and less sulking from calves.</p> <ul style="list-style-type: none"> • Less inflammation. • Heavier calves at weaning. 	<p><i>of reading that information we decided to give it a go this year. We decided to go with the Ilium Buccalgestic.'</i></p>
Early weaning and supplementary feeding (2)	Drought	FutureBeef website articles accessed via Facebook® or eBulletin	<ul style="list-style-type: none"> • Breeder condition scores and, maintaining them higher than you would if you had left the calves on. • Improved breeders' ability to cycle and increased conception rates. • Improved calf nutrition led to increased growth and improved survival rates. • Improved prices received for weaners. 	<p><i>'We moved from southern NSW originally to central Queensland and had plans on how to run the place but unfortunately the seasonal conditions have not been favourable. So [we were] forced to wean much earlier than [we] originally thought [we] would be weaning. Some of the articles we read in FutureBeef helped us. What kilos and what nutrition levels we should be applying and how to do that with the rumen function. It wasn't the only source of information we sought. We get as much information as we can and take out the best bits and what suits our operation.'</i></p>
Molasses feeding and calf rearing strategies (1)	Drought • FutureBeef article	FutureBeef article accessed via Beef Central.	<ul style="list-style-type: none"> • Money saved. • Cows have a rest and are ready for 	<p><i>'I saw the article there, then did a trial on a smaller scale and then I thought this is working</i></p>

Practice change (count) • Further description	Prompt for change • Specific trigger(s)	FutureBeef Tools used in decision	Benefits of practice change	Supporting quotes
		Website accessed from FutureBeef eBulletin	winter and get back in calf. • Calves become more aware of yards and people thus quietening them down.	<i>and I'm saving money so made me realise I've got to do more of it on a bigger scale.'</i>
Supplementary feeding (1)	Drought	Feed cost calculator	<ul style="list-style-type: none"> Kept cows in good condition. Kept cows cycling. Kept operation functioning whilst it was tough. 	<i>'I implemented changes around livestock nutrition and supplementary feeding in response to drought. FutureBeef influenced how I went through the drought.'</i> <i>'I used the feed cost calculator. The effectiveness and cost of feeding and especially as it was protein I was after.'</i>
Switch from a breeding to trading operation (1)	Drought • Very dry year in 2017	Accessed photo standards for pasture monitoring from FutureBeef website	<ul style="list-style-type: none"> Improved profitability of cattle enterprise. Improved pastures. Improved environmental values of land. 	<i>'FutureBeef website has been good for accessing information.'</i> <i>'Last year there wasn't enough rain for us to buy any cattle, this year we will. When you start buying cattle you want it to move up a grade and you need to ensure you have enough grass so things like Photo Standards for pasture and the amount of grass that is in pastures. We found them by DAF officers telling us if you go here [FutureBeef website] you will find them. If you want to know if there</i>

Practice change (count) • Further description	Prompt for change • Specific trigger(s)	FutureBeef Tools used in decision	Benefits of practice change	Supporting quotes
				<i>is 4 tonne to the acre or 8 tonne to the acre, this is where you will find that information.'</i>
Pastures improvement - introducing legumes(1)	Desire to improve pasture management	FutureBeef website, webinars/webinar recordings and videos.	It is a long-term project. Goals are long term improvements to the soil and increased carrying capacity.	<i>'I have a thirst for knowledge and am constantly learning all the time.'</i> <i>'I can improve my pastures by adding in legumes. I spoke with a guy to test my soils and take cores to test pH at depth. Mapped soils and now know pH which I can keep for future reference. FutureBeef has shown me how to map it. How to do that came from watching FutureBeef videos.'</i>
Planted Leucaena with use of banded fertiliser and Spinnaker® herbicide (1)	Focus to improve nutrition • Field day	FutureBeef eBulletin	Improved Leucaena establishment	<i>'The use of Spinnaker® really improved planting success, without that herbicide I would have wasted money and time'</i>
Rats tail control (1) • on own property and as advice given to producers in role as a council pest control officer	Rats tail on property. • Case studies	Rats tail article and case studies on FutureBeef website and webinar.	<ul style="list-style-type: none"> • Less rats tail. • Saving money. • Not wasting money and chemicals. • Better pasture which then makes better cattle. • Improved pasture productivity. 	<i>'It was through Wayne Vogler, who was a research officer for DAF who worked in rats tail control. He had 4 case studies he put up on FutureBeef, he had the best treatments of what seemed to work after his research and what was the best way to control it. It was one of the forums on FutureBeef... I use it when working with other producers in the area and I refer them back to that forum.'</i>

Practice change (count) • Further description	Prompt for change • Specific trigger(s)	FutureBeef Tools used in decision	Benefits of practice change	Supporting quotes
			<ul style="list-style-type: none"> Improved environmental values by using less chemicals. 	
Pasture dieback and breeder management (1)	Pasture dieback spreading across property.	Website and field days	Trying to do the right thing by breeder and country management.	<i>'Pasture dieback is not a quick solution, ... went to the field day and worked out I had it, now trying to use information to at least keep some production going.'</i>
Breeder management and herd recording software (1)	Questions raised by webinar	Webinar	<ul style="list-style-type: none"> Improved understanding of breeder performance More informed decision making. Improved efficiency. 	<p><i>'The trigger was a FutureBeef webinar on how much do you know about your breeders and how do you make your management decisions?'</i></p> <p><i>'I've gone to a lot of data recording [of cattle] ...I have invested in a program and updated all my scales so I can record all the weights of my calves regularly to see which of my cows are performing by the weight gain of my calves. This one has more flies, she might be hairier, and this one has cleaner skin and this one is attracting ticks and when it comes to culling time, she is an easy pick for culling. I am also recording the time of calving and building up a picture over a few years.'</i></p>
Using weather forecasting tools and addressing soil compaction (1)	Desire to improve pasture productivity, more effective use of rainfall.	Webinars MetEye	<ul style="list-style-type: none"> Increased ability to read the weather. 	<i>'Prior to watching a webinar on climate, you'd get the long-range forecast and most of it would go over my head. When we tuned into the webinar, he directed us to MetEye as it</i>

Practice change (count)	Prompt for change	FutureBeef Tools used in decision	Benefits of practice change	Supporting quotes
<ul style="list-style-type: none"> Further description Using offset tines over paddocks prior to rainfall to improve water infiltration and aeration in compacted ground. 	<ul style="list-style-type: none"> Specific trigger(s) Webinar 		<ul style="list-style-type: none"> Increased ground cover Improved winter feed reserves, therefore, less need for supplementary feed. Better decisions on fodder purchasing. Ability to wean on time. Changed some paddocks from marginal to productive paddocks. 	<p><i>gives you the rundown of the week and the likelihood of getting the rainfall. As a result of that we have been able to schedule our paddock work around the weather and it is already making a difference to us in regard to ground cover and the amount of available feed. We have been able to target our paddock work a lot better.'</i></p>
Intend to make practice change				
Improving soil and pasture management (1) <ul style="list-style-type: none"> Increased soil and fodder sampling. 	Desire to increase efficiency and effectiveness <ul style="list-style-type: none"> Field day 	Plans to use FutureBeef website	Hoping for improved knowledge, efficiency and productivity.	<p><i>'Hoping to make changes to get more ofay with soils, pasture, and nutrition. Planning to do a lot of soil and fodder sampling. To direct nutrients [that the pastures] need more effectively rather than throwing something at it and missing the mark.'</i></p>
Water quality (1)	Research articles on water quality	Website	Productivity gains	<p><i>'I read quite a few articles that had been posted or followed links through FutureBeef to get to the root articles. I think water quality is fundamental to the success of livestock'</i></p>

Practice change (count) • Further description	Prompt for change • Specific trigger(s)	FutureBeef Tools used in decision	Benefits of practice change	Supporting quotes
				<p><i>husbandry. We as humans like drinking clean water because we know it is better for us and obviously the same is true for livestock.'</i></p> <p><i>'I have been trying for many years to put cleaner water out for cattle in troughs and encouraging producers through my role. Trying to get people to be smarter with their water because when they are, productivity gains will make it worthwhile.'</i></p>

DECISION MAKING INFLUENCE.

The interviews gave further insight and depth of understanding as to how FutureBeef tools are being used by producers in decision making. Key areas explored by the interviews were:

- the prompts and triggers for change,
- stages of influence of FutureBeef tools in making decisions and in the adoption process and
- other sources of support.

Prompts and triggers for practice change

The interviews explored the prompts or motivators for implementing practice change. Responses varied according to the types of practice change implemented and could be broadly grouped into four key themes:

- a desire for improved productivity, efficiency, quality, or welfare (n=8)
- seasonal conditions/drought (n=5)
- prompted by an article or webinar (n=2)
- weed incursions (n=2).

The trigger for action in most cases was either exposure to a particular article, webinar, research information, case study (n=7) or a particularly dry year or key point during a drought/dry seasonal conditions (n=5). as highlighted in the aside quotes.

'Maybe the catalyst was reading one of these articles where they have done some research. I guess that put me over the edge along with working with the feed company where I get my dry lick made.'

'We basically said we can't survive doing what we have always done. We had no choice. [We] needed to make a change as otherwise [we] were not going to survive.'

This highlights the importance of providing timely, targeted and relevant information in influencing practice change. This is particularly the case during adverse times such as drought when producers rely on information sources such as FutureBeef to assist in their decision making in response to the challenging situations they are experiencing. As highlighted in the quote below.

'FutureBeef influenced coping with drought.... I used the feed cost calculator. The effectiveness and cost of feeding and especially as it was protein I was after. I used that calculator a lot.'

Recommendation 15. 'During periods of adverse conditions, for example drought, FutureBeef should prioritise and highlight resources that can support northern beef stakeholders to confront and manage those conditions.'

Influence on decisions

Participants were asked to indicate how and why FutureBeef had influenced their decision to make a practice change. The most frequent response (n=12) was that FutureBeef, and its tools provided confidence to their decisions. FutureBeef tools also influenced decisions by providing information to support their decision (n=8), by raising awareness/providing a trigger (n=6) and by motivating them to action (n=5). Table 38 provides further details on the aspects of FutureBeef that influenced this decision, with supporting quotes.

Table 38 How and why FutureBeef influenced practice change decisions and supporting quotes.

How FutureBeef influenced practice change decisions	Why	Supporting quotes
Provided confidence	<p>Confidence was provided through the technical information, tools, articles and stories accessed through FutureBeef. Participants mentioned several key features that installed confidence in FutureBeef:</p> <ul style="list-style-type: none"> • unbiased nature of the information, • that the information is backed by science and trial results, • is relevant to the northern Australian context, • is supported by MLA, • is practical, and • shares experiences of other producers. 	<p><i>'It will provide confidence by all the study and research that has been done, everything has been quantified through trials. I'm the sort of person who if I'm going to change something there has to be a quantifiable reason why. Not just word of mouth.'</i></p> <p><i>'FutureBeef helps to back up and to be confident to implement management change. Because it is industry based, tailored to northern Australia, the practicality, it is supported by MLA, tools and resources it provides and is backed by scientific research.'</i></p> <p><i>'It gave us the confidence to know we were choosing the right product for our business and the information we got around length of time we get coverage from the drugs was really good. It was something we were not aware of at the time, I had thought they were all pretty much the same.'</i></p>
Supported decision	<p>Where FutureBeef supported decisions, it was often used as:</p> <ul style="list-style-type: none"> • a prompt to find out more, • gave technical details, • an avenue to other producer's experiences, or • gave further details regarding other sources of influence or sources of support (e.g. training, consultants). 	<p><i>'We knew we had to do something different, and it provided motivation or support to provide new ideas.'</i></p> <p><i>'Timelines of the information. It's one of the things I like about FutureBeef – it puts out information that is relevant to the season and relevant events that are going on and that prompts you to go out and get more of that information you need.'</i></p> <p><i>'Mapped soils and now know pH which I can keep for future reference. FutureBeef has shown me how to map it. How to do that came from watching FutureBeef videos.'</i></p>

How FutureBeef influenced practice change decisions	Why	Supporting quotes
		<i>'With all the other information that we sought; we were able to develop a bit of a nutritional program with [a nutritionist]. There were some other people in FutureBeef that said they took the plunge and did it and were able to do it successfully.'</i>
Raised awareness/trigger	By raising awareness of issues and was a trigger to explore ideas in more detail	<i>'Sat down and thought it raised good points, how can I improve things?'</i> <i>'Prompt and show – give ideas, it's where the idea starts which then leads to research.'</i>
Motivated into action.	Information, tools and resources are accessed and used to provide ideas and motivation for change.	<i>'I have used all the tools to get motivation.'</i> <i>'We knew we had to do something different, and it provided motivation or support to provide new ideas.'</i>

How are FutureBeef users accessing and using the tools to influence practice change

The interview results supported the online survey findings that the website, webinars and webinar recordings, and eBulletin were the key FutureBeef tools used in supporting practice change (see Figure 14). Further to this, specific 'articles' which had been read were attributed to a practice change, these were accessed from and may be attributable to either the website or eBulletin. Rural press feature articles were not specifically mentioned as an influence on practice change by the interview participants. Some interviewees also raised field days as a key contributor to practice change, which they linked to FutureBeef. It appears that some northern beef participants do see the collective of activities provided by state agencies as part of FutureBeef, which should not be seen as a negative result.

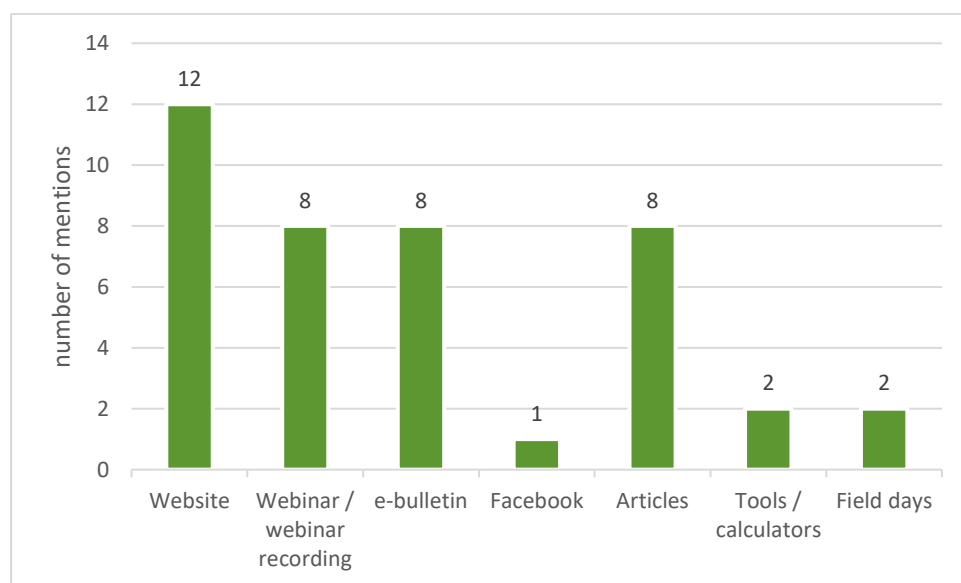


Figure 14. FutureBeef tools that have influenced practice change.

Both live webinars and recorded versions were raised as influencing practice change by interview participants. Those who viewed the live webinars, raised the importance of the question and chat function to ask questions of the presenters and the interactive nature this provides. They also liked the timing of webinars at lunchtime. See the supporting quotes below:

'Webinars are good at ensuring there is question time. That is as valuable as the content itself.'

'The good thing about webinars is that because you have actual people, you can ask questions. It's not like a YouTube video.'

'I love that they tend to do them at lunch time. I find that I will tend to make time for the webinars but hubby not so much. Whereas at lunchtime, I sit him down with his lunch and he sits through the webinar.'

Poor internet connectivity was raised by several people as the reason why they do not view live webinars and instead watch the recorded versions. Participants also liked the ability to re-watch recorded versions of webinars.

The eBulletin and social media platforms (particularly Facebook® and LinkedIn®) were identified as tools for raising awareness of FutureBeef content and activities and directing people to the FutureBeef website and or webinars.

'Facebook and email are like your entry port to the website, to then go and flesh it out in more detail on the website. It's a bit like the specials board out the front of a restaurant, you see it and go maybe I do feel like a steak for lunch, and you go and look at it.'

Of the interview participants there appeared to be two groupings of how FutureBeef users make use of FutureBeef to support practice change decisions. These can be broadly described as 'Active seekers' (n=13) and 'Interest was triggered' (n=8). Comments made by respondents in the online survey support these user groupings, although it was not possible to allocate online survey respondents into the groups due to the structure of the survey questionnaire.

Active seekers – this group described using FutureBeef as a knowledge resource to support a practice change decision they had made or were considering implementing. They indicated a process of seeking more information, using tools or information to support or provide confidence to that decision. Some described situations where they accessed FutureBeef webinars or specific tools or articles on the FutureBeef website or by another source of support such as a field day, training course or advisor. As described in the aside quotes.

'It's an information tool. I went to the FutureBeef website to get the listings of what I wanted, the amount I needed per kilo of calf, where I knew they had a table in their knowledge centre. It was the decision that got us over the line when I costed it out and worked out what we needed.'

'Accessed photo standards for pasture monitoring from FutureBeef to enable fodder budgeting. Takes out the speculation... DAF field officers told us about it [photo standards] and were given print outs at a workshop and said this is on FutureBeef. It's like a library, you just know it is there.'

Interest was triggered – this group described their interest (awareness) as being triggered by a topic, event or article promoted in a FutureBeef eBulletin or social media post, which they then clicked on or read to gain more information. This is their pathway into the FutureBeef website, webinars or other events promoted by FutureBeef as illustrated in the aside quotes.

'Found them at the right time. Stumbled across it on Facebook.'

'The Facebook page was the main thing. It is where I find it first and then I will follow it up. Then I follow the links or events and follow up and then I will either forward it on to our group or email it.'

'Website. I clicked through from eBulletin to a page on drought feeding and weaning calves / rearing calves.'

Participants described liking the fact that FutureBeef is there as a resource if they need it, that they can go and look things up, re-watch webinars/videos and access relevant links through FutureBeef. As highlighted in the below quotes.

'Having the resource there any time of the day or night. I can get on the computer put it in and it's there. You can always go back and research and use it as a reference guide. Once I got the knowledge and did a bit of research myself, I used FutureBeef as a reference guide. Generally, I look at it when I get my email, if there is nothing that catches my eye, I put it in a folder and when I get time on a rainy day I go back and open them up.'

'New technology and solar – at the time we saw the webinar we didn't have time to address it. Now we have our paddocks working properly we have time to go back and address it. You know it is sitting on the website and you can go back to it and watch it again. The webinar is the catalyst but without the links and everything else it would potentially fall into a black hole. A place where you can reinforce what you have heard.'

It was highlighted that many users are accessing FutureBeef on mobile devices including mobile phones and tablets. This was due to a range of reasons including the desire to find information there and then when needed and or the issue of poor internet connectivity. Some mentioned needing to drive to an area where they can get coverage to access FutureBeef communication tools. This supports comments made in the online questionnaire and stresses the importance for the FutureBeef communication tools to be in mobile compatible formats and possibly accessible as an app.

'Make it easier to read on a mobile phone because we don't have the internet connection, I have to go up the hills or into town to do it and I've only got my mobile phone to do it on and that makes it so much harder. They could probably expand it a bit more and make it bigger... I just don't have the internet connection to be looking at webinars and videos I have tried but it just keeps timing out.'

'Website being mobile compatible is very important as 90% of the time, that is what I am using to look it up. If I have something I want to know I'll look it up straight away, I don't put it in a box for consideration later on, otherwise it won't happen.'

Other sources of information

FutureBeef is not the sole source of support for producers implementing practice change, as supported by the online survey results where on average 58% of the influence for a practice change was attributed to FutureBeef. The interview participants were asked to list what other resources were needed to help them make their practice change including other information, support, tools and people. In most practice change examples described by producers, they drew on a wide array of sources for help in making decisions and implementing practice change. There were no instances where FutureBeef was the sole source of support for practice change. This is consistent with commentary from the online survey.

Other sources of information used in decision making included:

- talking with other producers,
- use of service providers (including vets, nutritionists, agronomists, DAF extension officers, consultants, rural produce shops and sales reps),
- attending training courses, conferences, workshops and field days,
- reading research reports, articles and case studies,

- MLA, and
- beef producer groups and industry groups.

Supporting quotes are listed below.

'Combination of using places like FutureBeef, as it's got lots of information and MLA. I have a good relationship with our science guys and talk to them quite frequently over other things. We went to Beef Week, my husband went to the DAF supplementation talk and chatted to the guys there, he got good information out of that.'

'It was really great to be able to read something on FutureBeef and then to be able to discuss that at our meeting as everyone was basically doing the same sort of thing at different levels, small or big. They provided prompts for discussion and we could send out those emails.'

Influence on the adoption process

An adoption pathway model (Taluğ and Tatlıdil, 1993²²) was used to explore the contribution that FutureBeef had on the adoption of practice changes. The model was explained to the interview participants and they were asked to reflect on and indicate where in the adoption pathway they felt FutureBeef assisted them. Stages of the adoption pathway included awareness, interest/knowledge seeking, evaluation (how does it relate to my property), testing (trial and follow up) and adoption of new practice (dis-adoption of the old practice). Figure 15 shows the relative contribution of FutureBeef to the different stages of the adoption pathway as nominated by interviewees. Interviewees were able to select more than one stage.

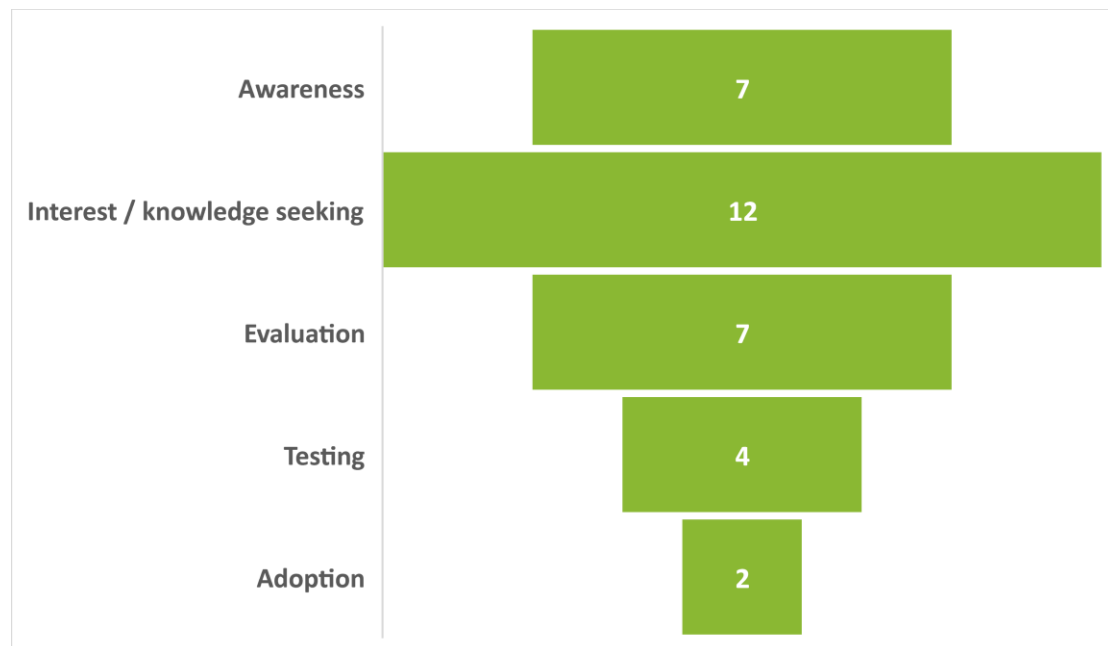


Figure 15. Frequency of FutureBeef influence in adoption process of practice change.

²² Taluğ and Tatlıdil, 1993 describe five stages people move through in the process of adopting innovation. These stages can be characterised as awareness, interest, evaluation, testing and adoption.

FutureBeef was shown to have greater influence in the earlier stages of the adoption process, particularly the awareness, interest/knowledge seeking, and evaluation phases. This result was not unexpected given the nature of FutureBeef as an online knowledge and information resource.

This presents an opportunity for FutureBeef to investigate alternative methods of delivery to influence the later stages of the adoption pathway, particularly those that facilitate peer to peer learning. Many producers indicated that they learn from and are influenced by other producers and made the following suggestions:

- Develop more case studies that share producer stories of adopting new practices.
- Include producer's discussing their experiences in webinars in addition to technical experts.
- Support applied field trials (producer demonstration sites) or focus farm approaches that can be shared and followed through FutureBeef.
- Provide links to relevant training courses and service providers (both public and private) with articles to assist in the implementation of new practices, ideas and technology.

One-on-one extension and field days were also raised throughout the interviews as desired methods of extension.

Recommendation 16. That FutureBeef explore additional methods of delivery to support the later stages of the adoption pathway.

This may include:

- facilitating opportunities for peer-to-peer learning through targeted case studies, sharing of producer stories of change, producer webinars, or in person events,
- supporting the trial phase of adoption through promoting, supporting or sharing of findings from producer demonstration sites, and
- providing links to relevant training or service providers with articles to assist in implementing new practices.

One of the few positives to arise from the COVID-19 pandemic has been the adoption of, and support for, online video communication. This has facilitated not just formal interactions, but enabled social contact otherwise prevented by physical separation. Survey respondents have indicated how online interactions have saved them travel time, allowed them to participate in events that would otherwise be uneconomic to attend and allowed two-way interaction with specialists and other producers.

The authors believe this presents an opportunity, especially for remote and isolated producers, to harness technology to support the latter stages of the adoption pathway. As described in the following breakout box, FutureBeef could play a supporting role in developing and delivering virtual Producer demonstration Sites.

Box 1. FutureBeef opportunity: virtual Producer Demonstration Sites

In many situations, an important component of the evaluation and testing stages of adoption is contact with other stakeholders who have either adopted a practice being considered or are also considering that practice. This element is central to producer demonstration sites (PDS) where *'livestock producers work in peer-to-peer groups to pursue new skills, knowledge and management practices applicable to their own commercial livestock production systems.'*

Many beef producers in northern Australia manage large, extensive properties and consequently are quite isolated from other producers with whom they could form a PDS group. The acceptance of online video as a communication medium provides a potential opportunity for FutureBeef to facilitate virtual PDSs bringing together producers who might otherwise not be able to form a group due to distance.

While internet connectivity may be a barrier for some interested participants, successful groups would extend FutureBeef's contribution to the evaluation, testing and adoption stages of the adoption pathway.

BARRIERS TO PRACTICE CHANGE

Interview participants were asked to reflect on a practice change they have intended to make but have not yet implemented. These topics included technology (n=3), water management (including infrastructure and monitoring) (n=4), subdivision of paddocks for grazing management (n=2), improving pasture quality and regenerative agriculture, contouring, introducing a new livestock enterprise, using BREEDPLAN and more effective mustering.

Participants then reflected on the key barriers to these changes (Figure 16). Capital, time and infrastructure were the key barriers raised followed by labour, skills and value proposition.

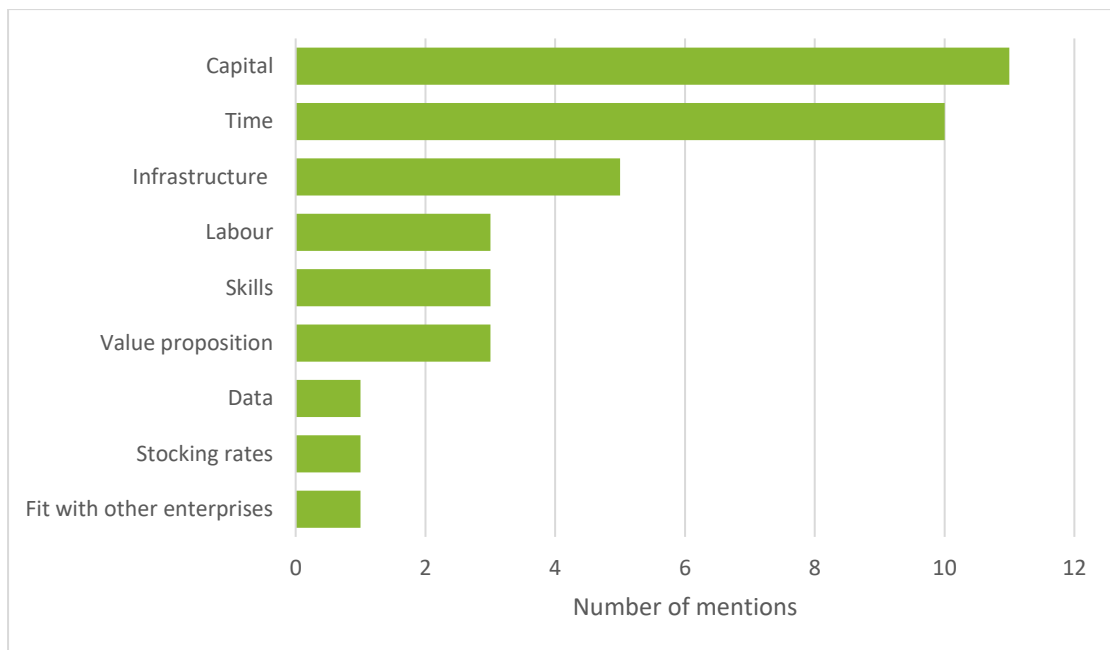


Figure 16. Barriers to practice change listed by interview participants.

Poor Internet connectivity across the property was also raised throughout several interviews as impeding the uptake of new technologies they had heard about through FutureBeef. This was particularly relevant to virtual fencing, remote weighing systems and use of water monitoring systems.

'Technology all the new things such as cattle tracking, virtual fencing. It would make such a big difference if [we] had virtual fencing as we would be able to do cell grazing. We need a solution to have connectivity over the whole place.'

In most instances, participants felt that FutureBeef could not help them to overcome their barriers to practice change, especially those relating to time, capital and infrastructure. Suggestions that were given included:

- FutureBeef listing grants and funding sources available where they relate to specific management practices, regions or technologies,
- sharing of producer stories or case studies of practice change and how they have implemented it,
- listing of service providers or companies that can assist with the implementation of new practices e.g. new technologies.

FUTURE NEEDS FOR FUTUREBEEF

Towards the end of the interview participants were asked to reflect on the future needs of FutureBeef. This included a discussion of the following areas:

- What would they like to see in a new FutureBeef program?
- FutureBeef tools they wish to see continued.
- Further comments about FutureBeef.

As the interviews drew on a subset of the online survey participants there was an overlap of ideas and topics that have already been reported in the future opportunities section of the survey results. The information reported below are topics and ideas which were new or different from those raised through the online survey. A combined list of future opportunities for FutureBeef raised in either the online survey or the interviews can be found in Appendix 1.

New ideas

New ideas for FutureBeef roles, functions and content raised by interview participants are listed in Table 39 with supporting quotes for further description.

Table 39 New ideas raised by interview participants for inclusion in a new FutureBeef program.

Suggested idea	Illustrative quotes
Articles, stories and trial results from commercial service providers	<i>'Stories and trials from commercial service providers (e.g. KLR and RCS) if they could be involved and follow what they are doing through FutureBeef.'</i>
Mobile phone versions of tools	<i>'An easier to read website on a mobile phone – make it bigger. I have to go up hills or into town to access it and only have a phone.'</i>
More examples for smaller scale producers	<i>'Would like to see more smaller scale examples on FutureBeef, of costs of establishing legumes. Not just large-scale examples.'</i>
Greater presence of FutureBeef in WA, a visible presence	<i>'Look over the border, on ground research in WA. FutureBeef is more targeted to north Qld and NT. There is a huge area of WA north and south that run different types of cattle, soil and vegetation.'</i>
Following demonstration trials and focus farms throughout the year to share learnings with FutureBeef users	<i>'I am part of the desert uplands program funded by MLA looking at heifer productivity. Recording data on heifer follow through for 3 years. I would be interested in following similar trials along like a focus farm sort of idea and to be able to follow them along. e.g. Wambiana grazing trials.'</i> <i>'Have people on board for on ground trials, established production areas, breeding, or fattening and backgrounding.'</i>
Reinforced the need for both technical (scientist) and producer's experiences to be shared in webinars	<i>'It's good when they have an expert in the field and then an actual farmer shares their experiences. Get the technical jargon and the layman's version. Involving actual producers is a real positive.'</i>

Suggested idea	Illustrative quotes
Provide a place where the relevant legislation and regulation requirements relating to particular topics is located on FutureBeef	<i>'Growing discussion of the levels of legislation, regulation and paperwork required. It is almost impossible to know, it would be really great to have a central point where you could go and have access to that information. For example, currently MLA has some stuff, AgForce also has some. A one stop shop where you could go to say calving and all the information and right down to the relevant legislation would come up including branding, e.g. what's the current legal age you can brand to or castrate to? Is it better to cut or to band and what the options are? Also include education opportunities linked to that such as webinars, or recorded ones.'</i>
Links to grants available to help support adoption of new technologies	<i>'Promotion of grants available on website. At the moment it is pure luck if you happen to stumble across one at the right time. It would be nice when they are doing a piece on new technology if they said keep an eye on these grants depending on what state you are in.'</i>
Practical tips for new producers e.g. cattle husbandry practices, castrating, branding, NLIS tags	<i>'FutureBeef doesn't go deep enough. Need more practical tips and tools and information e.g. NLIS tags – the types of readers, how and where to place the tag in the ear. There is currently no specific information on how you do it.'</i>

Topics

Topics participants raised for inclusion in a new FutureBeef program are listed in Table 40 below with supporting quotes where appropriate for further description.

Table 40 Topics raised by interview participants for inclusion in a new FutureBeef program.

Suggested topic	Illustrative quotes
New technologies including virtual fencing, cattle tracking, drones, water monitoring.	<i>'Technology all the new things such as cattle tracking, virtual fencing. It would make such a big difference if [we] had virtual fencing as we would be able to do cell grazing.'</i>
Connectivity options across the whole property to enable technology uptake	<i>'We need a solution to have connectivity over the whole place'</i>
Solar management	
Cost benefit analyses of new technologies	<i>'Cost benefit analysis of adopting technologies'</i>
Pasture dieback including management	<i>'Dieback management tools. Dieback bus tour looking at the issue. But how relevant is that activity, need to focus on'</i>

Suggested topic	Illustrative quotes
tools, apps for recording it and webinars	<i>smaller local events, rather than major events. FutureBeef could do more webinars to promote this.</i> <i>'There is no app that allows producers to record how big a problem is the issue (dieback, vibriosis, etc). How are priorities set. What are the key issues that need to be sorted out and how can producers align with that'</i>
Grazing management	<i>'Raising awareness of grazing management to maintain ground cover.'</i> <i>'I'd like to see something in there in relation to the importance of managing pastures not only for ground cover but also for carbon sequestration and also for managing the biome under the ground.'</i>
Pastures, legumes and Leucaena	<i>'More on the specifics e.g. the different types of legumes.'</i>
Tree/grass interaction	<i>'Tree grass balance, the amount of grass that grows under different trees.'</i>
Land management, erosion control	<i>'Land management information e.g. how to manage wash outs, erosion and landslides.'</i>
Dung beetles	
Innovations in genetics and genomics	<i>'New innovations in genetics and genomics particularly, where DNA testing can go.'</i>
Welfare and social license	<i>'There is a lot of negative press that is created by extremist groups. We could promote our industry a lot better and try to negate what they do. We know the information, it is just getting it out to the people that need it. '</i> <i>'FutureBeef is doing the right thing by getting on the front foot with social licence.'</i>
Market targets	<i>'Market targets, European cattle not ready for market until 700+ kilograms, new target market. Getting cattle ready to feedlots'</i>
Value adding opportunities	<i>'Value adding opportunities what's out there.'</i>

Tools to be continued

Interview participants either supported the current mix of communications tools (n=5) or raised specific tools they wished to see continued in a new FutureBeef program. The most popular were the FutureBeef website (n=7), Webinars and webinar recordings (n=7) and eBulletin (n=7). As supported by the following quotes.

Other less frequently raised suggestions included a desire for more producer case studies (n=2), more printed materials (n=2), hands on training e.g. field days, seminars (n=2), social media - Facebook® & LinkedIn® (n=2) YouTube® videos (n=1), on ground trials (n=1) and one-on-one extension (n=1).

'I like the way it comes out, what they have now is really good.'

'When I need an answer, the search functions on the website are invaluable. That is all that is asked for.'

'Continue webinars and increase ones they already did. It gives everyone opportunity to attend the training.'

'The eBulletin is concise and set up well, you can flick through or click on it if something catches your eye.'

'I liked the printed Beef Talk as you could pick it up and read it anytime.'

'Hands on training supplemented with webinars, give more people a chance to attend.'

'Would like to see one-on-one extension and visiting producers in person – more effective on ground engagement with producers.'

Further comments on FutureBeef

There was a strong sentiment amongst the interview participants for the continuation of FutureBeef, supporting this earlier finding from the online survey findings. Supporting quotes included:

'It's definitely needed in the industry. It has good tools and is easy to understand, definitely worthwhile keeping.'

'Don't shut them down, I need them. I refer a lot of people to them and need to have more of it. I can't praise them enough for the information they put out.'

DISCUSSION OF KEY FINDINGS AND IMPLICATIONS

FUTUREBEEF'S INFLUENCE ON DECISIONS

FutureBeef tools play an important role in influencing decisions of users in relation to implementing practice change. This is achieved through providing confidence, supporting decisions, acting to raise awareness of an issue/trigger and/or motivating users into action. Whilst FutureBeef is not the only source of influence on decisions, the tools, resources and information it provides is an important factor in producer's ability and choice to implement change.

It is important that a new FutureBeef program continues to address the factors that provide confidence, support and motivation for decisions, and continues to raise awareness provided through the current FutureBeef program. Table 41 highlights these factors and implications for a new FutureBeef program.

Table 41. Features of the current FutureBeef program providing confidence, support, motivation and awareness and implications for a new FutureBeef program.

Key features of current FutureBeef program	Implications for a new FutureBeef program
<p>Provided confidence through:</p> <ul style="list-style-type: none"> • the unbiased nature of the information, • the information being backed by science and trial results, • being relevant to the northern Australian context, • being supported by MLA, • being practical, and • providing shared experiences of other producers. 	<ul style="list-style-type: none"> • Continue to promote best practice management practices for the northern Australian beef industry. • Promote the support of the program partners including MLA. • Ensure a balance of information is backed by technical rigour, science and the latest research as well as practical implications of new technologies, innovations and best practice management. • Provide examples, case studies and stories of how producers are implementing these, and the benefits realised.
<p>Supported decision making by delivering:</p> <ul style="list-style-type: none"> • prompts to find out more, • relevant technical details, • an avenue to other producer's experiences, and • pointers to other sources of 	<ul style="list-style-type: none"> • Continue to produce technical content and tools to raise awareness and help in the implementation of best practice management. • Engage with training providers to signpost them to tools and resources available from FutureBeef that can be used to support their programs and be promoted to their clients.

Key features of current FutureBeef program	Implications for a new FutureBeef program
influence or sources of support (e.g. training, consultants).	
Raised awareness, provided a trigger or motivation by highlighting new ideas, new practices and enabled exploration of these ideas in more detail.	<ul style="list-style-type: none"> • Ensure articles are written in an engaging manner with a focus on what is new, timely and relevant to the season and current industry climate, markets and trends. • Ensure access to tools that help users ‘find out more’, such as links to relevant websites, research, training opportunities, decision support tools, calculators, stories and case studies. • Consider providing lists of service providers (public and private) that can assist users in the implementation and adoption of practice change.

TARGETING DIFFERENT FUTUREBEEF USER GROUPS

There were two different groups of FutureBeef users highlighted by the survey and interviews, the ‘Active seekers’ and ‘Interest triggered’, (see interview results). Table 42 highlights the difference between these groups, the primary tools used by each group and the implications for tailoring FutureBeef engagement to their needs.

It should be noted that herd size and experience (e.g. new to beef production vs experienced) was not a factor in the type of user grouping. The type of FutureBeef user was more a preference in how they seek, use and process information.

An opportunity exists to develop a targeted communication strategy for how FutureBeef engages with the different needs of these user groups. The implications for engagement column in Table 42 provides some useful suggestions for how this may be achieved. In further understanding the key points of difference between these groups and tailoring their communication activities accordingly, FutureBeef can ensure the ongoing engagement of these groups.

Recommendation 17. That the FutureBeef team develop a targeted communication strategy to deliver the communication tools in a way that appeals to the needs of both the ‘Active Seeker’ and ‘Information Triggered’ FutureBeef user groups.

Table 42 FutureBeef user groups, tools used and implications for engagement.

FutureBeef user group	Description	Tools used	Implications for engaging this group
Active seekers	<ul style="list-style-type: none"> • Use FutureBeef as a knowledge resource to support or provide confidence to decisions and to seek further information. • They will deliberately visit FutureBeef to seek what they need it and access the information as they need it. • Influenced by data, evidence and science and stories of success. • Service providers, consultants and training courses may direct them to FutureBeef resources. 	<p>Specific articles, resources (tools and calculators), webinars or videos accessed via the website, webinars and webinar recordings or YouTube channel.</p>	<ul style="list-style-type: none"> • Ensure a user-friendly website in a format that is mobile compatible and well-structured to enable ease of use to find desired content and resources. • Engage with training and service providers to signpost them to tools and resources available on FutureBeef that can be promoted to their clients. • Publish and share results of trials and case studies of successful implementation of new technologies/innovations.
Interest triggered	<ul style="list-style-type: none"> • Their interest (awareness) is triggered by a topic, event or article promoted in a FutureBeef eBulletin or social media post, which they then clicked on or read to gain more information. • They may engage with FutureBeef content through newspaper features and online industry platforms. • They passively engage with FutureBeef and only if their interest is triggered. • Peer to peer learning is influential with this group. 	<p>eBulletin and social media platforms are the primary point of entry to the website and webinars. Newspaper features and other industry platforms.</p>	<ul style="list-style-type: none"> • Continue to use the eBulletin and social media platforms to signpost FutureBeef articles, resources, and points of interest. • Include a what's new section on the website and as a feature in the eBulletin. • Consider the timing of social media posts to gain the best exposure to this target group e.g. lunchtime or evening, when they may be more active on social media platforms. • Stories and case studies from producers may stimulate interest and greater engagement from this group.

PATHWAYS TO FUTUREBEEF RESOURCES

The diagram below (Figure 17) provides a conceptual view of the pathways to FutureBeef knowledge resources. It has been distilled from the online survey responses and interviews and generalises how producers and service providers make use of FutureBeef resources.



Figure 17. Conceptual view of pathways between FutureBeef resources

There are three key tools that provide the knowledge at the core of FutureBeef – the website, the webinars and the FutureBeef YouTube® channel. These are the ‘pot of gold’ and are rated highly by users.

Leading to these ‘knowledge’ tools are what might be called the alert services – the social media platforms, the eBulletin and rural press feature articles. Most important among these is the eBulletin. It is delivered direct to industry, is well received and for most recipients provides an appropriate balance between sufficient information to raise awareness of a topic or issue and the need to not overwhelm with overly long and information dense communications.

Social media platforms play a supporting role in raising awareness both through direct communications from FutureBeef, and their forte, onward sharing with the recipients’ networks. Among the platforms considered, Facebook® is used by close to half of the survey respondents, while Twitter® and LinkedIn® are used by a much smaller proportion of respondents.

Rural press feature articles provide a mix of roles raising awareness and delivering information in an easy to digest format. As a physical medium, they are different to the other forms of communication used by FutureBeef and suffering to some extent as communications in general move toward electronic distribution.

Finally, there are opportunities to enlist and expand the use of third parties to distribute FutureBeef communications. Peer-to-peer distribution in the form of referrals is important not just because it invites someone to access the FutureBeef content, but because its introduction carries added authority. Service providers, both

public and private, do provide peer-to-peer information sharing, but importantly also make use of FutureBeef content in their service delivery to clients.

THE ROLE OF FUTUREBEEF COMMUNICATION TOOLS IN THE STAGES OF PRACTICE CHANGE

Throughout the survey and interviews, it was apparent that the FutureBeef tools satisfied different user expectations and realised outcomes relative to previously described stages of adoption. The following figure (Figure 18) has been constructed to summarise and visualise where the points of influence are and the magnitude of effects for each of the tools. The report authors have used a rating scale from 5 (extremely important; strong evidence that the tool has direct and substantive influence on stakeholders' behaviours at this stage) to 1 (slightly important; some reference to these tools by a minority of stakeholders, generally the use of the tool is low amongst stakeholders). Higher ratings are represented by longer bars shaded in a darker green. Where the authors believed that there was no evidence for the tools being used in that stage, no rating was given.

Figure 18 indicates that website and webinars are the dominate tools within the FutureBeef program. There is evidence from the survey and interviews that both tools provide moderately important to very important support to users of FutureBeef across all stages of the adoption process. The website is the corner stone of the whole program, several users indicated that they had obtained a sequence of information from awareness through to adoption by following information threads within the website. This highlights the importance of having an easily navigable layout and a logical search function for the website. Achieving this outcome, should be a high priority for future iterations of FutureBeef. Furthermore, as the website is the key vehicle in generating interest and conveying knowledge for the program, the relevance and currency of all information on the website should be reviewed thoroughly and frequently.

Figure 18 also attempts to highlight the role that the eBulletin has in acting as the signpost or signaller for the FutureBeef program. There was strong evidence from both the survey and interviews that the eBulletin provides an overarching snapshot of all FutureBeef activities and is instrumental in creating awareness with many users. In contrast tools such as the social media platforms Twitter® and LinkedIn®, provide awareness and signposting for only a small proportion of users who engaged in the survey and generally based on this result would appear to have lower value to the whole FutureBeef program.

The authors are also aware of the potential requirement by one partner for FutureBeef to generate greater influence in the later stages of adoption that lead to the adoption of a new practice. As shown in Figure 18, the website, webinars and YouTube videos provide a mosaic of opportunities, particularly in ground truthing the practice change, its value proposition and relevance for northern beef producers. In particular, the interactive webinars which are a combination of technical information delivery and Q&A for participants provide access for users to move through the later stages of evaluation and trialling by having access to answers and experiences that often emerge in these stages. A key improvement to that interactive webinar format would be to include more producer experiences in trialling (case studies) and adoption if appropriate.

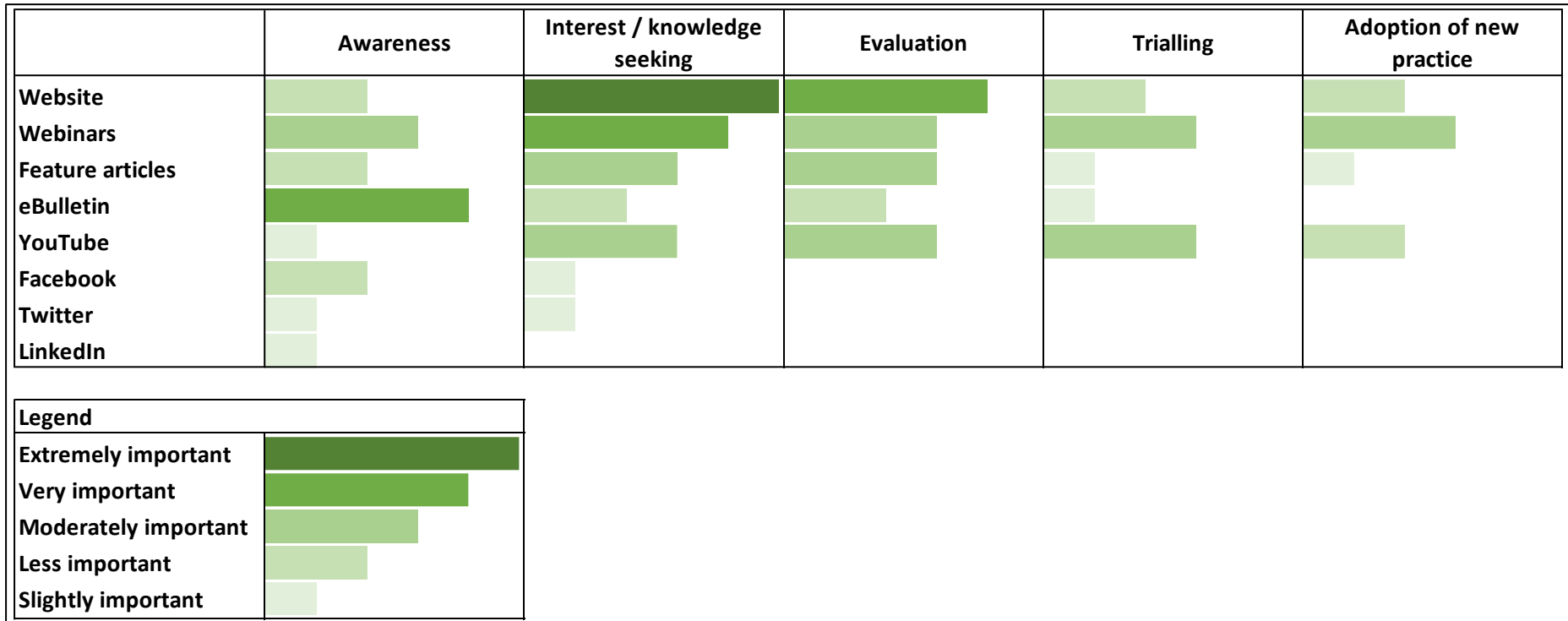


Figure 18. Rating of FutureBeef communication tools relative to the stages of the adoption pathway.

ADDRESSING THE KEY EVALUATION QUESTIONS (KEQ)

The analysis of the survey responses, combined with insights gained from the interviews provides the necessary evidence to answer the four KEQ's that form the basis of this report. A summary of the evidence obtained against each KEQ is shown in Table 43.

Table 43. Summary of evidence obtained that addresses the key evaluation questions.

Key Evaluation Questions (KEQ)	Summary of evidence from survey and interviews
1. What level of brand awareness exists for FutureBeef within the northern beef industry?	There is a strong level of awareness for FutureBeef amongst northern beef industry stakeholders who are direct participants in the program. The awareness rating given to FutureBeef was 8.3/10 and was supported by FutureBeef being identified as one of the key sources of reliable and relevant information used by the industry.
2. How satisfied are the users of FutureBeef communication tools?	There was an overall strong level of satisfaction recorded for the FutureBeef website, webinars and eBulletin, all exceeding the target of 7.5/10 for useability. Whilst targets were met for Facebook® and Twitter®, the number of users identified in the survey were lower which potentially created some biases. See Table 29 for comparison against longitudinal data and MLA set targets.
a. How useful are they?	The usefulness rating of each tool (out of 10) is: <ul style="list-style-type: none"> • Website 7.7 • eBulletin 8.2 • Feature articles 6.5 • Webinars 8.4 • Facebook® 8.0 • Twitter® 8.6 • LinkedIn® 7.1 • YouTube® 8.5
b. What makes them useful/not useful?	Relevant, reliable, well presented and formatted, timely and trusted sources of information are the key factors that lead to greater use of the FutureBeef communication tools. Difficulty in navigation and accessibility (internet connection or media) reduce the useability of the tools.
c. How could they be improved?	Ensuring accurate, relevant and current information that is in an easy to navigate and easy to access format are the key suggestions for improvement.
3. How has engagement in FutureBeef communication tools influenced practice change?	Approximately 74% of survey respondents indicated that they had made or intend to make a practice change as a result of a direct engagement with FutureBeef. Attribution to FutureBeef was high amongst those respondents that had implemented practice change (58%).

Key Evaluation Questions (KEQ)	Summary of evidence from survey and interviews
<p>a. What types of practice changes have occurred?</p>	<p>Pasture management, grazing management, supplementation, and animal performance (health and production) are the key themes where FutureBeef participants have implemented practice change. The interviews further supported the key role that FutureBeef has played in improving supplementation practices, use of pain relief, drought management strategies, use of decision support tools and grazing practices within northern beef herds.</p>
<p>b. How did FutureBeef influence decision making around practice change?</p>	<p>The website and webinars have proven to be strong deliverers of credible information that has satisfied several users need for information to support and provide confidence to decisions and for evaluation and trialling. FutureBeef tools also raise awareness, trigger and motivate users into action to address issues and implement change. The eBulletin is a highly regarded signpost or signaller to activities within the FutureBeef program that has created a general awareness for a range of practice changes.</p>
<p>c. What are the barriers to practice change?</p>	<p>Internet connectivity including its reliability and speed is a key barrier to accessing FutureBeef tools especially webinars and videos that require high bandwidth. It is also a barrier to implementing technologies where connectivity over the whole property is required e.g. virtual fencing.</p> <p>Capital, time and infrastructure were the key barriers raised during interviews followed by labour, skills and value proposition.</p>
<p>4. What are the future industry needs of FutureBeef beyond the current project?</p>	<p>There was a strong positive response from those surveyed for FutureBeef to be continued beyond 2022 as a valued, trusted and necessary industry resource. Survey respondents expressed a range of industry needs for FutureBeef. A full list of suggested improvements and, roles, function, content, and topics for a new FutureBeef program can be found in Appendix 1, Table 44.</p>
<p>a. How could FutureBeef be improved in the future?</p>	<p>Improved website function and format, more focused webinars involving producers and producer case studies, and ensuring that all content is formatted and structured in a form that allows easy access and useability are the key suggested improvements for FutureBeef. In addition, there is rising demand for delivery of content in smart phone and tablet device formats.</p>

Key Evaluation Questions (KEQ)	Summary of evidence from survey and interviews
<p>b. What communication tools should be prioritised?</p>	<p>The website and webinars are the predominate communication tools that provide a swath of information across a range of adoption points. The eBulletin is a focal or central point for FutureBeef and is the key catalyst for creating awareness of all FutureBeef activities. These tools should be maintained or improved to ensure the future success of FutureBeef.</p>

CONCLUSION

FutureBeef is a valued and trusted information resource for the northern Australian beef industry. Overall awareness of the FutureBeef program is high, with QDAF and MLA identified as key partners. In contrast, the awareness of NT DITT and DPIRD WA was lower even within the respondents that were located within those states.

Overall user satisfaction of the FutureBeef communications tools is high and has exceeded the targets set for the program. It appears that user satisfaction has improved since the 2016 survey.

The FutureBeef website and webinars are the tools that are the most impactful for the program in terms of generating activity with the various stages of adoption of practice change. The eBulletin is essential for signposting FutureBeef activities and for indicating that new information is available.

The surveys identified two different and distinct user types for FutureBeef. Active seekers are very much focused on information gathering and look to directly identify knowledge that can be implemented (a knowledge resource), particularly if supported by strong science or other producer endorsement. Whereas the Interest triggered group predominately use FutureBeef as an awareness tool, are more passive in looking for direct solutions and appear to be more opportunistic in the use of information from FutureBeef.

FutureBeef has been successful in influencing practice change within the northern Australian beef industry. Whilst FutureBeef targets the early phases of adoption mainly through awareness and stimulating interest or need for knowledge (the website and the eBulletin), the interactive webinars did create an opportunity for several stakeholders to move through the later stages of adoption through to practice change implementation. There was a positive attribution given to the FutureBeef communication tools and a high recognition of the impact that those tools had in the farming practice.

There is a strong desire amongst those surveyed to see FutureBeef continued as a necessary source of information, support, and connectivity for the industry. Several recommendations are focussed on improving the functionality of the FutureBeef program and adding elements that would improve the overall useability and impact of the program and its communication tools.

RECOMMENDATIONS

Several recommendations have been proposed based on responses obtained from the online survey and from the one-on-one interviews. These recommendations are not in priority or rank order. They should be considered in future planning and investment decisions.

Recommendation 1. That the FutureBeef team consider a technical review of the website to ensure all information and advice is consistent with current best practice.	33
Recommendation 2. That the FutureBeef team consider options to improve navigation of the FutureBeef website including use of the search facility and possible reorganising the content by the topics important to users.	35
Recommendation 3. That the FutureBeef team develop a mechanism that highlights new or changed material on the website and through the eBulletins. This should be prominent so that users can easily identify when information of interest to them has been added or changed.	41
Recommendation 4. That the FutureBeef team consider how eBulletins can be tailored to the needs of individual readers. This may be through dedicated eBulletins focussed on key themes or topics or regions.	42
Recommendation 5. That the FutureBeef team consider the value proposition of hard copy feature articles in Rural Press publications. Articles could be included in special editions of the eBulletin.	49
Recommendation 6. That the FutureBeef team consider additional measures to alert industry to the availability of recorded webinars for those unable to participate live or who wish to re-watch them. Options include greater prominence in other appropriate FutureBeef communication tools of the availability of recorded webinars and how to access them, through to registering to receive an alert (email or SMS) once the recorded webinar has been uploaded.	55
Recommendation 7. That the FutureBeef team make it a priority that a printable summary of the key points from webinars is available and distributed to registered participants within a prescribed time after completion of the webinar. Within two business days is suggested. Links to the summary should also be visible to those watching the recorded version.	55
Recommendation 8. That the FutureBeef team continue to use Facebook® as a mechanism to alert northern beef stakeholders to new information and activities within the FutureBeef program.	59
Recommendation 9. The FutureBeef project team should consider Twitter® as a low priority for subsequent programs as there is a high proportion of the FutureBeef's intended audience who do not use Twitter.	61
Recommendation 10. Given the high proportion of survey respondents who do not use LinkedIn®, the FutureBeef project team should consider LinkedIn® to be a low priority as a mode of engagement for FutureBeef.	64
Recommendation 11. That the YouTube® channel content is specifically identified and promoted on the website to increase engagement.	67

Recommendation 12. That the FutureBeef team consider the suggestions provided by stakeholders and in particular consider: (a) improving the organisation of the website’s content and search functionality to improve the user experience, (b) enhancing the value of eBulletins by providing brief summary of referenced articles to minimise unnecessary ‘click-throughs’, (c) increasing the promotion of FutureBeef tools and content through existing communications by encouraging further distribution through personal networks (forwarding emails, ‘re-tweeting’, ‘likes’, etc.), (d) further customising content for specific regions (e.g. adjusting for seasonal differences, addressing regional issues, using local case studies), (e) increasing the number of webinars and the range of topics addressed, and (f) developing all future content in friendly formats and converting existing high-usage reference material into a smartphone/tablet accessible format. 89

Recommendation 13. That the FutureBeef team undertake or commission an evaluation process of the suggested topics to identify those of highest priority and demand, and these be included in forward planning and delivery..... 91

Recommendation 14. That the FutureBeef team consider the new roles and functions (or expand existing functions) as suggested by stakeholders and specifically consider: (a) developing lists of service providers (e.g. Vets, rural supplies outlets, agronomists, specialist equipment suppliers, installers and maintenance contractors) that can be filtered by type and region, (b) developing and delivering (or having delivered) industry training and professional development courses specific to the beef industry, and (c) Refreshing the calendar function to support planning for forthcoming management activities by displaying an annual cycle of regionalised reminders..... 93

Recommendation 15. ‘During periods of adverse conditions, for example drought, FutureBeef should prioritise and highlight resources that can support northern beef stakeholders to confront and manage those conditions.’ 102

Recommendation 17. That FutureBeef explore additional methods of delivery to support the later stages of the adoption pathway..... 109

Recommendation 18. That the FutureBeef team develop a targeted communication strategy to deliver the communication tools in a way that appeals to the needs of both the ‘Active Seeker’ and ‘Information Triggered’ FutureBeef user groups. 117

REFERENCES

ABARES 2021. Australian beef: financial performance of beef farms 2017–18 to 2019–20
Therese Thompson and Fred Litchfield.

Dart. J and Davies. R, 2005. The 'Most Significant Change' (MSC) Technique: A Guide to Its
Use, RJ Davies and J Dart, available at www.mande.co.uk/docs/MSCGuide.htm

Coutts. J, Rennie. L, Coutts. B, Samson. A, 2016. FutureBeef Update eBulletin and Social
Media Evaluation, Coutts J&R

Coutts. J, Rennie. L, Coutts. B, Samson. A, 2016. DAF FutureBeef Website and Intranet
Evaluation report, Coutts J&R

Coutts. J, Rennie. L, Coutts. B, Samson. A, 2016. DAF FutureBeef Webinar Series
Evaluation report Coutts J&R

Taluğ, C. and Tatlıdil, H., 1993. as cited in ÖZÇATALBAŞ. O, 2014. Extension and
Innovations: Diffusion of Innovations, Page 132, available at
<https://www.researchgate.net/publication/311972282>

APPENDICIES

APPENDIX 1: FUTURE OPPORTUNITIES IDENTIFIED THROUGH THE SURVEY AND INTERVIEWS

Table 44 Combined list of improvements and suggestions for a new FutureBeef program including roles, function, content, and topics.

Suggested improvements	Suggested new roles, functions and content	Suggested topics for a new FutureBeef program
<ul style="list-style-type: none"> • Address the website's organisation, style, navigation, and search to improve user experience • Content that is high quality, relevant, realistic, and up to date • More and better promotion of FutureBeef tools and content • Regional focus - cover more areas, deliver localised content • Keep delivering more content • More webinars, case studies, videos, R&D outcomes, and physical events • Reviewing and updating the content of all tools is a continuous process • Target a wider audience • Play a more prominent role in event promotion • Feature potential impact on target businesses' bottom line • Provide more content in eBulletins to reduce unnecessary click-throughs • Wherever possible, deliver content in mobile friendly formats • Hard copy should be reconsidered 	<ul style="list-style-type: none"> • List of service providers and suppliers • Training and professional development • Development of the next generation • Revolving schedule of seasonal activities • Adoption practice • Guides to using tools promoted by the FutureBeef program. • Instagram • Articles, stories and trial results from commercial service providers. • Mobile phone versions of tools • Following demonstration trials and focus farms throughout the year to share learnings with FutureBeef users • Provide a place where the relevant legislation and regulation requirements relating to particular topics is located on FutureBeef • Links to grants available to help support adoption of new technologies • Practical tips for new producers • e.g. cattle husbandry, castrating, branding, NLIS tags 	<ul style="list-style-type: none"> • Agistment • Animal health and welfare • Backgrounding • Breeding, genetics and innovations in genetics and genomics • Carbon farming • Chemical use • Connectivity options across the whole property to enable technology uptake • Cost benefit analyses of new technologies • Dung beetles • Drought preparedness and management • Exports • Feeding and nutrition • Feedbase management • Financial literacy training • Future impacts on the beef industry • Future vision for the beef industry • Grazing management • Land management, erosion control • Livestock husbandry • Maintenance of the environment • Market targets • New technologies e.g. virtual fencing, cattle tracking, drones, water monitoring.

Suggested improvements	Suggested new roles, functions and content	Suggested topics for a new FutureBeef program
<ul style="list-style-type: none"> • More examples for smaller scale producers • Reinforced the need for both technical (scientist) and producer's experiences to be shared in webinars • Greater presence of FutureBeef in WA, a visible presence 		<ul style="list-style-type: none"> • Organic farming systems • Pastures, legumes and Leucaena • Pasture dieback e.g. management tools, apps for recording it and webinars • Pest and weed management • Regenerative agriculture • Reproduction • Soils • Solar management • Succession or estate planning • Tactical decision-making tools • Technology updates • Trading • Tree/grass interaction • Value adding opportunities • Welfare and social license

APPENDIX 2: SURVEY QUESTIONNAIRE

Feedback on FutureBeef Communications

Introduction

FutureBeef is a collaborative project for the northern Australia beef industry with partners including Queensland Department of Agriculture and Fisheries, Northern Territory Department of Industry, Tourism and Trade and Department of Primary Industries and Regional Development Western Australia and Meat & Livestock Australia.

FutureBeef uses a range of communication channels to support the northern Australian beef industry by providing latest practical tools, scientific insights, and relevant, timely advice. This survey has been designed to evaluate the success of these communication channels and to influence future development of FutureBeef's communication offerings.

The survey is being conducted on behalf of the Queensland Department of Agriculture and Fisheries (QDAF) by an independent consulting team consisting of Sophie Folder (Pear Consulting), Alex Ball (Rural Analytics) and Kimbal Curtis (Livestock Dynamics).

The answers you provide will be treated in strict confidence and only de-identified and aggregated results will be reported and shared beyond the consulting team.

In appreciation for the time that you will provide in completing this survey, there is a \$500 VISACARD prize that you can enter a draw for. Employees of FutureBeef partner organisations are not eligible for this prize.

Should you have any feedback or concerns about the conduct of this survey you can contact the FutureBeef Project Manager.

This survey should take approximately 20 minutes.

In participating in this survey you agree that:

I understand that my participation in the project is entirely voluntary and that I am free to withdraw from the survey at any time.

I understand that the information I provide for this research will be treated confidentially. Personal information will be managed in accordance with the principles of the Personal Information Protection Act 2004. The information will be used for research on the user satisfaction with FutureBeef communication tools and impact on practice change.

1. I agree to the terms of this survey.
 - Yes
 - No

Demographic questions

2. What state do you primarily operate your beef business in?
 - Queensland
 - Northern Territory
 - Western Australia
 - Other states (please specify)

3. What is your role in the northern beef industry?

- Producer, pastoralist
- Fee lotter
- Seedstock producer
- Private service provider (consultant, agent, advisory)
- Public service provider (local, state, federal)
- Other

4. What is your approximate herd size (all properties; number only)?

5. What is your current business structure?

- Family or privately owned
- Company
- Large corporate
- Indigenous owned or managed
- Other (please specify)

6. What role do you have in the beef enterprise?

- Owner/Decision maker
- Station/Property manager
- Station/Property worker
- Financial manager/accountant
- Other (please specify)

7. What is your age?

- Under 18
- 18 – 24
- 25 – 34
- 35 – 44
- 45 – 54
- 55 – 64
- 65+

8. What is your gender?

- Male
- Female
- Other
- Prefer not to answer.

FutureBeef Communication Tools feedback

9. What (who) are the most reliable and relevant sources of best practice information for the northern beef industry?

10. Why are these sources reliable and relevant?

11. How aware are you of FutureBeef?

Not at all (1)	2	3	4	5	6	7	8	9	Very aware (10)
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12. How aware are you of the involvement of the following parties in FutureBeef?

Meat and Livestock Australia (MLA)

Not at all (1)	2	3	4	5	6	7	8	9	Very aware (10)
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Queensland Department of Agriculture (QDAF)

Not at all (1)	2	3	4	5	6	7	8	9	Very aware (10)
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NT Department of Industry Tourism and Trade (NT DITT)

Not at all (1)	2	3	4	5	6	7	8	9	Very aware (10)
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Department of Primary Industries and Regional Development Western Australia (DPIRD WA)

Not at all (1)	2	3	4	5	6	7	8	9	Very aware (10)
---------------------------	----------	----------	----------	----------	----------	----------	----------	----------	----------------------------

13. Have you accessed, viewed or used the FutureBeef website?

- Yes, I use it often.
- Yes, but not often.
- No I don't access the web.
- No I don't find the FutureBeef website useful.
- Other (please specify)

14. How would you rate the FutureBeef website?

Not useful (1)	2	3	4	5	6	7	8	9	Very useful (10)	N/A
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Why did you give it that rating?

15. What could be improved in the FutureBeef website?

16. Have you accessed, viewed or used the FutureBeef eBulletin (monthly email)?

- Yes, I actively read articles and follow links.
- Yes, I scan articles of interest.
- No, I do not read the eBulletin.
- No, I don't receive the eBulletin.
- Other (please specify)

17. How would you rate the FutureBeef eBulletin?

Not useful (1)	2	3	4	5	6	7	8	9	Very useful (10)	N/A
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Why did you give it that rating?

18. What could be improved in the FutureBeef eBulletin?

19. Have you read FutureBeef branded features in the rural press publications Queensland Country Life and North Queensland Register?

	No	No, I have not seen these features	Sometimes	Yes (often)	Do not know
Northern Muster	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef Talk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CQ Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. How would you rate FutureBeef branded features in Rural press publications?

Not useful (1)	2	3	4	5	6	7	8	9	Very useful (10)	N/A
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Why did you give it that rating?

21. What could be improved in the FutureBeef features?

22. Have you accessed, viewed or used the FutureBeef webinars?

- Yes, I access or view the live webinars.
- Yes, I access the recorded versions via the website or YouTube channel.
- No, the topics have not interested me.
- No, the timing or my internet access prevents me from using this product.
- No other (please specify)

23. How would you rate FutureBeef webinars?

Not useful (1)	2	3	4	5	6	7	8	9	Very useful (10)	N/A
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Why did you give it that rating?

24. What could be improved in the FutureBeef webinars?

25. Have you followed or viewed the FutureBeef Facebook® page?

- Yes, I actively follow the Facebook® page.
- Yes, I occasionally look at the Facebook® page.
- No, I don't recall looking at the Facebook® page.
- No, I don't use Facebook®.
- No other (please specify)

26. How would you rate the FutureBeef Facebook® page?

Not useful (1)	2	3	4	5	6	7	8	9	Very useful (10)	N/A
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Why did you give it that rating?

27. What could be improved in the FutureBeef Facebook® page?

28. Do you follow or have you used the FutureBeef Twitter® feeds?

- Yes, I actively follow the Twitter® feeds.
- Yes, I passively follow the Twitter® feeds.
- No, I do not follow Twitter® feeds from FutureBeef.
- No, I do not use Twitter.
- Other (please specify)

29. How would you rate the FutureBeef Twitter® feeds?

Not useful (1)	2	3	4	5	6	7	8	9	Very useful (10)	N/A
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Why did you give it that rating?

30. What could be improved in the FutureBeef Twitter® feeds?

31. Have you accessed FutureBeef LinkedIn® network?

- Yes, I have added FutureBeef as a link.
- Yes, I see the occasional FutureBeef posts.
- No, I don't see FutureBeef posts.
- No, I don't use LinkedIn®.
- Other (please specify)

32. How would you rate the FutureBeef LinkedIn®?

Not useful (1)	2	3	4	5	6	7	8	9	Very useful (10)	N/A
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Why did you give it that rating?

33. What could be improved in the FutureBeef LinkedIn®?

34. Have you accessed, viewed or used the FutureBeef YouTube® channel?

- Yes, I actively follow the FutureBeef YouTube® channel
- Yes, I have accessed the FutureBeef YouTube® channel to watch a video or webinar recording.
- No, I have not accessed or viewed the FutureBeef YouTube® channel
- No, I don't use YouTube®.
- Other (please specify)

35. How would you rate the FutureBeef YouTube channel?

Not useful (1)	2	3	4	5	6	7	8	9	Very useful (10)	N/A
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Why did you give it that rating?

36. What could be improved in the FutureBeef YouTube® channel?

37. Is Internet connectivity a barrier to use of FutureBeef Communication tools?

- Yes
- No
- For some tools

Please indicate which tool.

38. Have any of the FutureBeef communication tools contributed to changes in your or your client's property or business management (practice change)?
- Yes
 - No
 - Intend to in the future

Practice Change questions

39. Please describe or list this/these practice change (s)?

40. Which FutureBeef product(s) promoted that or those changes?

- Website
- eBulletin
- Rural press features
- Webinar/webinar recordings
- Facebook® page
- Twitter® feeds
- LinkedIn® network
- YouTube® channel

41. In which area of the farm did that or those practice change(s) impact?

- Animal production
- Genetics
- Reproductive efficiency
- Grazing land management
- Animal health and welfare
- Business improvement
- Environmental improvement
- Social and Human resources
- Other (please specify)

42. What is the impact of the practice change (s)?

Small (1)	2	3	4	Moderate (5)	6	7	8	9	Very large (10)
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43. What proportion (percentage) of that impact do you attribute to the FutureBeef communication tool(s)? (Range 0 to 100%)

Future industry requirements for FutureBeef

The current FutureBeef program is due to end in February 2022. We are interested in what your thoughts are on future needs from FutureBeef. This will assist in planning for the next FutureBeef program.

44. How could FutureBeef be improved?

45. What could be included in the next FutureBeef program?

Contact information

In addition to this questionnaire the consultancy team plan to interview a small number of northern beef producers to explore the issues raised and to develop key case studies highlighting practice changes that have been implemented. If you would be prepared to be involved in these activities, please complete the questions below.

46. If the consultancy team want to discuss your answers in more detail, would it be ok for them to arrange a time to call you?

- Yes
- No

47. Do you want to be included in the draw for a \$500 VISACARD prize?

- Yes
- No

48. Please supply your contact details for the consultants to follow up with you or to enter you in the draw (please skip if you answered No to both questions above).

Name

Company/Property

Email address

Phone number

APPENDIX 3: INTERVIEW QUESTIONS

Phone interview script

Interview introduction

- Thank you for your participation in the online FutureBeef survey and for your willingness to participate in a phone interview. You were selected for a follow up interview based on your responses to the on-line survey.
- The purpose of this interview is to further discuss your experiences with FutureBeef Communication tools and expand on the practice changes you have made to property or business management because of FutureBeef.
- The overall results of this interview and the on-line survey will be used to help improve FutureBeef communication offerings and to report on the user satisfaction of FutureBeef communication tools to its funders and partners.
- Four case studies highlighting on-farm practice change will also be developed and promoted amongst FutureBeef channels.
- This interview will take approximately 20-30 minutes.
- Have you read through the interview consent form emailed to you prior to this interview?

If yes, ask if they consent to the interview and it being audio recorded. Explain this will be asked again at the start of the recording.

- If no, go through the below points:
 - The interviews are voluntary, and you are free to withdraw at any time.
 - To maintain the accuracy of the information, the interview will be digitally recorded and key quotes and information from the interview will be transcribed. You are free to ask for the recording to be stopped at any time.
 - In all circumstances we will respect participants' confidentiality. The names of individuals will not be connected with their responses, unless they have consented to having a case study written about their experiences.

Interview questions and prompts

Interview Question	Sub questions/prompts or notes for interviewer
1. Do you consent to being interviewed? 2. Do you consent to your interview being audio recorded and key quotes or information transcribed?	<i>Ask the following questions once the audio recording has commenced.</i>
Practice change	
<p>In the FutureBeef online survey you mentioned you had implemented some form of practice change because of FutureBeef.</p> <p>You described this as <i>(insert practice change from survey)</i></p> 3. Could you elaborate further to describe this change you have made? And what it has involved?	<p><i>Where they have listed more than 1 practice change, ask them to choose the one most significant to them to discuss in the interview.</i></p> <ul style="list-style-type: none"> • Ask them why they chose that practice? Why it was significant?
Decision Making influence	
4. What prompted you to make this change?	<ul style="list-style-type: none"> • What was the trigger to action? • When did this start? • What support did you seek or need? • What gave you confidence to progress?
5. I'm interested to know how and why FutureBeef influenced your decision to make this change?	Tick stage where FutureBeef influenced <ul style="list-style-type: none"> <input type="checkbox"/> Raise awareness/trigger <input type="checkbox"/> Motivated them to action <input type="checkbox"/> Supporting decision <input type="checkbox"/> Provided confidence
6. At what stage during the adoption of this change did FutureBeef assist you?	<p><i>Explain the adoption process stages to help prompt them.</i></p> Tick stage where FutureBeef influenced <ul style="list-style-type: none"> <input type="checkbox"/> Raise awareness <input type="checkbox"/> Interest/knowledge seeking <input type="checkbox"/> Evaluation/how does it relate to my property <input type="checkbox"/> Trialling/follow up <input type="checkbox"/> Adoption/dis-adoption of old practice.
7. Was there a particular FutureBeef tool or tools that was the catalyst for this change or intent to make the change?	<i>They may have answered this earlier in Q.5</i>
8. What else was needed to help you to make this change? e.g. other information, support	<ul style="list-style-type: none"> • What sources of information, tools or other people do you use in helping you make decisions when implementing new practices?
Benefits of practice change	
9. What have been the key benefits of this change to your property or business?	<ul style="list-style-type: none"> • Do you have any evidence to support this? e.g. observations, data, photos • Why is this change significant to you? • Have there been any negatives impacts associated with the change?

Barriers to Practice change	
10. Are there other practice changes you have intended to make but haven't?	
11. What are the key barriers to these changes?	<p><i>Use list as prompts if they are not forthcoming with barriers. May need to explain what they mean e.g. social.</i></p> <p>Tick key barriers</p> <ul style="list-style-type: none"> <input type="checkbox"/> Value proposition <input type="checkbox"/> Data <input type="checkbox"/> Time <input type="checkbox"/> Skills <input type="checkbox"/> Infrastructure <input type="checkbox"/> Capital <input type="checkbox"/> Technology <input type="checkbox"/> Social
12. How could FutureBeef help you to overcome these barriers?	
Future needs for FutureBeef	
The current FutureBeef project is due to end at the start of 2022.	<i>Ask them to further expand on previous survey responses if listed</i>
13. What would you like to see included in a new FutureBeef Program? (e.g. topics, tools, activities)	
14. Are there particular FutureBeef communication tools that you would like to see continued in a new program?	
15. Are there activities that you think that FutureBeef should not be involved in?	
16. Are there any further comments you wish to make about FutureBeef?	
Case studies	
We will be preparing a series of case studies highlighting practice changes that have been inspired by FutureBeef. This will involve an additional follow up interview to collect further information, data, and photos.	
17. If selected, would you be interested in participating in a case study of your practice change and involvement with FutureBeef?	

Thank you for your participation in this interview.

APPENDIX 4: TABLES QUANTIFYING THE USE OF FUTUREBEEF TOOLS BY SURVEY RESPONDENTS

These tables expand on the data summarised in the body of the report.

Table 45. Number and proportion of survey respondents that use the FutureBeef website.

FutureBeef website	All respondents	Producers/pastoralists	Service Providers
Yes, I use it often	82 (41%)	48 (34%)	34 (57%)
Yes, but not often	104 (52%)	78 (55%)	26 (43%)
Subtotal: Yes ...	186 (93%)	126 (89%)	60 (100%)
No, I don't find the FutureBeef website useful	6 (3%)	6 (4%)	-
No, I don't access the web	9 (4%)	9 (6%)	-
Subtotal: No ...	15 (7%)	15 (11%)	-
Total	201	141	60

Table 46. Number and proportion of survey respondents that read the FutureBeef eBulletin.

FutureBeef eBulletin	All respondents	Producers/pastoralists	Service Providers
Yes, I actively read articles and follow links	99 (50%)	72 (51%)	27 (47%)
Yes, I scan articles of interest	80 (40%)	53 (38%)	27 (47%)
Subtotal: Yes ...	179 (90%)	125 (89%)	54 (93%)
No, I don't read the eBulletin	9 (5%)	7 (5%)	2 (3%)
No, I do not receive the eBulletin	10 (5%)	8 (6%)	2 (3%)
Subtotal: No ...	19 (10%)	15 (11%)	4 (7%)
Total	198	140	58

Table 47. Number and proportion of survey respondents that have read FutureBeef feature articles in Northern Muster.

Northern Muster	All respondents		Producers/pastoralists		Service Providers	
Yes (often)	19	(11%)	13	(11%)	6	(11%)
Sometimes	34	(19%)	22	(18%)	12	(22%)
Subtotal: Yes/Sometimes	53	(30%)	35	(28%)	18	(33%)
No, I have not seen these features	52	(29%)	34	(28%)	18	(33%)
No	66	(37%)	49	(40%)	17	(31%)
Do not know	7	(4%)	5	(4%)	2	(4%)
Subtotal: No .../Do not know	125	(70%)	88	(72%)	37	(67%)
Total	178		123		55	

Table 48. Number and proportion of survey respondents that have read FutureBeef feature articles in Beef Talk.

Beef Talk	All respondents		Producers/pastoralists		Service Providers	
Yes (often)	29	(16%)	24	(18%)	5	(9%)
Sometimes	42	(23%)	29	(22%)	13	(24%)
Subtotal: Yes/Sometimes	71	(39%)	52	(41%)	18	(33%)
No, I have not seen these features	43	(23%)	25	(19%)	18	(33%)
No	63	(34%)	47	(36%)	16	(30%)
Do not know	7	(4%)	5	(4%)	2	(4%)
Subtotal: No .../Do not know	113	(61%)	77	(59%)	36	(67%)
Total	184		129		54	

Table 49. Number and proportion of survey respondents that have read FutureBeef feature articles in CQ Beef.

CQ Beef	All respondents		Producers/pastoralists		Service Providers	
Yes (often)	15	(8%)	9	(7%)	6	(11%)
Sometimes	35	(19%)	24	(19%)	11	(20%)
Subtotal: Yes/Sometimes	50	(28%)	33	(26%)	17	(31%)
No, I have not seen these features	53	(29%)	34	(27%)	19	35%
No	67	(37%)	51	(40%)	16	(30%)
Do not know	10	(6%)	8	(6%)	2	(4%)
Subtotal: No .../Do not know	130	(72%)	93	(74%)	37	(69%)
Total	180		126		54	

Table 50. Number and proportion of survey respondents that access or view FutureBeef webinars.

FutureBeef webinars	All respondents		Producers/pastoralists		Service Providers	
Yes, I access or view the live webinars	77	(41%)	51	(39%)	26	(47%)
Yes, I access the recorded versions via the website or YouTube channel	45	(24%)	29	(22%)	16	(29%)
Yes, but rarely	2	(1%)	1	(1%)	1	(2%)
Subtotal: Yes ...	124	(67%)	81	(62%)	43	(78%)
No, the topics have not interested me	7	(4%)	6	(5%)	1	(2%)
No, the timing or my internet access prevents me from using this product	47	(25%)	37	(28%)	10	(18%)
No, did not know about them	2	(1%)	2	(2%)	0	(0%)
No (other reasons)	6	(3%)	5	(4%)	1	(2%)
Subtotal: No ...	62	(33%)	50	(38%)	12	(22%)
Total	186		131		55	

Table 51. Number and proportion of survey respondents that follow the FutureBeef Facebook® feed.

FutureBeef Facebook®	All respondents		Producers/pastoralists		Service Providers	
Yes, I actively follow the Facebook® page	32	(17%)	21	(16%)	11	(20%)
Yes, I occasionally look at the Facebook® page	44	(23%)	27	(20%)	17	(30%)
Subtotal: Yes ...	76	(40%)	48	(36%)	28	(50%)
No, I don't recall looking at the Facebook® page	55	(29%)	41	(31%)	14	(25%)
No, I don't use Facebook®	58	(31%)	44	(33%)	14	(25%)
Subtotal: No ...	113	(60%)	85	(64%)	28	(50%)
Total	189		133		56	

Table 52. Number and proportion of survey respondents that follow the FutureBeef Twitter® feed.

FutureBeef Twitter® feed	All respondents		Producers/pastoralists		Service Providers	
Yes, I actively follow the Twitter® feeds	2	(1%)	2	(2%)	0	(0%)
Yes, I actively follow the Twitter® feeds	9	(5%)	6	(5%)	3	(5%)
Subtotal: Yes ...	11	(6%)	8	(6%)	3	(5%)
No, I do not follow Twitter® feeds from FutureBeef	23	(12%)	14	(11%)	9	(16%)
No, I do not use Twitter®	155	(82%)	111	(83%)	44	(79%)
Subtotal: No ...	178	(94%)	125	(94%)	53	(95%)
Total	189		133		56	

Table 53. Number and proportion of survey respondents that see FutureBeef posts on LinkedIn®.

FutureBeef LinkedIn®	All respondents		Producers/pastoralists		Service Providers	
Yes, I have added FutureBeef as a link	6	(3%)	4	(3%)	2	(4%)
Yes, I see the occasional FutureBeef posts	9	(5%)	3	(2%)	6	(11%)
Subtotal: Yes ...	15	(8%)	7	(5%)	8	(14%)
No, I don't see FutureBeef posts	53	(28%)	34	(26%)	19	(34%)
No, I don't use LinkedIn®	120	(64%)	91	(69%)	29	(52%)
Subtotal: No ...	173	(92%)	125	(95%)	48	(86%)
Total	188		132		56	

Table 54. Number and proportion of survey respondents that have accessed the FutureBeef YouTube® channel.

FutureBeef YouTube®	All respondents		Producers/pastoralists		Service Providers	
Yes, I actively follow the FutureBeef YouTube® channel	8	(4%)	6	(5%)	2	(4%)
Yes, I have accessed the FutureBeef YouTube® channel to watch a video or webinar recording	53	(28%)	31	(23%)	22	(39%)
Subtotal: Yes ...	61	(32%)	37	(28%)	24	(43%)
No, I have not accessed or viewed the FutureBeef YouTube® channel	80	(43%)	58	(44%)	22	(39%)
No, I don't use YouTube®	47	(25%)	37	(28%)	10	(18%)
Subtotal: No ...	127	(68%)	95	(72%)	32	(57%)
Total	188		132		56	



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Thank You

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