

final report

| Project code: | P.PSH.0418 |
|-----------------|-----------------|
| Prepared by: | Carel Teseling |
| | Angus Australia |
| Date published: | January 2006 |

PUBLISHED BY Meat & Livestock Australia Limited Locked Bag 991 NORTH SYDNEY NSW 2059

Angus Australia Collaborative Innovation Strategy Project

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

This publication is published by Meat & Livestock Australia Limited ABN 39 081 678 364 (MLA). Care is taken to ensure the accuracy of the information contained in this publication. However MLA cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests. Reproduction in whole or in part of this publication is prohibited without prior written consent of MLA.

Contents

| 1. | Executive Summary2 |
|-------------|---|
| 2. | Background5 |
| 3. | Angus Australia's Innovation Strategy7 |
| 4. | Priority areas within the project12 |
| 4.1 4.2 | Develop systems to encourage electronic submission of data and improve access to information |
| 7.2 | genetic status of animals |
| 4.3 | Extend GeneProb tool to red gene and Mannosidosis15 |
| 4.4 | Develop and implement a risk assessment tool for the adaptation of Bos Taurus bulls to northern Australia |
| 4.5 | Facilitate the direct use of 50k genomic data in EBVs, parent verification and genetic condition screening |
| 4.6 | Implement crossbred EBVs for non-straight bred Angus influenced seedstock20 |
| 4.7 4.8 | Develop and implement tools for management of inbreeding and co-ancestry 21 Facilitate Days to Calving data capture and roll-out of improved EBVs for this |
| | fertility trait |
| 4.9 4.10 | Present innovations trialled and/or implemented to industry |
| 5. | Innovation Managers Network Meetings27 |
| 6. | Learning and Development |
| 7. | Summary |
| 8. | Appendices |

1. Executive Summary

MLA's Collaborative Innovation Strategies program (CISp) aims to strengthen the innovation capability of organisations across the value chain in the Australian red meat sector. The purpose of this CISp project was to assist Angus Australia to develop and implement an innovation strategy in such a way that it could be integrated into the company's overall business plans and provide measurable performance indicators, which identify the contribution of innovation to the bottom line and achievement of key business objectives. Ultimately, the innovation strategy's objective is to contribute to the long-term profitability, competitiveness and sustainability of Angus Australia.

Commencing in 2010 for duration of three years, over the course of the project Angus Australia expected to:

- Develop and implement a comprehensive innovation strategy that would be integrated into the company's overall business strategy.
- Develop measurable performance indicators, which identify the contribution of innovation to the bottom line and achievement of key business objectives.
- Invest in the building of innovation capability to contribute to the longterm profitability, competitiveness and sustainability of Angus Australia and its members.
- Develop skills and processes appropriate to the support of ongoing innovation activities.
- Streamline access to MLA's knowledge base and people.

From the industry perspective, MLA expected benefits to include:

- Flow on effects to enhance the innovation capability of other breed societies and their members, particularly those in southern Australia.
- Better understanding of the critical issues impacting the profitability and sustainability of Breed Societies in general, to be extended more broadly to other Breed Societies and producers within the industry.
- Development of new processes and systems or adoption of new technologies and scientific knowledge which may be commercialised for the benefit of the broader industry.

The first 12 months of the CISp involved in-depth analysis of Angus Australia as an organisation, its position in industry and resources available for the development and implementation of innovative systems and services. It was also important to understand what innovation meant to Angus Australia and what the desired outcomes of the CISp were.

To fully appreciate and understand the role of different people and groups involved in developing the Angus Australia Strategic Plan 2011 – 2015, the internal process was documented in detail. The process for developing Angus Australia's 2011 Business Plan was also documented and showed that the Angus Australia Innovation Strategy impacted on the planning decisions of the business. This process has now been adopted and is an integral part of our strategic planning and business plan development process.

With the above foundations laid, the focus of the CISp then progressed to identifying projects and activities that would deliver on the overall aims of the strategy. Key achievements during the delivery phase include:

- The development of International Livestock Registry (ILR2) export certification functionality allowed Angus Australia to develop new business opportunities in the live export sector through breed certification. In 2009 there were less than 9,000 Angus animals exported while in 2013 this number was just more than 40,000 animals.
- First ever breed to develop and conduct whole of supply chain workshops in conjunction with Meat Standards Australia (MSA) and Certified Australian Angus Beef (CAAB) for producers, allowing 330 producers to attend 12 workshops across Eastern Australia.
- Developed two versions of Android and iOS Apps to make Angus animal and member information easily accessible to the beef industry, with almost 150 download. This development was very important to convince ABRI of the importance of making animal and breeder information available to the broader beef industry. Subsequently ABRI developed an App that can be used by seed stock and commercial producers to access the member and animal information of any beef breed in Australia.
- Consultation with sixty producers to identify pre and post relocation management practices that affect the successful adaptation of bulls sold into northern, non-temperate regions.
- Development and implementation of statistical methods to allow Angus genomic information to contribute to Breedplan Estimated Breeding Values (EBVs).
- Implementation of the Angus crossbred Breedplan analysis which facilitates the direct comparison of crossbred with straight bred Angus animals. This development helps commercial producers compare the genetic potential of animals with diverse genetic background.
- Communication of new knowledge, tools and systems to industry through local, national and international conferences. Presentation opportunities at five conferences allowed Angus to communicate new developments to about 2,000 persons of which about 20% were international attendees.
- Decreased the average probability of and Angus animal to a carrier of a recognised Genetic Condition from 30% to 12%.
- Enabled the diffusion of innovations via the implementation of Angus Australia's tools and systems by several local and international customers of Agricultural Business Research Institute ABRI.

Skills and professional development outcomes were achieved through participation in Innovation Managers Network meetings facilitated by MLA. The Network provided access to cutting-edge technology, tools, and ideas from Australian and international innovation thought leaders. The Network also created a safe and stimulating environment to interact and share ideas with Innovation Managers from other organisations participating in the CISp. The professional development component of the program allowed key personnel to attend an advanced course in innovation, the Association for the Advancement of Animal Breeding and Genetics (AAABG) conference in Perth as well as a course in high-level business management.

The CISp made it possible for Angus Australia to invest the necessary resources to develop an innovation strategy that had an impact on the decision-making of the overall business. This in turn, combined with a portfolio of practical and useful innovation initiatives, has helped drive a culture of innovative thinking within the organisation and amongst its members. The Australian beef industry will continue to benefit from Angus Australia's participation in the CISp through the further development and implementation of innovative systems. In addition, commercialisation of several Angus Australia applications through ABRI will help broaden the impact of the CISp program and help lift the overall innovation capability of the Australian red meat industry.

2. Background

Over the past decade, Angus Australia has continued to recognise innovation as a critical element of the organisation to maintain its viability and strengthen its leading position within the beef industry. There was little formal organisational focus on innovation, there were no dedicated human resources made available to foster innovation within the organisation and ultimately, to accelerate the uptake of innovation by Angus Australia members. Consequently, innovation opportunities were identified and funded in an adhoc manner and not as an integral part of the organisation's strategic plan.

The Angus Australia and MLA Collaborative Innovation Strategy program (CISp) agreement was approved for three years commencing in March 2010.

The purpose of this project was to assist Angus Australia to develop and implement innovation strategy that could be integrated into the company's overall business strategy and included measurable performance indicators, which identify the contribution of innovation to the bottom line and achievement of key business objectives. Ultimately, the innovation strategy needed to contribute to the enterprises long-term profitability, competitiveness and sustainability.

It is estimated that at least 60% of beef cattle in temperate Australia are Angus or Angus cross, and thereby influenced in some way by initiatives of Angus Australia. Consequently, there are significant potential benefits to industry due to the direct flow-on effects of any innovations initiated and/or implemented by Angus Australia.

Angus Australia is a recognised industry leader in the introduction of new tools and services to its members. Many of the services Angus developed and introduced have now been adopted by other breed associations and made available to their members (e.g. Web Animal Enquiry, \$Indexes, Mating Predictor and GeneProb). Past experiences have shown that accelerated rates of innovation within Angus Australia result in enhanced rates of innovation across the entire beef seedstock sector.

This Collaborative Innovation Strategy program was the first and currently only partnership with a Breed Society and served as a pilot for how the model could be applied in this sector.

Angus Australia expected to:

- Develop and implement a comprehensive innovation strategy that would be integrated into the company's overall business strategy.
- Develop measurable performance indicators, which identify the contribution of innovation to the bottom line and achievement of key business objectives.
- Invest in the building of innovation capability to assure the long-term profitability, competitiveness and sustainability of Angus Australia and its members.
- Enhance the innovation capability of Angus Australia and its members.

• Streamline access to MLA's knowledge base and people.

MLA and the Australian red meat industry expected benefits to include:

- Flow on effects that will enhance the innovation capability of other breed societies and their members, particularly those in southern Australia.
- Better understanding of the critical issues impacting the profitability and sustainability of Breed Societies, which can be extended more broadly to other Breed Societies and producers within the industry.
- Development of new processes and systems or adoption of new technologies and scientific knowledge which may be commercialised for the benefit of the broader industry.

Angus Australia is a small organisation with limited financial resources available to invest in innovation and capability building of its staff and members. To develop and implement innovative services and systems required a dedicated resource within Angus Australia. The CISp made it possible to appoint Carel Teseling, Breed Development & Information Manager as Innovation Manager. The role of this position was changed to add a focus on innovation, and the position description was updated accordingly and is attached as Appendix A.

Without innovation in the beef seedstock sector it will soon become defunct and as a consequence the whole beef industry will suffer. Innovation at the breed society level delivers measurable outcomes in terms of genetic improvement in industry. Unless commercialised through Agricultural Business Research Institute (ABRI) or the breed societies, there is no genetic improvement, no matter how smart the software or tool.

Participation in the CISp provided a more structured focus on innovation by the Angus Australia board, staff and members. This focus influenced investment priorities to ensure human and financial resources were made available to pursue new concepts and opportunities that didn't fit within the "traditional" Angus Australia services.

The overall purpose of Angus Australia's Innovation Strategy was 'to develop a sustainable innovation culture and capability within Angus Australia and its members that results in the rapid application of knowledge, tools and systems to enhance the value of Angus cattle and beef products.

3. Angus Australia's Innovation Strategy

The first 12 months of the CISp involved in-depth analysis of Angus Australia as an organisation, its position in industry and resources available for the development and implementation of innovative systems and services. It was also important to understand what innovation meant to Angus Australia (Appendix B) and what the desired outcomes of the CISp were.

The development of the Angus Australia Innovation Implementation Plan 2010 (Appendix C) formed a very important starting point to determine areas that Angus Australia would focus its innovation on. It also helped to give direction on areas that are prominent for the development, implementation and running of an effective and successful innovation program.

Early in the CISp the potential duplication of services and possible competition for funding was identified as likely stumbling blocks that needed to be addressed and clarified. The relationships between the major organisations contributing to the technical support, extension and R&D areas of the genetic pipeline and where the Angus Australia innovation manager and graduate fits into this structure are explained in Figure 1 that was developed specifically for this purpose.



Figure 1: Map showing roles of Angus Australia and other service providers.

Figure 1 illustrated that Angus Australia's innovation manager will not deliver technical support through the Southern Beef Technology Services (SBTS)

program which also receives MLA Donor Company (MDC) funding. Angus Australia's innovation plan would focus on developing new and innovative systems, services and tools to create value for Angus Australia and its members.

To fully appreciate and understand the role of different people and groups involved with the process of developing the Angus Australia Strategic Plan 2011 – 2015, the internal process was documented in detail (Appendix D).

This process started with extensive consultation between the Chief Executive officer (CEO) and Strategy Review Committee and the Angus Australia membership through a series of workshops in which members were given the opportunity to express their views regarding the value of current activities, threats, opportunities and future actions and initiatives.

Feedback from the member workshops were reviewed by the Angus Australia management team, the Strategy Review Committee and the Angus Australia board. The final version of the Angus Australia Strategic Plan 2011 – 2015 was distributed among the Angus membership in December 2010. The development of the Strategic Plan and the member feedback sessions also assisted in the formulation of innovation priorities and areas to focus on to improve current processes, services and systems.

The process for developing Angus Australia's 2011 Business Plan (Appendix E) was also documented and showed that the newly developed Draft Angus Australia Innovation Strategy already impacted on the planning stages of the process.

A survey was conducted of staff to measure the state of innovation in Angus Australia as an organisation. It was important to determine the prevailing attitudes of staff towards innovation to help decide on actions needed if the survey identifies areas of concern. The survey found that staff strongly supported innovation and were constantly looking for better ways to do things and are eager to learn about different ways to do things. It also identified there was some staff that wanted to try new ideas, but they felt Angus Australia discourage risk-taking.

At the end of the first year the following four key focus areas were identified:

- Innovation skills and capability building to build innovation skills and capability among Angus Australia staff and members (e.g. establish an Innovation Focus Group consisting of the progressive members; formalise the process to capture member's innovation ideas; develop educational material to support the uptake of innovative solutions; etc.).
- **Business model innovation** to explore and implement opportunities created by innovation and technology to transform Angus Australia and its services (e.g. implementation of enhanced electronic communications and recording processes for members; introduction of novel breed development and marketing services; etc.).
- Innovative tools and services to identify and initiate projects to develop and deliver improved tools and services for members (e.g.

extended GeneProb analysis; additional traits for genetic evaluation; advanced tools to help members allocate sire and dam; inclusion of genomic information into Breedplan Estimated Beeding Values (EBVs); use of Single-nucleotide polymorphism (SNPs) for parent verification; etc.).

• Value chain innovation - to identify and develop projects and initiatives that will benefit the whole of the beef value chain (e.g. systems for communication and information and price signals related to Angus value; systems for supply coordination; development of management procedures for *Bos taurus* animals introduced into northern Australia; etc.).

The development of the Angus Australia Innovation plan (Figure 2) helped to identify the building of innovation skills and capability among Angus Australia staff and members as the most important and crucial component of the innovation strategy. The improved skills and capability allow staff and members to critically assess Angus Australia's existing business model, its current tools, services and systems and also its position and potential spheres of influence through Certified Australian Angus Beef (CAAB) and its members in the beef value chain.



2010 – 15 Angus Australia Innovation plan on a page

see Angus Australia Strategic Plan 2011 - 2015

Figure 2: 2010 - 2015 Angus Australia Innovation plan on a page

With the above foundations laid, the focus the CISp then progressed to identify projects and activities that would deliver on the overall aims of the

strategy which included the following achievements by the middle of the second year:

- 1. Innovation skills and capability building
 - Conducted first Leading Breeders Workshop with influential breeders (selling approximately 3,000 bulls annually) to enhance the future genetic progress of the breed.
 - Online surveys of members conducted to gauge opinions about and awareness of major issues.
 - Conducted first Senior Managers innovation planning meeting to develop the 2011 Angus Australia Breed Development and Innovation Plan. This has become an annual process.
 - New staff training in the importance of innovation, genomics and genetic conditions.
 - Conducted innovation survey of Angus Australia staff to determine baseline data of organisational innovation capability and staff prevailing attitude towards innovation.
 - Job responsibility for identification of opportunities for innovation with members extended to include members services officers (previously domain of CEO and breed development and innovation manager only). Internal process created and implemented for member services officers to capture member's ideas.
- 2. Business model innovation
 - Formal relationships established with leading companies (Ridley agriproducts, Pfizer animal genetics, Merial Australia) to fast track and option of innovative practices and improve commutation with users.
 - Creation of AngusOnline, an online auction site in partnership with landmark and AuctionsPlus dedicated to the sale and purchase of Angus breed cattle.
 - New service created for "non-engaged" breeders with development of crossbred EBVs.
 - Conducted a two day workshop with AbacusBio to explore alternative business models and identify transformational services.
 - International Livestock Registry (ILR2) functionality has allowed Angus Australia to develop new business opportunities in the live export sector buyer breed certification.
- 3. Innovative tools and services
 - Redeveloped the Angus Australia website to support new systems including development of software to conduct online surveys of members via website.
 - Started the development of ILR online, and advanced platform providing member's access for the first time to change membership/animals/herd details directly on the production database of Angus Australia via the Internet.
 - Developed the first Australian breed society smart phone app.
 - Developed crossbred EBVs.

- 4. Value chain innovation
 - First ever breed whole of supply chain workshop developed and conducted between Meat Standards Australia (MSA), Angus Australia and CAAB for producers.
 - Established relationships with key live exporters (Landmark, Elders, where lights, Expo-trade) to facilitate sourcing and breed certification of Angus animals for live export (breeding purposes only).

With the above successes achieved in the first half of the project, it was decided to focus on the following key activities for the second half of the project:

- 1. Develop systems to encourage electronic submission of data and improve access to information.
- 2. Build awareness and understanding of the GeneProb genetic tool and genetic status of animals.
- 3. Extend GeneProb tool to Red Gene and Mannosidosis.
- 4. Develop and implement a risk assessment tool for the adaptation of *Bos Taurus* bulls to northern Australia.
- 5. Facilitate the direct use of 50K genomic data in EBVs, parent verification and genetic condition screening.
- 6. Implement crossbred EBVs for non-straight bred Angus infused seedstock.
- 7. Develop and implement tools for management of inbreeding and coancestry.
- 8. Facilitate days to calving data capture and roll-out of improved EBVs for this fertility trait.
- 9. Conduct innovation survey of members.
- 10. Present innovations trialled and/or implemented to industry.

4. Priority areas within the project

The following 10 key activity areas were identified as very important to Angus Australia and its members and it was decided to focus on these for the second half of the Angus Australia CISp.

4.1 Develop systems to encourage electronic submission of data and improve access to information

Why important:

New developments in information technology and government initiatives to improve access of rural communities to the Internet create a progressive environment in which beef producers can get easier access to information. This situation opens up the opportunity for organisations like Angus Australia to create systems that will allow members to update their membership, herd and animal details directly on the Angus Australia database.

Better access to the Internet also makes it worthwhile to invest in the development of software and applications that will allow bull buyers the ability to search online for animals that would satisfy their specific criteria. If mobile access at the sale location may be a problem, the information can be stored on mobile devices for off-line access while at the sale.

| KPI: By the end of 2013, increase online: | Result: |
|--|--|
| Registrations from 65% to 80% | ACHIEVED - Increased electronic submission of registration data from 65% in 2009 to 81% by December 2012 |
| 2. Fates from 20 to 60% | 2. NOT ACHIEVED (see below) |
| 3. Transfers from 30% to 60% | 3. NOT ACHIEVED (see below) |
| DNA parent verification requests from 0 to 80% | 4. NOT ACHIEVED (see below) |

Reasons for non-achievement of increasing online fates, transfers and DNA verification:

It was anticipated ILR Online would contribute significantly to the increase in online submission of registrations, fates, transfers and DNA parent verification requests. Unfortunately significant changes were required to be made by the ABRI programmers before it could be released to members. These changes were never completed and the targets were therefore not achieved.

Key achievements:

- Streamlined several methods to import electronic files and made significant contributions to improve ILR2 (the recording system all Australian beef breeds will use to register animals and capture performance information).
- A test version of ILR Online was developed and released to a limited number of members and it was decided not to progress the development and implementation of ILR Online for Angus.
- Developed two versions of Android and iOS Apps to make Angus animal and member information easily accessible to the beef industry. There were almost 150 downloads of these Apps; which paved the way for ABRI to develop an App that could be used to look up any beef animal or breeder in Australia.

Benefits to Angus Australia, its members and/or the beef industry: When purchasing bulls it is very important for the buyer to have access to the most up-to-date information. The development of the Android and iOS Apps made it possible to access and animal's information on the Angus Australia database while at the sale.

Innovative systems like ILR Online will make it possible for Angus members to update their membership information and enter registration and performance data directly on the Angus Australia database. Members will also be able to view historic financial transactions, download a range of files and monitor the progress of submitted requests in ILR Online. The ability to interact directly with the Angus Australia database will significantly improve the efficiency of members as well as the society. The electronic submission of data by members will also reduce the potential for errors as it will only need to be entered once by the member rather than twice as was previously required.

The development of the Angus Apps inspired ABRI to invest in the necessary staff resources to develop an App that would allow access to any of the breed society databases that are hosted by ABRI.

The financial and time investments made by Angus Australia will benefit the other breed societies and the broader beef industry as it is expected that ABRI will make ILR2 and ILR Online available to the other breeds. The development of these systems addresses inefficiencies associated with costs, errors and time of manually entering information, which was supplied on paper and will benefit the whole beef industry.

4.2 Build awareness and understanding of the GeneProb genetic tool and the genetic status of animals

Why important:

The discovery of three recessive genetic conditions in Angus in 2008 and 2009 could potentially have had serious implications for the breed's reputation as a profitable, high performing and easy-care breed. Furthermore, pessimists could blame the occurrence of these genetic conditions on the focus and high intensity selection for high performing genetics. For these

reasons, it was of critical importance to reduce the risk of defective calves born in commercial herds using Angus genetics.

After the GeneProb software has been developed and used to calculate the probabilities of all animals in the Angus database, it was important to educate members and buyers of Angus genetics about the results. A high level of awareness amongst commercial producers has the additional advantage of motivating Angus members to reduce the gene frequency in the bulls they intend to sell.

| <i>KPI:</i> Reduce gene frequency of recessive genetic conditions: | Result: |
|---|--|
| Reduce cases of defective calves | ACHIEVED - Reduced reported cases of defective calves for the three main genetic conditions from over 50 in 2009 to less than 5 in 2012 |
| Reduce carrier frequency in breeding population | ACHIEVED - Reduced the estimated average potential carrier percentage of calves born from about 7% in 2008 to around 2% in 2012 (see Figure 3) |



Figure 3: Recessive genetic conditions frequency 2003-2012

Key achievements:

• In the four and a half year period from 2009 to the middle of 2013, Angus members invested in excess of \$1.2 million to test more than 42,000 animals for Arthrogryposis Multiplex, Contractural Arachnodactyly and Neuropathic Hydrocephalus.

- In addition to the above investment by members, the Angus Australia board approved funding to test prominent sires for the three main genetic conditions.
- Generated awareness amongst members and commercial beef producers about the importance of reporting any abnormal calves.
- Sent DNA samples of about 20 animals to Dr. Jon Beever in the USA for investigations into another potential genetic condition.

Benefits to Angus Australia, its members and/or the beef industry: GeneProb was developed specifically to assist members to conduct targeted testing for animals with a high probability of being a carrier, therefore, reducing the testing of un-informative animals. It also enabled Angus Australia to publish an expected status for all animals in the Angus database. This raised the awareness among Angus members as well as Angus bull buyers about these important genetic conditions.

The presentations at a Southern Beef Technology Services (SBTS) webinar session (35 attendees) and at the South Australian Beef Cattle Assessment School in Lucindale (80 attendees) helped other breeds to learn from Angus Australia's experience and to develop their own rules and management strategies accordingly. Carel Teseling presented a paper about Angus Australia's experience in the effective management of genetic conditions to about 90 international attendees at the Association for the Advancement of Animal Breeding and Genetics (AAABG) conference in Perth while the Innovation Manager also co-authored another two papers about management strategies at herd level.

These presentations and publications served the extremely important purpose to inform and educate other breeds as well as other species about the effective strategies followed by Angus Australia to, over a very short period, successfully reduce the percentage of potential carriers in the population.

GeneProb is now an integral part of the genetics toolkit used by most of the Australian breeds to manage recessive genetic conditions. The development of GeneProb made it possible to manage genetic conditions effectively and therefore, addressed concerns of many seed stock breeders that selection for improved performance may lead to higher levels of inbreeding, which may increase the potential for genetic conditions.

4.3 Extend GeneProb tool to red gene and Mannosidosis

Why important:

In Angus, the red gene is a recessive trait (any black animal could be a carrier of a red gene), and when two red gene carriers are mated one could expect as many as 25% of the progeny to be red. Many commercial beef producers receive market premiums for black Angus calves and red calves born in these herds represent a loss of revenue. It is therefore important to publish accurate information on the probability of an animal being a carrier of the red gene. After an accurate test for Mannosidosis was developed in the 1970s, Angus members invested significant resources to test all suspected carrier animals as well as associated bloodlines for this conditions and removed all carriers from the population.

| KPI: Create new genetic status predictions for | Result: |
|--|--|
| 1. Red gene | 1. NOT ACHIEVED (see below) |
| 2. Mannosidosis | ACHIEVED - A GeneProb analysis was conducted for Mannosidosis however due to the low potential carrier frequency it was decided not to publish these results |

Reasons for non-achievement of new genetic status predictions for red gene:

• Significant resources were dedicated to the analysis of pedigree information associated with animals tested to be carriers of the red gene. Unfortunately there are still a number of animals with inconsistent red gene test results compared to the available pedigree information. These animals need to be investigated further to ensure the results recorded on the Angus Australia database are correct. Once this investigation has been completed it should be possible to conduct a successful GeneProb analysis for red gene and publish the results on the Angus website.

Key achievements:

- The Angus Australia system has been changed to display whether an animal is a carrier or free if tested for red gene and Mannosidosis.
- Currently, the GeneProb results for red gene are influenced by a small number of erroneous data that impact negatively on the analysis.

Future work:

GeneProb analysis of Mannosidosis results indicated that the frequency of potential carriers is almost non-existent. It would therefore, not warrant the publication of the status of animals for this condition.

Investigations into potential erroneous red gene results will require a lot more resources than initially anticipated. A significant amount of analysis has already been undertaken and many animals with incorrectly recorded colour (e.g. black animals recorded as red and red animals recorded as black) has been identified and corrected. Even though this activity has not been completed as yet, work will continue as resources allow.

Benefits to Angus Australia, its members and/or the beef industry:

The display of DNA test results for red gene and Mannosidosis on the Angus website allows members and commercial bull buyers to ascertain the risk of an animal potentially carrying one of these genetic conditions.

4.4 Develop and implement a risk assessment tool for the adaptation of Bos Taurus bulls to northern Australia

Why important:

Research conducted by the Beef CRC demonstrated crossbreeding could add significant potential financial benefit for northern Australia's beef enterprises. Over the past decade, the number of Angus bulls bought by beef producer in northern Australia increased steadily. It became apparent that many of these producers did not appreciate that the successful adaptation of Angus bulls to their properties requires more management inputs than what they were used to with Brahman bulls.

Angus Australia realised it was very important to invest in a project to determine risk factors and develop best management practice recommendations to increase the successful adaptation of Angus genetics to harsh northern environments. To that end a MDC project (P.PSH.0615) was initiated to investigate management practices to improve the successful adaptation of *Bos taurus* bulls to non-temperate Australia.

| KPI: | Result: |
|---|--|
| 1. Develop surveys | ACHIEVED - Surveys were developed to assist with data collection while seedstock and commercial producers were interviewed |
| 2. Interview seedstock and commercial producers | ACHIEVED - In person interviews were arranged and conducted with 60 suppliers and/or users of Angus genetics |
| Develop best practice recommendations | ACHIEVED - Best management practice recommendations for the adaptation of Angus genetics to harsh northern environments were developed and published on the website |
| Develop an online decision support system | 4. ACHIEVED - An online risk assessment questionnaire with best management practice recommendations for the successful adaptation of Angus genetics to northern environments was released to industry at the Angus Australia National conference |

Key achievements:

- Separate surveys were developed for seedstock Angus producers and northern commercial producers buying Angus Bulls. The surveys were also adapted to interview feedlots.
- 20 Angus, Brangus and Santa Gertrudis seedstock producers were interviewed who sell some of their bulls to northern bull buyers.
- The Seedstock producers were interviewed to develop an understanding of their management and production systems prior to the movement of bulls into northern, non-temperate Australia.
- Two feedlots and 38 commercial producers we interviewed on property to allow the visual assessment of the animals and the condition of bulls. It took on average three hours to complete an interview; however, this varied between two and six hours.
- Some of the Commercial producers were recommended by the seedstock producers and this process identified pre and post relocation management practices that can affect the success of adaptation of bulls being sold into northern, non-temperate Australia.

Benefits to Angus Australia, its members and/or the beef industry:

The development of best management practice recommendations to increase the successful adaptation of *Bos taurus* bulls to northern Australia will help northern producers to successfully introduced *Bos taurus* genetics into their production systems. This should have a positive financial impact through increased growth rates, improved MSA compliance, increased reproduction rates and the introduction of the poll gene in predominantly *Bos indicus* herds.

The online risk assessment questionnaire will make it easy for northern producers to access best practice recommendations for the adaptation of Angus bulls specifically tailored for their environment and management. The questions are focused and the way the information is presented is very logical and easy to follow. The Web page has been built with ease of maintenance in mind. Additional information can also be added easily as Web links and PDF or Word documents.

4.5 Facilitate the direct use of 50k genomic data in EBVs, parent verification and genetic condition screening

Why important:

Over the past five years SNPs evolved to the point where it is now regarded the platform of choice for parent verification, genetic condition analysis and the genomic prediction of performance traits.

Internationally there has been significant progress made with the development of prediction equations based on the 50K genotypes from animals which can then be used as an early indication of the animal's genetic merit for different traits.

It is important for the Australian beef industry to develop systems enabling the utilisation of the information generated by this new platform for parent verification, genetic condition screening and incorporation of genomic data in the estimation of breeding values.

| KP | PI: | Re | esult: |
|----|---|----|--|
| 1. | Increase accuracy of genomically enhanced EBVs | 1. | ACHIEVED – Genomic information gets utilised in the Breedplan analysis and increase the accuracy of the relevant animals |
| 2. | Increase SNPs for parent verification from 0 to 60% of sires | 2. | ACHIEVED – Almost 95% of Angus sires now have SNPs on file that can be used for parent verification |
| 3. | Use SNPs to screen those animals on Angus database with 50k analysis for genetic conditions | 3. | ACHIEVED – 50K results can be used to identify the genetic condition status of animals for Neuropathic Hydrocephalus and Mannosidosis |

Result:

- Improvements to the Angus Australia database infrastructure to allow the storage of genomic information and the physical SNP genotypes were implemented.
- Statistical methods were developed and implemented for Angus to allow the blending of genomic information with Breedplan EBVs to produce genomically enhanced EBVs.
- Developed and implemented a system which uses SNPs as the primary source of information for parent verifications.
- In January 2013 Angus Australia started the process of migrating to SNPs as its new platform for parent verification. Already more than 80% of parent verifications are conducted through SNPs.

Key achievements:

- Statistical methods to allow genomic information to contribute to Breedplan EBVs were developed and implemented for Angus.
- Developed and implemented database infrastructure and software to allow genomic information to be stored and also allow it to be used to conduct parent verifications.
- Participated in and initiated several projects to ensure the majority of influential Angus animals were genotyped, and the genotypes were made available and loaded into the Angus database.
- Facilitated the submission of 1200 samples for the Beef CRC / MLA 50K young animal project.

- SNPs from almost 4,000 Angus animals were gathered and loaded on the Angus database and will be used to conduct parent verification testing.
- Developed and implemented a system which uses SNPs as the primary source of information for parent verifications.
- Developing the above system and utilising SNPs for parent verification allows Angus Australia to run parent verification analysis in-house.

Benefits to Angus Australia, its members and/or the beef industry: High density genotyping and the resulting genomic information are especially valuable when young animals and animals in small contemporary groups are tested. The associated increases in EBV accuracy allow for more informed selection decisions when animals are at a younger age than previously possible.

The cost of testing an animal for microsatellites stayed the same for the last 10 years. In contrast to this the price of testing an animal for SNPs, has been reduced dramatically and has now reached a point where it is almost half the price of testing an animal for microsatellites. SNPs genotypes generated by different labs are comparable and don't need any adjustment factors as was required by microsatellites. Using high density SNP genotyping for production traits has the additional advantage that the SNPs for parent verification are available at no additional cost.

Angus Australia facilitated the submission of almost 1500 DNA samples for the Beef CRC/MLA influential sire and young animal projects. These projects were specifically targeted to create significant data sets to help Australian researchers with the development of methods to analyse SNP data and increase the Australian beef industry's intellectual property in this area. In future this data will play a very important role as a discovery and validation population for new genetic prediction equations.

4.6 Implement crossbred EBVs for non-straight bred Angus influenced seedstock

Why important:

In Australia beef production systems vary substantially from southern temperate climates to very harsh northern environments. Angus Australia identified the need to facilitate the development of crossbred EBVs to help members compare crossbred genetics directly with Angus genetics.

| KPI: | Result: |
|--|--|
| Create crossbred EBVs to allow the genetic comparison of non-straight bred Angus to Angus. | ACHIEVED – Breedplan now calculates EBVs for non-straightbred Angus cattle that are directly comparable with Angus EBVs. |

Result:

- Software and assumptions were developed by Animal Genetics and Breeding Unit (AGBU) and implemented in the December 2011 Angus Breedplan analysis to generate EBVs for non-straight bred Angus animals that were directly comparable to Angus animals.
- Additional descriptions of the overseas analysis and Expected Progeny Differences (EPDs) from the American Brangus, American Simmental and American Red Angus associations were supplied to AGBU to assist them to improve the analysis further.
- New procedures were developed to allow the overseas Brangus EPDs to contribute to the estimation of EBVs for crossbred animals in the Angus Australia Breedplan analysis.

Key achievements:

- Implemented the Angus crossbred Breedplan analysis which facilitate the direct comparison of crossbred with straightbred Angus animals.
- Imported overseas EPDs from the American Angus, American Red Angus, International Brangus and American Simmental associations.
- Obtained descriptions of overseas analysis and genetic parameters to enable the use of EPDs to enhance the initial Breedplan EBVs of imported sires.

Benefits to Angus Australia, its members and/or the beef industry: This development gives Angus members and commercial bull buyers' greater diversity of available genetics to choose from to satisfy their specific production system, market and environmental requirements.

The development and implementation of the Angus crossbred Breedplan analysis made it possible for other breed societies to also change their analysis and make it possible for their members to register crossbred animals.

4.7 Develop and implement tools for management of inbreeding and co-ancestry

Why important:

Many of the pedigrees in the Angus Australia database only go back to about 1980 which does not allow for the accurate calculation of inbreeding and the relatedness of animals.

It is very important to maintain genetic diversity in a population of purebred animals to ensure genotypes that are not necessarily associated with improved production doesn't get lost. The reason for this is there are still traits that could contribute to the healthiness of beef that are currently not being monitored. Genetic diversity is also essential to ensure other Bloodlines are available for selection if a serious genetic condition is found in a portion of the population.

| KP | PI: | Result: |
|----|--|--|
| 1. | Reduce inbreeding rate in Angus population from 0.25% per year to 0.15% per year | 1. NOT ACHIEVED – (see below) |
| 2. | Implement MateSel. | ACHIEVED – MateSel was implemented and Angus members now have the ability to review the inbreeding of planned matings when choosing the bulls for their mating program |

Reasons for non-achievement of reduced inbreeding rate in Angus: Estimation of inbreeding has not yet been done due to all historic pedigree data not yet being loaded.

Key achievements:

- Completed the entry of almost 80% of historic pedigrees into spread sheets to allow the loading of this information into the Angus database.
- Additional 3 generation pedigree information for almost 4,500 overseas animals was downloaded and imported into the Angus system.
- Once completed, this information will be invaluable to improve our understanding of the accuracy of genomic relatedness of animals.
- Mating allocation software (MateSel) that allows breeders to determine a maximum acceptable level of inbreeding has been developed and released.

Benefits to Angus Australia, its members and/or the beef industry: Good progress has been made with scanning and conducting character recognition on all the available Australian herd books has been completed. Almost 80% of this information has now been edited and once this task has been completed all the data can be loaded onto the Angus Australia database. Once all the historic pedigree information is loaded on the Angus database it will be possible to calculate the relatedness of animals much more accurately than what is currently possible. The additional pedigree information will in future also assist to determine probable progenitors of genetic conditions.

4.8 Facilitate Days to Calving data capture and roll-out of improved EBVs for this fertility trait

Why important:

Reproductive performance is a key determinant of profitability in a beef cattle enterprise. Consequently, selection for improved reproductive performance should be an important consideration for all beef cattle producers.

While many producers manage the reproductive performance of their female herd using different management strategies, in particular the culling of females that fail to get in calf, research has shown that female fertility is influenced by the genetics of the breeding herd.

| KPI: | Result: |
|---|--|
| Increase number of animals with Days to Calving records | ACHIEVED – Members were contacted and requested to supply historic mating information. Tens of thousands of records were supplied and loaded on the Angus database |
| 2. Increase average EBV accuracy from 40 to 50% | ACHIEVED – The additional mating information increased the accuracy of the relevant animals to above 50% |

Result:

- Identified additional information required to improve the analysis of fertility traits.
- Developed new file formats to make provision for additional information required for improved Breedplan analysis of fertility.
- Reformatted existing data to allow its inclusion in the new fertility analysis.
- Implemented the new and improved analysis of fertility traits for Angus and supplied the EBVs to members.

Key achievements:

- Met with Sapien Software and Practical Systems to ensure their software systems can capture the additional joining details information and submit it to Angus Australia in the appropriate format to allow it to be loaded.
- All the herd management software companies are now able to capture and submit the additional information electronically to Angus Australia. This will contribute better data that will improve the heritability of the trait and enhance the analysis and the accuracy of the EBVs.

Benefits to Angus Australia, its members and/or the beef industry Days to Calving EBVs provide a useful tool that breeders can use to improve

the genetics of their females for fertility, in association with their routine management and culling strategies.

The advantages of the new and improved analysis will benefit Angus members, as well as the broader beef industry, by providing more accurate estimations of the genetic potential of an animal for fertility.

4.9 Conduct surveys of members

Why important:

Surveys are very important to ensure we are well connected with our members and understand their needs and requirements. It also supply valuable information about the user friendliness of current services and help to determine which areas need further development and improvement.

| KPI: By 2012 | Result: |
|---|---|
| Identify top 10 priorities for building innovation capability among members | ACHIEVED – members were engaged through surveys and workshops |

Key achievements:

- Developed an online system that allows the development and distribution of surveys to members in their individual secure member log in areas.
- Conducted a workshop with the Angus Australia board to determine innovation priorities.
- Surveyed members about their awareness and use of the Angus iOS and Android phone apps and how their attitude towards the different available phone platforms could influence the replacement of the current mobile phones.
- Developed and distributed a secure member e-mail survey to collect the GPS locations of member's properties.
- A survey consisting of 13 questions was distributed via Survey Monkey and hard copies to about 2800 Angus Australia members.

Benefits to Angus Australia, its members and/or the beef industry:

As part of this activity a system was developed to enable Angus Australia to conduct secure online surveys of its members. This system is linked to the current secure login and as soon as a member log in to their secure area the survey is presented to the member to be completed.

One of the member surveys conducted was to determine which proportion of members own a smartphone to decide if the development of an Angus app would be worthwhile. The survey indicated sufficient member Android and iPhone ownership to warrant the development of an Angus App for these operating systems. Subsequently the ILR online project was varied to include the development of an App for Angus Australia. This resulted in the development of the first App for a Australian beef breed.

A survey consisting of 13 questions was distributed via Survey Monkey and hard copies to about 2800 Angus Australia members. Responses indicated members were very satisfied with Angus Australia's services and 58% of respondents saw the investment in genetic research as important.

4.10 Present innovations trialled and/or implemented to industry

Why important:

It was important to present any innovations trialled and/or implemented by Angus Australia to the rest of the beef industry. This is to ensure the benefits from any of these innovations will be utilised as widely as possible by other organisations. Adoption of these innovations will improve their efficiency or may stimulate additional improvements to other aspects that are of particular importance to them.

Collaboration with other organisations plays a vital role in ensuring new ideas get generated and new inventions are developed, trialled and hopefully implemented.

| KPI: On an annual basis | Result: |
|--|---|
| Use BTLG meeting to inform other breed societies of innovations trialled and/or implemented under the Angus CISp | ACHIEVED – New innovations, tools and system improvements were presented to other breed societies |

Key achievements:

- Presented innovations, tools and system improvements at meetings in Armidale and several national and international conferences allowing Angus to communicate these new developments to about 2,000 persons of which about 20% were international attendees.
- The majority of tools and systems developed by Angus Australia have now been implemented by several local and international customers of ABRI.

Benefits to Angus Australia, its members and/or the beef industry: Delivered presentations to industry on the utilisation of GeneProb to help seedstock and commercial producers ascertain the risk of an animal to be a carrier of one of the known genetic conditions at a SBTS webinar, AAABG conference and the South Australian Beef Cattle Assessment School.

At the World Angus Secretariat meeting reported on GeneProb and the Angus App developments.

The development and benefits of the Angus App was discussed with NZ Angus and it was decided to cooperate in further development.

At Breedplan Technical Liaison Group (BTLG) meetings the following developments were discussed:

- A major discussion was to determine consensus on the graphical display of EBVs used by the Angus App. Other breeds decided this graphical display should be made available for wider industry use.
- The process of blending genomic information with Angus Breedplan EBVs
- How the Beef CRC/MLA 50K genotypes will be used for research and when and how it is expected results will be rolled out to industry.
- An update was given to the other breeds on the Angus Sire Benchmarking Project.
- The delivery and possible improvements to MateSel was discussed with the other breed societies.
- Development of the graphical display of EBVs to help commercial bull buyers visualise the potential EBV movement based on the accuracy of that EBV.

5. Innovation Managers Network Meetings

The MLA has developed a Red Meat Industry Innovation Manager Network to support the Innovation Managers within the industry.

The motivation behind this network is to deliver information and idea development to the Innovation Managers to ensure they have access to cutting-edge technology, tools, personal and professional development and have the ability to interact with idea generators throughout Australia and the world. This network also created a safe and stimulating environment to interact and share ideas with the Innovation Managers of the other organisations participating in the CISp.

Brisbane - 16-18 December 2009

The meeting in Brisbane was the first Innovation Managers Network meeting attended by the Innovation Manager. Even though Angus Australia was not at that stage a participant in the CISp, Angus Australia was allowed to attend this meeting to get a feel for what the meetings involve and to determine if it would be of benefit.

On the first day Jason Cotton delivered the module on Innovation Strategy and Process Development. This module considered the elements required to develop an innovation strategy for the business and the processes that enable the delivery of the strategy. The program for the first day included:

- Purpose of an Innovation Strategy Defining the Strategic Context
- Defining Strategic Objectives for Innovation
- Elements of an Innovation Strategy
- Case Study South East Water, Innovation Strategy at Work
- Constructing an Innovation Strategy Group work on constructing an innovation strategy
- Innovation Process Divergent Convergent Thinking, Stage Gate, Stimulation to Commercialisation. Group work on a skeleton process

Jason's session on Innovation Strategy and Process Development improved the participants' understanding of practical tools and frameworks for constructing and implementing a powerful innovation strategy. It also gave an insight into the approach to innovation strategy development and implementation taken by other successful companies. This session helped to give participants the confidence to develop an innovation process that effectively moves ideas to a conclusion.

Darrell Mann from the UK, a world-leading expert on the Theory of Inventive Problem Solving (TRIZ) provided practical tools, guidelines and examples to assist in formulating, executing and delivering more robust strategies. The topics for the second and third day included:

- Big picture overview importance of innovation and results from a 3million data point study of the DNA of successful innovation
- Defining Better Research Challenges/Design Goals and how to explore better ways to understand unspoken customer needs and thus define 'Ideal Final Result' solution opportunities

- Voice Of The Customer examine new ways of understanding unspoken market needs in order to anticipate future opportunities before customers are able to articulate them. Material from this section was extracted from the 'TrenDNA' book
- Making Better Use Of Existing Resources short exercise to explore new ways of thinking about maximising the utilisation of things already in and around the systems and processes we design.
- Voice Of The System Predicting Future Evolution Jumps a handson exploration of key step-change technology and business evolution trends and their impact on the generation of Intellectual Property and on overall business strategy
- Solving Contradictions introduction to inventive thinking that eliminates the trade-offs and compromises that traditionally impede the progress of both technology and business systems
- Prioritising Opportunities Systematic Innovation is renowned for being able to generate large quantities of new IP and potential solutions. Examine tools and strategies to help rank and manage innovation options and directions

The two-day workshop led by Darrell Mann featured content specifically designed to suit Innovation Managers who are responsible for co-ordinating innovation strategies (i.e. strategy development, idea identification, co-ordination and initiative execution), while at the same time being consistent with the Systematic Innovation certification programme. It supplied Innovation Managers with practical tools, guidelines and examples to assist them in formulating, executing and delivering more robust strategies. It also delivered working knowledge of a suite of applicable tools that Innovation Managers can use in their daily work.

The meeting was extremely well organised; the facilitators was of world-class standard, the program and all information supplied very practical and the other participants and the MLA staff friendly, helpful and a pleasure to work with in the groups.

Melbourne - 25-26 May 2010

This meeting was led by Jason Cotton and explored a number of key strategic elements for building a successful innovation program. The elements focused on the importance of structures, role definition, building skills and capability, and stimulating innovation through reward and recognition.

The program for the first day included the following topics:

- Structuring Innovation exploring different models for innovation with case examples from a number of organisations
- Innovation Manager/Facilitator generic skills and role elements (the wheel)
- Developing a skills matrix for innovation and building innovation capability within a company
- Reward and recognition systems for innovation

It was very interesting to explore and think about different ways of structuring an organisation for innovation, their appropriateness and options for developing or improving the structure of Angus Australia to stimulate an innovation culture. It also explained how to develop a skills matrix for innovation, how to build innovation capability within an organisation and how to stimulate innovation through reward and recognition systems.

On day two, I was with the group that visited Armstrong Flooring and Ceilings which has a proud tradition of manufacturing in Australia. Since establishing its manufacturing facility at Braeside in 1969, Armstrong has continued to maintain a cost-effective manufacturing enterprise in Victoria, despite the pressures from international competition and cost structures. Core to this success has been innovation; however, it has been ad hoc. The Next Steps program, which they developed in-house, helped them to systematise innovation so that the benefits are delivered more frequently and ensure Armstrong's long-term sustainability. This visit emphasised the importance of having good systems and processes in place before you launch an innovation program and then how to stimulate innovation by engaging staff through reward and recognition systems.

Melbourne – 6-7 December 2010

This meeting introduced participants to Fonterra, a leading consumer product innovation centre, to explore the practical application of the philosophy of Customer Led Innovation. The purpose of the site tour to Fonterra was to get an insight into how Fonterra manages innovation projects starting with a background to Fonterra's business and its brands.

Fonterra is globally structured with 4 primary functional areas consisting of operations, food service, branding (Aust & NZ) and brands reporting directly to the Australasian CEO with 500 of their 16,000 employees working in innovation, mostly in New Zealand. Key to their business success has been strategic joint ventures such as with Nestle who is the largest customer and is also a competitor.

Innovation is a continuous journey for Fonterra with key elements:

- Something new that must be better than what already exists
- It must be viable with a positive commercial outcome, three year revenue and EBIT (but three years is maybe too short to measure)
- It must have widespread appeal
- Have people looking at what their sites might look like in 5-10 years
- Moving to open innovation undermines and scares employed scientists
 - Need to build a culture that rewards on solution
 - Build (have core capability) and buy (look externally, research, buy existing research more often in manufacturing)
- cost reduction/new product development/new technology development (e.g. mozzarella that can be sold same day instead of 3 weeks later – no ageing required)
- Also R&D focus on pre-farm gate factors including pastures & production efficiencies, animal genomics, etc.

Five key innovation messages:

- Innovation is a necessary part of growth
- Innovation drive positive commercial outcomes
- Benefits of new innovation are whole of supply chain
- Innovation pipeline can be strengthened
- Strong foundation in place across the global networks

This visit also showcased the importance of observing customers to gain insights into their preferences and how to translate consumer insights into innovative offerings. It was emphasised that customers sometimes don't know what they really want and would respond in surveys to what they know rather than what they want.

During day two Jason Cotton addressed the successes and challenges being faced by innovation managers in their companies and workshop these to explore motivations of staff and how they apply to leading innovation.

The program stimulated discussion about and supplied strategies and tactics on how to overcome challenges faced when trying to develop and/or implement innovation. It also looked at ways to motivate people to engage in innovation and how to design a series of activities to engage people.

Sydney – 16 March 2012

This meeting included a post-Hargraves conference event, discussing how businesses have put the theory of innovation into action. The morning session was attended by representatives from a range of companies with a focus on innovation.

The afternoon, facilitated by Mark Bennett, was spent planning the next phase of the MLA Innovation Managers Network.

The program included the following topics:

- Hargraves Institute Post Conference Event "Innovation in Action"
- Instilling Enterprise Innovation Michael Baldwin (Head of Innovation and Implementation, Global Transactional Services, Westpac Institutional Bank)
- How to lead the way in practical innovation Tess Julian (Director, Ratio)
- Opportunities for 2012 John Maclay (Program Manager, Hargraves Institute)
- Refresh on Innovation Manager's Network, the original intention and future focus
- Communities of Practice and how they might apply in the meat industry to help share knowledge both within and between companies
- Where to now for the Innovation Manager's Network?

It was really interesting to get an insight into the innovation processes used by Westpac to ensure they are industry leaders in the area of online banking.

6. Learning and Development

A Gap Analysis was conducted, and it was determined that, as part of his professional development program, the Innovation Manager required high level specialist training in innovation to help him in his role as innovation manager. It was also determined that he would benefit from management training to assist him in being a better and more effective manager to the team that he manages.

Innovation Leadership at University of Queensland Business School – 30 August to 3 September 2010

Innovation is a fundamental source of competitive advantage in business and is critical to organisations of all sizes and sectors. It changes our thinking and products, is a dynamic, complex and open process and involves many players and parts of an organisation. Managing innovation requires a sound understanding of the nature of the innovation process, which has changed radically over recent years.

This course equipped managers with the skills necessary to lead innovation for sustainable competitive advantage. The course incorporated international best practice and presents an integrated framework to help managers lead innovation within their organisations. Participants met with leading innovation industrialists who revealed cutting-edge practice in innovation strategy, development and implementation.

Key benefits

Through attending this course, the participant learnt to:

- Understand the critical strategic importance of innovation for all organisations
- Demonstrate awareness of the strategic and operational managerial frameworks and tools necessary for innovation leadership
- Develop their own innovation leadership capabilities and assess the unique situation in their own workplaces, as well as analyse current problems and identify possibilities for development in their own context
- Measure and assess the real returns of innovation leadership
- Engage with leading experts who provide rapid exposure to new ideas, perspectives and ways of thinking about innovation leadership.

Association for the Advancement of Animal Breeding and Genetics (AAABG) conference in Perth - 19-21 July 2011

A large proportion of Angus Australia's innovation strategy is focused on genetic tools and new and innovative systems involving genetic analysis. One of the key roles of the AAABG conferences, held every second year, is to inform industry of the latest advances in animal breeding.

Three papers were delivered at this conference, which discussed how Angus Australia used GeneProb to manage three genetic conditions at the breed and individual herd level. These presentations also gave researchers and industry participants an opportunity to think about how this software solution can be utilised in their own breed or in the other species. This was also a great opportunity for the Innovation Manager to network with other researchers to learn more about new findings on subjects of interest and furthermore discuss potential future research necessary to investigate existing issues. Attending this conference increased the ability to recognise problems, both at the level of research and of application, and increase the understanding of current approaches and their solutions.

Graduate Certificate in Management with Australian Institute of Management (AIM) - 2013

The increasing complexity of the economic and social environment and the escalating rate of change are forcing managers to rethink the capabilities required for effective management and leadership. There is increasing recognition that managers require more than just technical skills in a functional role to succeed. Employers today are expecting their managers to understand finance, strategy, marketing and people management. The course is designed for experienced managers seeking to expand or update their existing knowledge and skills, practising managers wishing to formalise their management experience with qualifications or technical managers who require formal grounding in the disciplines of management. Made up of the four modules listed below the qualification will take approximately 12 months to complete.

Managing, Leading and Developing People

This program will help participants get the most out of their teams. Every member of each team is different, with different goals, strengths, weaknesses and personalities, that that needs to be managed differently. The four day course run over three weeks, giving participants the necessary understanding and skills to lead more effectively, and help everyone in the team reach new heights. On completion a participant will become a more effective leader, not only making him/herself a more productive member of the organisation, but every member of the team as well.

Managing Financial Resources

This program is specifically developed for middle or senior managers who do not have formal accounting qualifications. The four-day program runs over four weeks and is designed to equip participants with the knowledge to interpret financial statements, develop well-reasoned and meaningful budgets, and judge the viability of capital projects in cash-flow terms. Participants will learn and expand on how to understand the basic concepts and principles of the finance and accounting function, interpret the Statement of Cash Flows, manage financial resources by using ratio analysis, examine and assess the use of operating drivers, budgeting, and financial planning in business, examine how operating, investment, financial and other decisions interact within a broader strategic framework.

Managing, Developing & Implementing Strategy

This program will equip participants with the tools, practical structures and techniques for successful strategic thinking, planning and action. It delves into the importance and organisational culture and embedding behaviours that will aid the successful implementation of the strategy. Participants will develop

the ability to think and contribute towards the strategic planning process, as well as being able to effectively drive change throughout the organisation in a way which supports the organisational goals. Participants will learn how to analyse the external and internal environments, develop and evaluate the strategic options based upon current market and the organisation's ability, develop business plans for strategy implementation, identify influences on the culture within the organisation and identify what skills and resources will be needed to fill performance gaps.

Managing Organisational Improvement

With business more competitive than ever before, in markets that are now absolutely global, the challenge for Australian organisations is crystal-clear: become world competitive, or else. This program will teach participants how to analyse organisations in terms of systems, processes and activities, evaluate and apply a holistic management framework for sustainable organisational excellence, use a framework to continually improve the 'quality of management' as well as the 'management of quality' evaluate methodologies to implement empowerment of people and a customer focus.

7. Summary

Angus Australia benefited significantly through the development and capacity building of its staff and members. The opportunity to have a dedicated innovation manager supported by MLA made it possible to ensure resources were allocated towards the development and implementation of innovative systems that would contribute to the sustainability and profitability of Angus Australia.

Angus members are the direct beneficiaries of better and more efficient systems that make it easier and more cost effective to register animals, record performance information and make changes to their membership details. GeneProb and DNA testing made it possible for members to efficiently manage genetic conditions without the need to get rid of all relatives from carrier bloodlines.

ABRI already made several of the innovations developed by Angus Australia available to the other breeds and their members. The subsequent associated genetic improvement advantage that the other breeds gain will be available to users of those genetics.

Smartphone and tablet apps as well as the online system makes it very easy for commercial bull buyers to find bull breeders and information on animals that would satisfy their selection criteria. The use of genomic information to contribute to the accuracy of the EBVs is an important development that in the long term will significantly benefit the whole beef industry.

Resourcing of R&D organisations and other service providers to the beef industry are a very important component of developing and implementing innovative systems and services. One of the major hurdles the CISp had to contend with was to convince partner organisations of the importance and benefits of the innovations and then to get those projects resourced.

The CISp helped Angus Australia and its board to recognise the value and importance of innovation as a means to increase efficiency of the organisation and its members, thus improving profitability and long term competitiveness.

Without support of the CISp Angus Australia would not have been able to commit the necessary financial and staffing resources to appoint and train a dedicated innovation manager to champion innovation in the organisation. The investment made through the CISp in building innovation capacity within Angus Australia will have a long lasting influence on the culture of the organisation.

8. Appendices

Appendix A – Angus Australia Innovation Manager Position Description

Angus Society of Australia

86 Glen Innes Road, Armidale, NSW, 2350 Postal: Locked Bag 11, Armidale, NSW, 2350 Telephone: (02) 6772 3011 Fax: (02) 6772 3095 Email: <u>office@angusaustralia.com.au</u> Website: <u>www.angusaustralia.com.au</u> A company Limited by Guarantee ABN 56 000 574 210



POSITION DESCRIPTION - BREED DEVELOPMENT AND INNOVATION MANAGER

| Reports to | Chief Executive Officer |
|---------------|--|
| Location | Armidale, NSW with travel throughout Australia |
| Base Package | Base Salary - negotiable based on experience, plus superannuation and fully maintained vehicle. |
| Role | This position will manage the development and support of Angus registrations, Group Breedplan and associated technologies. |
| | The person will take the lead role in developing innovative systems and services to maintain Angus Australia's leadership in the Australian beef industry. |
| Support Staff | Senior Registrar, Registrars, Information Officer, Contract staff as required, including ABRI support personnel. |
| Supervises | Office Administrator in absence of CEO |

Duties & Responsibilities

- 1. Supervise the development, maintenance and implementation of pedigree registration and performance recording systems, and Breedplan and associated technologies within Angus Australia and its service agents.
- 2. Manage breed development projects eg. Young Sire Program, Fawn Calf Program and MDC Progeny Test.
- 3. Assist the Board in development of Breed Development Strategies and policies.
- 4. Assist in the development of strategic and operational plans for Angus Australia, particularly development of the Breed Development Operational Plan.

- 5. Provide innovation in the development and use of the Angus systems to provide value-added services to members and clients.
- 6. Manage the technical design, development and innovation of the Society's web site and provide breed development content.
- 7. Provide a Breedplan diagnostic service for members to resolve individual animal and herd issues.
- 8. Keep Angus Australia abreast of technical developments which will improve the profitability of its members.
- 9. Develop Quality Assurance systems to assure the integrity of Angus Australia's information services.
- 10. Represent Angus Australia and its members at leading industry seminars and forums including presentation of technical papers and liaise with prominent industry specialists and groups.
- 11. Design and develop innovative industry information & data management systems.
- 12. Work as a team member with all other Society staff, consultants and members.
- 13. Assist with other duties as required.

Selection Criteria

Essential:

- 1. Appropriate tertiary and/or post-graduate qualifications in breeding and genetics.
- 2. Ability to lead and manage the genetic development of the Angus breed.
- 3. Ability to lead development in advanced information management and delivery systems.
- 4. Ability to apply expertise and innovation to improve profitability in the livestock supply chain.
- 5. High level of knowledge and experience in the livestock industry.
- 6. Demonstrated ability to lead and manage high performing teams.

Appendix B - Key questions to determine what innovation means to Angus Australia?

Innovation Essentials

- 1. Do you have a written business strategy?
- 2. Do you have documented business KPIs?
- 3. Do you have a written innovation strategy?
- 4. What keeps the CEO of Angus Australia awake at night?
- 5. What does "Innovation" mean to Angus Australia?
- 6. What outcomes do we want from the innovation program?
- 7. What areas of innovation are you most interested in? Are they the right ones?
 - Business innovation
 - Technology innovation
 - Process innovation
 - Strategy innovation
 - Organisational innovation
 - Marketing innovation
 - Product innovation
- 8. How will we measure the health and success along the way?
- 9. What "innovative" work are you doing with your members?
- 10. What are some of key challenges preventing your organization from being more innovative?
 - o Lack of funds
 - Limited time to focus on innovation
 - Limited in-house technical resources
 - Difficulty in finding right partners
 - o Limited capability to manage innovation risk
 - Difficulty in finding suitable technology
 - Limited in-house capacity to manage innovation uptake
 - Trust and confidentiality issues
 - o Difficulty dealing with government bureaucracy
 - o Lack of confidence in 'technology not invented here"

What ifs

- 1. If money wasn't a constraint, what would you do?
- 2. If you had to build a new breed society model, what might it look like?

Members

- 1. How does Angus Australia segment its members?
- 2. Who is the "ideal" Angus Australia member?
- 3. Why should members engage what is the compelling reason we give them as to why innovation is important from their perspective.
- 4. What message on innovation will you send to members? How, how often and to whom?

Going forward

- 1. How do we best structure the process going forward to achieve objectives? Must ensure that whatever we do is above and beyond the 'core business' of a breed society.
- 2. What do we need to do to make the structure a reality?
- 3. What are the key areas of focus? Are they based on current business strategy, current management units or other?

Other questions (to be determined if relevant or not)

- 1. Who are the right people to have involved in innovation and in what capacity?
- 2. What series of initiatives will bring us momentum (the flywheel effect)?
- 3. How will we recognise and reward people?
- 4. What are the enabling management and leadership behaviours and how will we drive their development and use?
- 5. Do we need any "training" to build capability? And if yes, what training and who will we train?
- 6. How do we know a good idea when we see/hear one? How will we evaluate opportunities?
- 7. What do we need to make a decision on an opportunity? What will we require of people to progress an idea/opportunity? What are their options for pathways to develop and implement their idea? What is the process Stimulate to Implement?
- 8. Do you have any resources dedicated to innovation? If so what is their position?
- 9. What is the approximate budget you have spent on innovation in the last 2 years (and in what areas?)
- 10. How do you capture ideas from inside your organization?
- 11. How do you capture ideas from outside your organization?
- 12. Do you currently measure or benchmark your culture?
- 13. Do you currently measure the impact innovation has on your organization and if so what is it?
- 14. Who are you current key contacts within MLA?
- 15. Do your senior management position descriptions contain deliverables relating to innovation for each person?
- 16. What process do you go through to determine where to invest?
- 17. Do you feel you lack information to adequately decide on which initiatives to invest in?
- 18. Have past investments have returned their expected benefit to the company. Do you know?
- 19. Are some initiatives not undertaken due to lack of available resources (people and money)?

Appendix C - Angus Australia Innovation Implementation Plan 2010

Introduction

The Angus Australia and MLA Collaborative Innovation Strategy program (CISp) agreement was approved for three years commencing in March 2010. Carel Teseling, Breed Development & Information Manager was appointed Innovation Manager at this time.

The innovation strategy will be integrated into the company's overall business strategy and will include measurable performance indicators which identify the contribution of innovation to the bottom line and achievement of key business objectives. Ultimately the innovation strategy will contribute to the enterprises long-term profitability, competitiveness and sustainability.

It is expected that Angus Australia will gain the following:

- Develop and implement a comprehensive innovation strategy that is integrated into the company's overall business strategy
- Develop measurable performance indicators which identify the contribution of innovation to the bottom line and achievement of key business objectives
- Long term contribution to the long-term profitability, competitiveness and sustainability of Angus Australia and its members
- Enhancing the innovation capability of Angus Australia and its members
- Streamline access, on a regular basis, to MLA's knowledge base and people

Benefit expected for MLA and the Australian red meat industry include:

- Flow on effects that will enhance the innovation capability of other breed societies and their members, particularly those in southern Australia
- Better understanding of the critical issues impacting the profitability and sustainability of Breed Societies which can be extended more broadly to other Breed Societies and producers within the industry
- Development of new processes and systems or adoption of new technologies and new scientific knowledge which may be commercialised for the benefit of the broader industry

The Innovation Process

Below is the timeline of activities that will be undertaken by the first Go/No Go point due on 1 August 2010:

| Innovation Manager Appointed | Yes |
|---|-------------------------------------|
| Position Description updated | Complete |
| Deliverables agreed | Underway |
| Angus Australia | |
| Who is Angus Australia? | Information |
| What projects have been done with MLA? | obtained |
| Mapping of the Strategic Planning and Annual | Information |
| Business Planning processes | obtained |
| Mapped interaction between major players in the | Mapped |
| technical support, extension and R&D areas or of | |
| the genetic pipeline | Mapped |
| What does Innovation mean to Angus Australia? What are | Discussion |
| the desired outcomes from the CISp? | commenced |
| Development of the Draft Innovation Strategy | |
| Business as usual vs. doing it differently | Underway due 30 |
| Draft initiatives documented | Jun |

| Draft measures of success | Underway due 30 |
|---|---|
| Draft structure to achieve outcomes | Jun |
| Who are the right people to be involved & in what capacity? | Underway due 30 Jun |
| Draft Innovation prepared | Underway due 30 |
| Paper for EC meeting | Jun |
| | Underway due 30 |
| | Jun |
| | Not started |
| | Not started |
| Development of the Innovation Strategy following the Go/No | |
| Go point | |
| How will we measure the health of the system along the way? | Not started |
| How will we recognise and reward people? | Not started |
| What are the enabling leadership and management behaviours that will drive implementation and uptake? | Not started |
| What series of initiatives will build us momentum? | Not started |
| Do we need to do any capability building or training? If so, what training and who will we train? | Not started |
| How will we evaluate opportunities? What information do we need to evaluate ideas? | Not started |

About Angus Australia

Angus Australia is Australia's largest breed society and is in a unique position of spanning the entire beef supply chain through:

- 1200 seedstock producer members
- 1400 commercial producer members
- The Certified Australian Angus Beef brand with licenses covering all sectors of the supply chain including:
 - o 320 designated suppliers (commercial producers)
 - o Feedlots
 - Processors
 - $\circ \quad \text{Wholesalers}$
 - \circ Retailers
 - Food Service outlets
- Export marketing initiatives for export certified breeding livestock and genetics.

Angus Australia is based in Armidale, NSW.

Corporate Mission: to increase member profitability

<u>Corporate Vision</u>: to facilitate the production of world leading Angus genetics and branded beef.



Angus Australia Projects

Below is a list of current, completed and future projects between MLA and Angus Australia:

- Current projects
 - PSH.0418 Collaborative Innovation Strategy
 - o PSH.0435 Innovation Manager's Professional Development
 - o PSH.0540 Angus Graduate Jo Milward
- Completed projects
 - PSH.0246 Angus Fawn Calf Syndrome
 - PSH.0478 Angus Aust Fully automated system DNA test results
 - PSH.0538 Angus Takestock Extension
- Projects under negotiation
 - o PSH.0436 Whole of Company Change Management
 - PSH.0528 Angus Australia Progeny Test & Information Nucleus

Current State of Play

Angus Australia (AA) annually conducts a review process with its members and Board. At the latest Strategic Review process in October 2009 members were asked to rate the importance of various current activities of AA, list important future threats and opportunities in the beef industry and suggest actions and initiatives by AA to respond to these threats and opportunities.

Current activities (in order of priority)

- Administer & regulate registration of Angus cattle;
- maintain Angus website & database search facilities;
- Run Branded product development (e.g. CAAB);
- Angus GROUP BREEDPLAN;
- Youth development;

- Domestic marketing of Angus cattle;
- Promoting & facilitating involvement of Angus in major research & development programs;
- Provide specialist breeding extension & education services;
- Provide breeding & genetics advice to members;
- Provide marketing opportunities for commercial members;
- Oversee exports of Australian Angus cattle & genetics.

Future threats and opportunities (in order of significance)

| Threa | <u>ats</u> |
|---|--|
| Climate change/carbon tax/env perceptions | Competition from other breeds inc black composites |
| DNA technologies | overemphasis on EBVs and \$Index values |
| Genetic defects Decreasing genetic diversity | |
| Decreased commercial profitability of beef production Lack of breeder integrity | |
| | |
| <u>Opportu</u> | nities |
| Increasing consumer preference for high quality re | d meat Exploit quality image of Angus |
| Research based marketing & promotion of Angus benefi | ts & features Branded products inc CAAB |
| Opportunity to increase genetic base & achieve genetic | improvement Greater linkage with TAFE unis MLA |

Northern market penetration

Break down for Genetics and Other

| | Genetics |
|---|--|
| Threats | Opportunities |
| Multinational control of DNA technologies | Better breeding tools (DNA, EBVs) |
| Reduced genetic diversity within Angus | Multi-breed evaluation (crossbreeding, composites) |
| Recessive genetic conditions | MLA (co)investment opportunities in genetics |
| Disillusionment in EBVs & \$Indexes | |
| | |

| | Other |
|---|---|
| Threats | Opportunities |
| Low financial reserves in the industry | Greater diversification of services |
| Limited financial reserves of Angus Australia | Increased focus on innovation |
| Financial stress of global seedsotck sectors | Co-funding opportunities |
| Demise of applied R,D&E capacity | Capture corporate interest in beef industry |
| | |

Future action and initiatives (the most supported)

- Reconcile/validate DNA markers & integrate into EBVs;
- Increased education/ promotion/ marketing activities;
- Lobby government regarding net carbon position of beef;
- Increase support of Angus youth;
- Develop EBVs for structure & temperament;
- CAAB processor for WA;
- Independent advice on the future genetic products;
- Random parent testing;
- Revise & improve inventory/rego/breedplan system.

AA's core business: AA's services have grown from

| Herd book & pedigree | to growth, fertility and carcase EBVs |
|-----------------------|---|
| Paper systems | to computer and web based systems |
| Seed stock | to commercial and multi-breed registers |
| Physical measurements | to DNA testing and parent verification |

Youth development

Cattle breeding ...to a whole of supply chain focus with \$Indices & CAAB Keeping records ...to extension taking power of new technology to members AA has grown from a small registration service

...to a genetics service provider with a whole of supply chain perspective with skills in genetics, computing, extension & marketing

The 'Genetic Space'

Following a query from MLA Executive. AA have clarified the roles of Southern Beef Technology Services (SBTS) vs Angus Australia's Innovation Manager vs Angus Australia's Graduate.



What does "innovation" mean to Angus Australia?

- Innovation involves the process from the conception of an idea through to the adoption or application of a system or process to generate more value for Angus Australia and/or its members.
- New or old ideas could constitute innovation but is not regarded as innovation unless it adds value and has been implemented.
- The challenge is to develop ideas to a point where it can be implemented or adopted i.e. change of IT system or uptake from producers/members.

Why does Angus Australia want to innovate?

- Without innovation in the beef seedstock sector it will soon become defunct and as a consequence the whole beef industry will suffer.
- Innovation at the breed society level will deliver measurable outcomes in terms
 of genetic improvement in industry. Unless commercialised through ABRI or the
 breed societies there is no genetic improvement, no matter how smart the
 software.

- AA is a major centrepiece of action; it has links up and down the production chain and straight to the commercial industry and key influencers of industry.
- AA is ideally positioned to work with its members to facilitate innovation in the broader beef industry.

Key challenges preventing Angus Australia to be more innovative?

- AA has limited financial and people resources.
- Thinking of realms of influence and how AA can, through linkages, benefit all of industry.

Desired outcome from the CISp

- Access to MLA resources, other companies and greater range of ideas.
- Major area of focus for Angus Australia will be genetics, system development and expanding the influence of Angus bloodlines.
- By getting AA board to agree to the CISp process instils a culture of innovation in AA. Has been there largely in the past, but in the background. Otherwise, societies may become irrelevant. Shorthorn has just merged into ABRI. AA, Limousin, Charolais and Hereford are the only southern breed societies left with a standalone management structure.

How will innovation be linked to Strategic Plan and Annual Operating Plan?

Current strategic planning has seen innovation thinking incorporated into the draft Angus Australia Strategic Plan 2011-15.

- Draft 2011-15 Strategic Vision: Leadership in the delivery of innovative programs that enhance and promote the value of Angus cattle and Angus beef products
- Draft 2011-15 Strategic Mission: To increase the profitability of our members and their customers through the delivery of innovative programs that enhance and promote the value of Angus cattle and Angus beef

The Angus Australia Strategic plan is traditionally a 5 year plan but may in future become a two year plan in recognition of the need for more rapid strategy adjustment to cope with expected change in the beef industry.

During Angus Australia managers' meetings, to develop the next year's operating plan, special attention will be given to identify areas across the industry where Angus Australia and its members could be involved to drive innovation.

Development of the Innovation Strategy - Business as usual vs. doing it differently

Now we have Angus Australia's priorities and annual operating plans documented, the next step is to go through the question and challenge - where does innovation fit? What will be business as usual versus doing it differently? Initial discussions have been held and below are the first draft of key priority areas:

Member Services

| Objective | Business as Usual Initiatives | Doing it differently |
|----------------------------|--|--------------------------------------|
| Efficient & cost effective | To maintain proportion of animals with registration data submitted by electronic transfer, | Paperless office |
| registration service | Improve the accuracy of pedigree information through an effective and accurate DNA testing facility, | system |
| | Process registrations and transfers and maintain female inventory, | |
| | Process QA catalogues for members | |

| Objective | Business as Usual Initiatives | Doing it differently |
|------------------------------|--|--|
| Efficient & cost effective | Production of January 2010 Angus GROUP BREEDPLAN Sires Summary and Publish | Mate select (TGRM) |
| service for the provision of | EBVs on the Web | Electronic data |
| GROUP BREEDPLAN | Oversee AGBP Analyses and publication of EBVs on the web | capture |
| EBVS | Servicing BREEDPLAN enquiries and EBV diagnostics | |
| | Provide advice to members and their customers on the use of EBVs to assist in their customers on the use of EBVs to assist in their customers. | Graduate |
| | selection decisions | |
| | for gonatic product description | education & |
| | Eacilitate the development and use of tools to assist in designing entired mating strategies | activities for |
| | Pavalon strategies for the incorporation of DNA marker information into breading strategies | members & their |
| | (an GeneSTAR markling tenderness and efficiency markers) | customers |
| | Support industry DNA sample storage capability | Customers |
| Provide accurate genetic | Maintain the proportion of registered calves' with post hirth performance recorded through | Coat scores |
| description of seedstock | Angus GROUP BREEDPI AN to above 75% | Structural traits |
| for all traits of economic | Maintain the proportion of registered calves with birth weight records at over 75% | Northern |
| importance | Maintain the proportion of registered calves ultra-sound scanned for carcase traits at over | adaptability and |
| | 50% | management of Bos |
| | To increase the proportion of active cows with mature cow weight data recorded to over | Taurus |
| | 10% | |
| | Investigate feasibility of EBVs for cow longevity and/or stayability. | |
| | Revise recording of Days to Calving procedures. | |
| Facilitate the conduct of | Facilitate the conduct of relevant collaborative research and development to improve the | Coat scores |
| relevant collaborative | rate of genetic progress in seedstock and commercial herds | |
| research & development | | |
| to improve the rate of | | |
| genetic progress in seed- | | |
| stock & commercial herds | | |
| Minimise the spread and | Investigate genetic conditions Analysis and arbitraria of the status of animals for the different practice and it is an | Gene Prob project |
| Impact of genetic | Analysis and publication of the status of animals for the different genetic conditions Manifest resultance of Manageridaeia in Annual | (curiy cait, red |
| Conditions on the total | Monitor prevalence of Mannosidosis in Angus Develop precedures for the reporting and headling of genetic condition reports by Angua | COIOUR etc) |
| Angus population | Australia | Fawn can syndrome |
| Provision of material for an | Enhance AA website design and technical content | Graduate |
| industry leading website | Enhance website database search facilities | Innovative tools for |
| as a source of high quality | Prepare and post BREEDPLAN analysis information and results on the AA Website | web-based delivery |
| technical info on breeding | Publish articles of interest to breeders on AA Website | of extension & edu- |
| & production of cattle | | cation materials |

Breed Development

Actions

- Further expand key focus areas
 - Why are we prioritising these areas?
 - Which areas will deliver innovation as opposed to business as usual?
 - What is the problem? What is the proposed solution/project? (summary of each area)? What areas/projects will MLA be involved in?
 - Where does AA want to be in 12 months? What is timeline for each area?
 - Are there new things AA is trying to do?
 - Do abovementioned projects achieve the red box i.e. innovation goals?
- What is the measurable benefit of doing this?
 - What will be the key measures of success for each focus area?
 - What are the baseline measures?
- How do we best structure to achieve outcomes?
 - Value to AA, value to AA members, value to others breed societies, value to industry
 - If can be delivered in the short term what will be the innovative education & extension support activities to deliver solution to members?

Who are the right people to be involved & in what capacity?

Two members of Angus Australia management are involved in the development of the innovation strategy, CEO Peter Parnell and Innovation Manager Carel Teseling. Both members have full authority to act on behalf of the Angus Australia Board and Management Team in the development process.

Input will also be sought, when required, from the following groups:

- Angus Australia Board (10 members)
- Angus Australia Steering Committees (6 steering committees)
- Angus Australia State Committees (6 state committees)
- Angus Australia Regional Groups (18 regional groups)
- Angus Australia members (approx. 2,600 members)

As the strategy develops, it is likely that 'innovative' Angus Australia members will be included in the process whereby AA management works directly with members to solve problems or determine innovative methods to equip members with tools and the necessary knowledge to achieve continuous improvement. While this area has not been discussed in detail these members will need to be respected breeders, have large herds, cover a geographic spread, be tech savvy and early adopters of technology.

Actions following development of draft Innovation Strategy:

- How will we measure the health of the system along the way?
- What are the enabling leadership and management behaviours that will drive implementation and uptake?
- What series of initiatives will build us momentum?
- Do we need to do any capability building or training? If so, what training and who will we train?
- How will we recognise and reward people?



Appendix D – Process for developing the Angus Australia Strategic Plan 2011-15

