



Final report

NB2-ILSC-AHA Partnership to grow indigenous capacity Final Report

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Abstract

This following is a final report on a project as part of the MLA Northern Breeding Business: NB2 programme. The partnership between Meat and Livestock Australia (MLA), the Indigenous Land and Sea Corporation (ILSC) and Animal Health Australia (AHA) aims to work within the NB2 programme to increase capacity among indigenous cattle owners and managers and to improve productivity on indigenous owned land while also developing immersive technology which can be utilised across the Australian cattle industry.

The Indigenous NB2 group formed during the first half of 2021 and has progressed throughout 2021 and 2022. The group is currently working with 8 indigenous groups, 7 properties with an approximate total of 75,000 head, 35,000 breeders.

The pilot component of the project has been successful with the formation and ongoing operation of an indigenous peer to peer learning group. Group members have participated in a number of training processes and industry events, have initiated data collection and analysis and have participated in the development of immersive technology learning tools.

The project is providing benefits to the Australian cattle Industry through increasing the capacity of indigenous land and livestock managers, improving productivity on indigenous owned land and developing innovative immersive technology tools to supporting learning and extension for indigenous and non-indigenous cattlemen throughout Australia.

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1. Milestone description

1.1 Milestone Eight

1.1.1 Final Reporting

- 8.1 Final report/s submitted (one confidential, one deidentified for public release) to MLA for review and approval, covering project objectives.
- 8.2 Producer data de-identified, collated, and security/ storage declaration submitted.
- 8.3 Two case studies submitted for use by MLA comms.

2. Project objectives

2.1 Overall Project Objectives

2.1.1 Project Objective Details

- Establish and maintain indigenous peer to peer producer learning groups.
- Demonstrate improved productivity, sustainability and profitability of indigenous enterprises compared to baseline relative to NB2 targets: a 5% increase in weaning rate; a 1% decrease in herd mortality rate and a 10 kg increase in sale weight of cattle at the same age.
- Provide evidence of measurable increased adoption of R&D or equivalent pathway of intent for northern breeder herds targeting ILSC affiliated properties using MER adoption framework.
- Raise awareness of biosecurity and animal welfare issues.
- Develop immersive technology applications.

The formation of this partnership and conduct of the project delivers significant benefits to the industry as it facilitates co-operation between the industry body (MLA), an indigenous organisation working with indigenous land and livestock owning entities (ILSC) and the key Australia wide biosecurity organisation (AHA).

3. Success in meeting the milestone

3.1 Milestone Achievement

3.1.1 Milestone Details

Project Review

The pilot component of the project has been successful with the formation and ongoing operation of an indigenous peer to peer learning group. Group members have participated in a number of training processes and industry events, have initiated data collection and analysis and have participated in the development of immersive technology learning tools. The project has already changed the attitude of the participants to data collection and management and to training.

Group activities are focussed around a series of residential workshops, generally on property, supported by specialist input while also allowing time for interaction among group members. Group

members have attended four residential workshops, one training workshop and a field day. Group members attended the NB2 Draft in Brisbane in November 2022.

Table 1 WORKSHOP DETAILS

Workshop Details	Location	Attendance	Enterprises represented
Group Workshop 1	Mt Isa	20 ¹	5
Group Workshop 2	Ingham	27	8
Group Workshop 3	Chillagoe	24	4
Group Workshop 4	Dingo	17 ²	4
Training Workshop	Chillagoe	15	4
NB2 Workshop	Brisbane	6	2
Field Day	Darling Downs	6	2
Mentoring Meetings	Mt Isa	7	1
	Normanton	4	1
	Chillagoe	7	1
	Chillagoe	4	1

Data collection and analysis is being used by the group to develop targeted intervention strategies and to form the basis of strategic level discussions, for example presentation of benchmark comparative data for reproductive rates and weaner growth rates have led to discussions and specialist input on supplementation and selling strategies. Bulimba and Croc/Welcome are currently in the process of reviewing their turnoff strategies.

Other group activities facilitated and supported by NB2 activities include:

- Calton Hills has initiated an infrastructure development plan aimed at improving herd and livestock management and financial return. Financial benchmark data demonstrates improvement.
- Badjabulla are in the process of developing a comprehensive planning process for the group and the property. Attendance at three workshops and peer to peer learning have provided board members and staff with information, ideas and the beginnings of strategy development to enable the group to expand their operations on a property with considerable potential for further development.
- Bulimba and the Mithaka contract team have developed a staff exchange initiative which will be implemented during 2024.

Assessment of achieving target of 4% improvement in beef reproduction

Data collected on Bulimba and Croc/Welcome has been analysed and benchmarked. These enterprises are developing and implementing turnoff strategies aimed at increasing reproductive and turnoff rates and consequently financial return.

Woorabinda and Calton Hills have collected data and early stage analysis has been utilised to develop strategies aimed at improving reproductive and death rates, turnoff weights and financial return. The four enterprises above are aiming to achieve at least the target of 4% improvement in these productivity benchmarks and subsequent improvement in financial return.

¹ Numbers were lower than expected due to COVID-19 restrictions/concerns.

² Numbers were down at this workshop due to flooding events that occurred just prior to the workshop occurring.

Table 2 DE-IDENTIFIED BENCHMARKING DATA

CATEGORY		2019	2020	2021	3 YR AVE
Beef Herd Gross Profit/AE	A	205.36	184.75	91.94	157.43
	B	152.23	181.51	223.22	186.02
	NPC Ave †	150.75	257.28	343.26	244.23
	NPC Top 25% †	290.82	339.53	468.43	357.19
Herd Performance Indicators					
Herd Productivity kg beef/AE	A	109	65	33	66
	B	77	71	64	70
	NPC Ave †	71	83	88	80
	NPC Top 25% †	107	105	114	105
Reproductive Rate (Percent)	A	68	66	45	60
	B	56	68	59	61
	C				40
	NPC Ave †	65	67	70	67
	NPC Top 25% †	64	73	72	67
Mortality Rate (Percent)	A	0.4	6.7	8.0	5.3
	B	2.1	5.9	3.9	4.0
	NPC Ave †	10.1	5.1	4.6	6.6
	NPC Top 25% †	4.6	3.9	3.5	4.3
Labour efficiency AE's/FTE	A	978	1140	1191	1103
	B	760	805	788	785
	C		780	734	757
	NPC Ave†	1536	1674	1628	1609
	NPC Top 25% †	1394	1667	1427	1481

† P.PSH. 1187 Northern pastoral company (NPC) benchmarking project

Increased adoption of R&D or Equivalent

Strong relationships have been established with key NB2 specialist trainers and Pillar leaders. Group members have attended a number of specialist presentations and have interacted with the specialist presenters. Indigenous participants have come to understand the benefits of R&D and possibilities of implementation of the results of R&D.

Project participants, with specialist support have developed a framework for the construction of pathways for training and employment in the Australian cattle industry.

With the support of University of Queensland (UQ) Skills and representatives from corporate and large family businesses, educational pathways will be developed and implemented through the future workshop processes. The intention will be to facilitate the achievement of units of competency which will build towards achievement of Cert II, Cert III and Cert IV in Agriculture and will identify pathways to higher education such as Diploma or Degree level where applicable. This training will be accompanied by development of employment pathways so that employment opportunities are identified in corporate and large family enterprises as well as indigenous enterprises. At least twelve to fifteen individuals will have the opportunity to participate in these training opportunities.

Representatives of corporate and large family-based agriculture are committed to working with the project to develop employment pathways within the Australian cattle industry. Representatives from these groups will form an advisory group which will work with project management, participants, elders and UQ Skills.

Biosecurity

Attendance by AHA personnel at three out of the four group workshops with presentations and facilitated discussion has contributed to improved awareness and understanding of biosecurity and animal welfare issues among project participants. This was particularly relevant as the emergence of foot and mouth disease (FMD) and lumpy skin disease (LSD) in Indonesia occurred during the course of this project. Participants at the two 2022 workshops received information on the signs of these two diseases, and what to do in the event they suspect an emergency animal disease. As LSD is more likely to enter Australia through northern Australia, it is vital that staff on these properties are aware of what to look for.

Immersive Technology

The project has resulted in the development, demonstration and group use of two immersive technology tools, one for post morteming cattle and the other for biosecurity training. This involved collaboration between Think Digital and AHA, utilising feedback from participants of the NB2 programme.

The 'Post Mortem' tool is web-based and uses 360 degree filming, as well as traditional video of a necropsy being performed on an animal, with links also provided to additional information. This will enable managers and staff to work through this tool in preparation for doing a necropsy on farm, especially when a veterinarian may not be able to visit the property due to distance and time constraints to get there. Producers using the tool will learn basic techniques and what to look for during the procedure.

The '[Farm Tour' biosecurity training](#) tool is also web-based. It utilises drone footage of one of the participating properties (Bulimba), as well as video of indigenous staff talking about biosecurity activities they undertake on the property. This provides an immersive, peer to peer style awareness tool. Links to additional sources of information on biosecurity are also available in the tool. Areas covered by the tool include:

- Introducing new animals
- People, vehicles and equipment
- Managing pests and weeds
- Managing stockfeed
- Monitoring water
- Staff training

It is possible that some additional topics could be added to this tool, as more people use the tool, or areas not covered are identified.

Discussions have been facilitated on future directions and explored possibilities for the use of immersive technology in biosecurity and animal welfare training, general enterprise management, training and employment and storytelling.

4. Overall progress of the project

4.1 Project Progress

4.1.1 Overall Project Progress

The pilot component of the project has been successful with the formation and ongoing operation of an indigenous peer to peer learning group. Group members have participated in a number of training processes and industry events, have initiated data collection and analysis and have participated in the development of immersive technology learning tools. Biosecurity and animal welfare issues have been described and discussed. Group members have developed excellent relationships within the group and with project personnel. The project has already changed the attitude of the participants to data collection and management and to training and the opportunities within the cattle industry enabled by education.

The group is established and is functioning well. Foundational training has been conducted in the three key areas of Feedbase, Herd Productivity and Financial management. Data collection and analysis has commenced and early results of analysis of this data has been used to facilitate discussion and group strategic and management planning.

Immersive technology development has resulted in the generation of tools for post mortem and biosecurity training. Discussions have been facilitated on future directions for the use of immersive technology in biosecurity training, general enterprise management, training and employment and storytelling.

An emphasis of the group has been identification of means of retaining young indigenous staff within the industry. Group discussions and the input of industry leaders and the UQ Skills department have identified a range of strategic approaches to achieve this aim, including the development of educational pathways, staff exchange and employment of indigenous cattlemen in the broader cattle industry.

Data Collection and Analysis

Data collection and analysis is proceeding on four properties. Data from this analysis is used in workshops to focus the development of intervention and management strategies and has formed the basis of strategic level changes in management on a number of the properties as detailed below.

Case Study 1

Analysis

Benchmarking data analysis indicates that livestock productivity (reproductive rate and death rate) is at the upper end of the comparative group while gross profit/AE is below average. The growth rate of young cattle is low in comparison to benchmarks and consequently turnoff weights of weaners are low or the young cattle need to be held for another wet season to reach target selling weights. This is reflected in a low benchmark for kg beef turned off per AE. These factors impact on profitability.

The bench mark of AEs/Full Time Employee is low, reflecting an approach to employment and profitability in keeping with the aims and aspirations of the owners of the property.

Strategy Development

As the management structure for this case study is currently in a state of change strategic planning has been a focus of the owners and management team including the incoming managers. Benchmarking data has provided a useful metric to compare the financial and productivity performance of the business with industry standards. Gross profit/AE and kg beef/AE are key benchmarks which indicate financial and productivity performance and in the case of the case study business are capable of improving to industry standards.

Discussion at the workshops, during mentoring meetings and discussions and as part of an ongoing ILSC management analysis process have covered a range of strategies to address the low profitability of the enterprise. These strategies have included the following –

- Change the turnoff policy to turnoff all sale weaners straight off their mothers and operate the property purely as a breeding property
- Integrate Bulimba with a fattening property or a number of fattening properties, so that Bulimba is operated as a breeding enterprise solely but that the profitability is measured over the aggregation of properties
- Purchase a fattening property and operate the breeding and fattening properties together
- Improve the frontage country with introduced pastures and more fencing and aim to improve growth rates of young cattle
- Analysis of the supplement strategy to ensure target animals are receiving cost effective supplementation

Case Study 2

Analysis

Case study 2 is in a recovery phase, recovering from severe drought and from a period of unstable management. Data on cattle numbers and productivity has been unreliable until 2022. It is understood a considerable proportion of the cattle on the property were unbranded and mustering costs were high because of poor infrastructure.

New management, strong board support, improvements in infrastructure, control of feral cattle, favourable cattle prices and a focus on return to profitability have resulted in a recovery of cattle numbers and profitability. However, preliminary analysis and benchmarking comparison indicate that reproductive rates, growth rates and profitability are all below industry benchmarks.

Labour use efficiency benchmarked as AE's/FTE is below industry benchmarks.

Strategy Development

As a result of discussions with board members, station management and NB2 mentors, and group discussions in the NB2 workshops a focus on infrastructure development and improvements in livestock management and control has been developed. A programme of fencing, yard rebuilding and water improvement has been developed by Calton Hills management. This will reduce mustering, handling and general labour costs and will also enable improved stock control, effective weaning, control of feral bulls and management of breeders.

The aim is to lift reproductive rates to 60%, death rates to reduce to 5% and kg beef/AE to 75. Achievement of improvement to these benchmarks will in turn improve Gross Profit/AE. Attention

needs to made to AE's/FTE with an understanding of the key aim of provision of opportunities for employment and training.

Case study 3

Analysis

Benchmarking data analysis indicates that livestock productivity (reproductive rate and death rate) is consistently at the upper end of the comparative group while gross profit/AE is below average.

The growth rate of young cattle is low in comparison to benchmarks and consequently turnoff weights of weaners are low or the young cattle need to be held for another wet season to reach target selling weights. The benchmark of kg beef turned off per AE is below average. Industry is currently aiming to average 100 kg beef turned off per AE, so there is room for improvement across the entire industry. These factors impact on profitability.

The bench mark of AEs/Full Time Employee is low, reflecting an approach to employment and profitability in keeping with ILSC policy and community aims.

Strategy Development

Case study 3 management structure is currently in a state of change and strategic planning has been a focus for ILSC. Benchmarking data has provided a useful metric to compare the financial and productivity performance of the business with industry standards.

Discussion at the workshops, during mentoring meetings and discussions and as part of an ongoing ILSC management analysis process have covered a range of strategies to address the low profitability of the enterprise. These strategies have included the following –

- Change the turnoff policy to turnoff all weaners straight off their mothers and operate the property purely as a breeding property;
- Integrate the business with a fattening property or a number of fattening properties, so that the case study business is operated solely as a breeding enterprise, while ensuring that the profitability is measured over the aggregation of properties;
- Purchase a fattening property;
- Improve the better country with introduced pastures and more fencing and aim to improve growth rates of young cattle.

5. Conclusions/recommendations

5.1 Conclusions and Recommendations

Conclusions

The opportunity to participate in industry lead activities is highly valued, group members are appreciative of the opportunities offered by engagement with the NB2 project and are committed to continuing with the NB2 process. The project has the potential to reach more indigenous cattle producers and to make significant differences to the manner in which indigenous cattlemen, community groups and cattle enterprises engage with the broader industry.

The potential exists to expand the group in northern and western Queensland as there are a number of indigenous owned properties which would benefit from engagement with this group. Current

group members are happy to expand the group and contact with other potential members has demonstrated considerable interest.

There is also potential to establish another similar group in the Kimberley area of WA. There are significant indigenous cattle holdings and enterprises in the Kimberley. Early investigation and discussion have identified a number of interested organisations.

Benefits to the broader Australian cattle industry will include improved efficiency of operation, improved productivity across the industry, increased numbers of cattle across northern Australia and increased indigenous engagement in cattle operations, employment and land and environmental management. An additional benefit will be increased biosecurity awareness of staff on these properties.

Challenges

This project is an innovative initiative and naturally has presented a range of challenges in addition to COVID-19 and severe weather events. Following are details of the primary challenges identified to date and strategies to address these challenges.

Challenge	Strategy
Ensuring commitment to the project and attendance at workshops.	Build strong group cohesion, work in the direction decided by the group, ensure activities during the workshops are relevant and interesting
Enabling engagement of indigenous participants with industry bodies, research organisations and specialist providers.	Ensure opportunities are provided for project participants to interact with representatives of industry
Enabling integration of indigenous and non-indigenous NB2 project participants.	Attendance at the NB2 muster provided excellent opportunities for integration. Members of other groups have approached the indigenous group proposing integrated activities – follow up and implement these suggestions
Sourcing accurate data.	Present benchmarking results and conduct discussions utilising data already collected with the aim of demonstrating the value of collection and analysis of relevant data

Recommendations

Project Future

The results of the Indigenous component have been highly encouraging in terms of engagement and participation across a large part of North Queensland. Useful data collection and analysis has been initiated, NB2 Foundation training is in progress and there has been significant interest in further training and education from all participants. The development and use of immersive technology has demonstrated excellent potential and generated considerable interest within the group. These results and feedback from participants strongly support a continuation of the Indigenous component of the project and feedback from further afield builds a case for expansion of the project more widely throughout Qld and into WA and the NT.

The following is suggested as a base for development of a proposal to continue the project.

- Continue the partnership of MLA, ILSC and AHA
- Continue with the current programme design
 - Residential workshops – 2 per year
 - Training workshops – at least one each year, possibly more
 - Mentoring – property visits, on property discussions with two or three properties from each group each year - continue to work with Max Gorringer as mentor
 - Data collection and analysis – herd performance, financial analysis and feed budgeting, benchmarking – discuss the results of this analysis at workshops
 - Training/education – Edge workshops, specialist presentations
 - Education and career pathways - continue to work with UQ Skills and Corporate and large family representatives to develop training and skills recognition programmes and integrate this with employment opportunities
 - Staff exchange
 - Facilitation of indigenous group activities
 - Joint marketing
 - Examination of governance options
 - Biosecurity and animal welfare awareness
 - Continue to work with Think Digital, developing and utilising immersive technology and consider other innovative tools in the following areas:
 - Disease identification
 - Livestock health surveillance
 - Skills development including practical communication, stock handling and practical skills
 - Educational and career pathways
 - On line learning
 - Storytelling
- Expansion within Qld – Smaller groups such as Normanby, Doomadgee, Kowanyama, Mt Tabor, Urannah
- Expansion to WA (Kimberley) and NT
- Train and mentor indigenous facilitators
- Engagement with non-indigenous groups and activities, participation in broader industry training and extension activities

2023 & 2024 RECOMMENDATIONS

1. Continue the project as it is running in Queensland and expand within northern and western Queensland.
2. Expansion to WA (Kimberley). Early investigation and discussion has identified a number of organisations that are interested in the NB2 concept and operation.
3. Train and mentor indigenous facilitators.
4. Engagement with non-indigenous groups and activities, e.g. the NB2 Draft, Beef Up Forums, Field Days and integrated group activities.