



# Final report

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## Chair of the Northern Breeding Business (NB2) Management Committee

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## **Abstract**

The NB2 strategic partnership is addressing three key issues that threaten the long-term viability and sustainability of the northern beef industry, 1) the low level of adoption of proven management practices and technologies, 2) the level of calf wastage in northern breeding herds, and 3) the low level of profitability of many northern beef businesses. Through its three R&D pillars of Herd, Feedbase and Sustainability, supported by an overarching Pathway to Practice of integrated extension and adoption activities, NB2 will by 2027, deliver an estimated \$20M in net benefits per annum to 250 northern beef businesses through increased production of 10M kg live weight of sale cattle, while operating at a level of production and profit that is sustainable in the long-term. This will be achieved by adopting proven management practices and new technologies, and by using objective data to inform business decisions. Seven producer groups have been established to date (≈51 beef business managing >12M hectares of northern rangeland and >400,000 breeders). Support staff, resources and training have been provided by the program, with producers collecting specific beef business data through 2022/23.

## Executive summary

### Background

The Northern Breeding Business (NB2) RDE&A Program was initiated by NABRC and developed by MLA to address a number of key issues that impact on, threaten or limit the potential of the northern beef industry. There are three main drivers of NB2:

1. The acknowledged relatively poor rate of uptake or adoption of R&D outcomes by the northern industry.
2. A need to address the identified issue of calf wastage in northern breeding herds.
3. Objective evidence that the majority of northern beef businesses are not economically sustainable in the long term.

Initiatives of the NB2 program have included:

- Embedding producers in the conception, delivery, management and governance of NB2 to deliver ownership of RDE&A to beef businesses in northern Australia,
- Adoption of a more business focused approach by northern beef businesses, based on the collection and analysis of objective data, leading to long-term practice change increases in productivity and profitability from the northern rangelands.
- Proposed target increases in productivity for individual beef businesses that engage with NB2 that, while relatively modest at an individual enterprise scale, are potentially transformational at a whole of industry scale.
- The identified issue of calf wastage in the northern beef industry, which was an initial driver of this NB2 initiative, being addressed through the development, promotion and implementation of breeding herd management systems that are custom designed for beef businesses in specific environments.
- A scale and duration of NB2 offers significant education, training, career development, mentoring and employment opportunities for people entering or already engaged in the northern beef industry.

### Objectives

The specific objective of NB2 is to yield \$20M in net benefits per annum to the northern beef industry through increased production of 10M kg live weight of sale cattle by 2027. This will be delivered through 250 northern beef producers, each with at least 800 AE of cattle engaging with NB2 and using objective data to inform business decisions. Within the proposed seven-year life of the program there is an intent to deliver a 5% increase in weaning rate; a 1% decrease in herd mortality rate; a 10 kg increase in sale weight of cattle at the same age; while operating at a level of production and profit that is socially, environmentally and economically responsible and sustainable in the long-term.

### Methodology

The core business of NB2 has been built around three pillars (**Herd**, **Feedbase** and **Sustainability**) supported by an integrated adoption and extension program (**Pathway to Practice**), which is actively engaging northern beef production units in the use of objective data to inform business decisions and provide a direct conduit from research and development outcomes to changes in business practice. The vehicle for achieving business practice change is through the recruitment of 250 collaborating beef producers, in groups of up to ten, that have agreed participate in the on-farm research, development, education, training and(or) adoption activities. These groups are being supported by beef producer group co-ordinators and by traditional agricultural department extension staff and (or) consultants as group facilitators.

The NB2 program is about identifying research needs and transforming R&D outcomes to business practice through trialling interventions, adapting management systems to particular production enterprises, training and mentoring producers, and assessing and demonstrating new technologies and management systems in the real-world of northern beef businesses - leading to business practice change.

The **Herd** pillar is focused on enhancing breeding herd performance through improved systems and interventions. The **Feedbase** pillar is focused on optimising feed production, supply and utilization for the breeding herd in order to achieve target performance levels in a cost-effective manner. The **Sustainability** pillar explores issues related to the production of beef in a manner that is socially, environmentally and economically responsible and is aligned to the existing Australian Beef Sustainability Framework.

The focus of the **Pathway to Practice** pillar is adoption and practice change, led by producers for producers, thereby maximising the opportunity for peer-to-peer communication as the primary method of creating, acquiring, testing and implementing innovations. While Pathway to Practice has a much smaller R&D component than the Herd, Feedbase and Sustainability pillars, it is about:

- identifying needs and transforming R&D outcomes to business practice through trialling interventions,
- adapting management systems to particular production enterprises,
- training and mentoring producers in good business principles, and
- assessing and demonstrating new technologies and management systems in the real-world of northern beef businesses leading to business practice change.

Pathway to Practice supports north Australian beef businesses to:

- Collect and analyse standard beef business records to establish baselines for achieving production, performance and financial outcomes that are sustainable in the long term,
- Promote and support awareness, development and adoption of business practice innovations,
- Set direction for, and engage in, on-property R&D as determined through needs within the program (R&D based on producer-identified priorities).

## Results/key findings

- The implementation of the NB2 program has proceeded in a timely manner in line with the L.NAB.1903: Northern Breeding Business: NB2 Strategic Partnership Development final report, in spite of the difficulties associated with the current Covid-19 pandemic.
- Seven NB2 producer groups have been established, engaging 51 northern beef business that manage 12+M hectares of rangelands and 400,000+ breeders.
- Facilitators and co-ordinators have been appointed for each of the producer groups and have completed a formal NB2 training program in small group dynamics and facilitation.
- Six of the seven producer groups have completed their foundation training in the Herd, Financial and Feedbase data templates that were developed for the NB2 program.
- The producer groups are populating the data templates with their specific beef business data through 2022.
- Four research projects that address Terms of Reference (ToR) relevant to the NB2 objectives have been implemented in 2021.

- A substantial NB2 communications program has been implemented which continues to keep all stakeholders in the program up-to-date with its activities. It's a living document and is being continuously reviewed and improved to ensure that it engages effectively with NB2's stakeholders.

## Benefits to industry

The NB2 strategic partnership promotes and facilitates:

- Increased and diverse investment in RDE&A for the benefit of the northern beef industry.
- Increased and integrated engagement in RDE&A by northern beef producers.
- Increases in productivity and profitability from northern rangeland systems that are socially, environmentally and economically responsible.
- Increased conversion of research and development output into industry/business outcomes.

## Recommendations

1. Consideration should be given to changing the name of the **NB2 Management Committee** to the **NB2 Advisory Committee**, a title which more accurately reflects the role that the Committee has played in the establishment and roll-out of the NB2 program.
2. Given the successful establishment of the current seven (7) NB2 producer groups the full implementation of the NB2 program out to 2027, as outlined in Fitzpatrick (2020), should be progressed.
3. NB2 is a large, complex and diverse program with the potential to have a significant positive impact on productivity, profitability and sustainability of the north Australian beef industry. Appropriate budget must be secured to enable the successful implementation of the full NB2 program.
4. The NB2 Communications Plan should be reviewed regularly to ensure that it reflects the most effective pathway to engage with producers.
5. The NB2 website is in urgent need of comprehensive updating to reflect the current state of development and implementation of the program.
6. With the proposed increase in the number of northern beef producers engaged with NB2 producer groups, there will be a need to identify and train additional producer group facilitators. Planning is urgently required to both identify and train potential facilitators to support this growth in the program.
7. Maintaining the engagement of producers who have expressed interest in NB2, but are not yet part of a group, is a challenge for the program. A strategy that is focussed on this issue needs to be developed.

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## 1. Background

The Northern Breeding Business (NB2) RDE&A Program was initiated by the North Australian Beef Research Council (NABRC) and developed by Meat and Livestock Australia (MLA) to address a number of key issues that impact on, threaten or limit the potential of the northern beef industry.

There were three main drivers for the development of NB2:

1. The acknowledged relatively poor rate of uptake or adoption of R&D outcomes by the northern industry.
2. As breeder efficiency has been repeatedly raised as an R&D priority by NABRC, there was a clear need to address the identified issues of breeder mortality and calf wastage in northern herds.
3. Objective evidence that the majority of northern beef businesses are not economically sustainable in the long term.

Initiatives of the NB2 program have included:

- Embedding producers in the conception, delivery, management and governance of NB2 to deliver ownership of RDE&A to beef businesses in northern Australia,
- Adoption of a more business focused approach by northern beef businesses, based on the collection and analysis of objective data, leading to long-term practice change increases in productivity and profitability from the northern rangelands.
- Proposed target increases in productivity for individual beef businesses that engage with NB2 which, while relatively modest at an individual enterprise scale, are potentially transformational at a whole of industry scale.
- The identified issues of breeder mortality and calf wastage in the northern beef industry, which were an initial driver of this NB2 initiative, being addressed through the development, promotion and implementation of breeding herd management systems that are custom designed for beef businesses in specific environments.
- A scale and duration of NB2 that offers significant education, training, career development, mentoring and employment opportunities for people entering or already engaged in the northern beef industry.

## 2. Objectives

The specific objective of NB2 is to yield \$20M in net benefits per annum to the northern beef industry through increased production of 10M kg live weight of sale cattle by 2027. This will be delivered through 250 northern beef businesses, each with at least 800 AE of cattle engaging with NB2 and using objective data to inform business decisions. Within the proposed seven-year life of the program there is an intent to deliver a 5% increase in weaning rate; a 1% decrease in herd mortality rate; a 10 kg increase in sale weight of cattle at the same age; while operating at a level of production and profit that is socially, environmentally and economically responsible and sustainable in the long-term.

## 3. Implementation

While the implementation of the NB2 program has largely followed what was proposed in the L.NAB.1903: Northern Breeding Business: NB2 Strategic Partnership Development final report (Fitzpatrick 2020), some timelines have been extended due to Covid-19 restrictions and contracting delays.

## 4. Structure

The NB2 strategic RDE&A partnership embeds north Australian beef businesses at the heart of its management, execution and delivery of outcomes (see Figure 1).

The core business of NB2 has been built around three pillars (**Herd**, **Feedbase** and **Sustainability**) supported by an integrated adoption and extension program (**Pathway to Practice**), which is actively engaging northern beef businesses in the use of objective data to inform business decisions and provide a direct conduit from research and development outcomes to changes in business practice. The vehicle for achieving business practice change is through the recruitment of 250 collaborating producers, in groups of up to ten, who have agreed participate in the on-farm research, development, education, training and(or) adoption activities. These producer groups are being supported by beef producer group co-ordinators and by traditional agricultural department extension staff and (or) consultants as group facilitators.

The NB2 program is about identifying research needs and transforming R&D outcomes to business practice through trialling interventions, adapting management systems to particular production enterprises, training and mentoring producers, and assessing and demonstrating new technologies and management systems in the real-world of northern beef businesses - leading to business practice change.

The **Herd** pillar is focused on enhancing breeding herd performance through improved systems and interventions. The **Feedbase** pillar is focused on optimising feed production, supply and utilization for the breeding herd in order to achieve target performance levels in a cost-effective manner. The **Sustainability** pillar explores issues related to the production of beef in a manner that is socially, environmentally and economically responsible and is aligned to the existing Australian Beef Sustainability Framework.

The focus of the **Pathway to Practice** pillar is adoption and practice change, led by producers for producers, thereby maximising the opportunity for peer-to-peer communication as the primary method of creating, acquiring, testing and implementing innovations. It follows a similar model successfully implemented in New Zealand (Patchett *et al.* 2020). Pathway to Practice is about:

- identifying needs and transforming R&D outcomes to business practice through trialling interventions,
- adapting management systems to particular production enterprises,
- training and mentoring producers in good business principles, and
- assessing and demonstrating new technologies and management systems in the real-world of northern beef businesses leading to business practice change.

Pathway to Practice is supporting north Australian beef businesses to:

- Collect and analyse custom beef business records to establish baselines for achieving production, performance and financial outcomes that are sustainable in the long term,
- Promote and support awareness, development and adoption of business practice innovations,
- Set direction for, and engage in, on-property R&D as determined through needs within the program (R&D based on producer-identified priorities).

The Pathway to Practice pillar provides a framework for the industry to become more astute in business decisions by collecting and analysing standardised beef business data to establish baselines for their own businesses. In order to establish baseline levels of performance at the start of the program and demonstrate the impacts on productivity and profitability from management interventions or technology adoption, collaborating business owners are required to implement and maintain a standard set of basic business monitoring practices.



North Australian beef businesses engaged with NB2, having identified their needs through detailed business analyses, will “pull” appropriate research and development outcomes from the Herd, Feedbase and Sustainability pillars (see Figure 2).

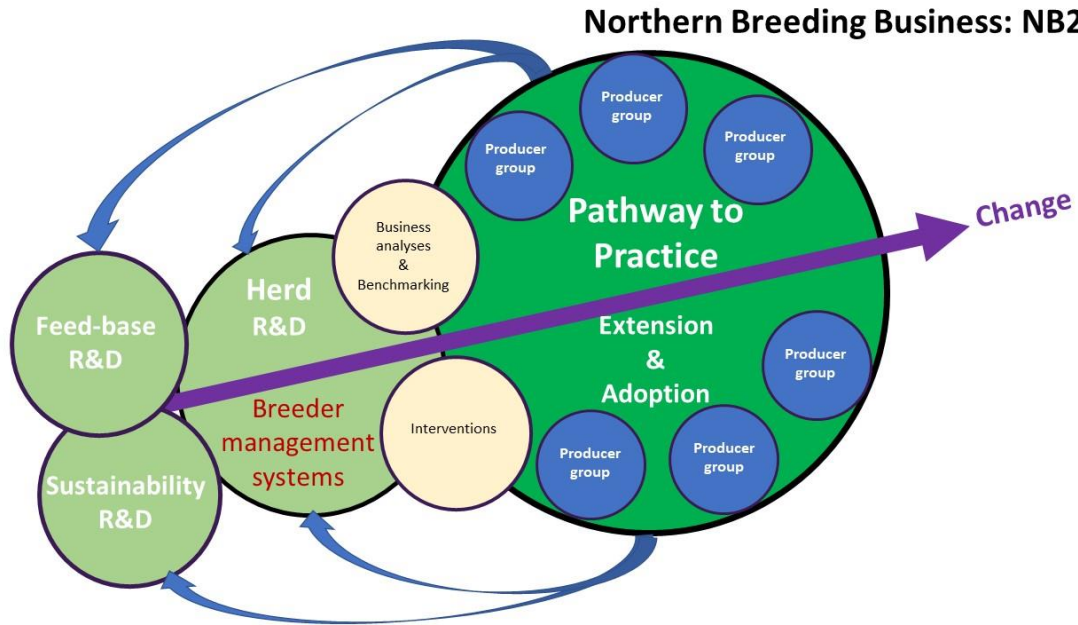


Figure 1. An illustration of the structure of NB2.

The Pathway to Practice pillar provides a framework for the industry to become more astute in business decisions by collecting and analysing standardised beef business data to establish baselines for their own businesses. In order to establish baseline levels of performance at the start of the program and demonstrate the impacts on productivity and profitability from management interventions or technology adoption, collaborating business owners are required to implement and maintain a standard set of basic business monitoring practices.

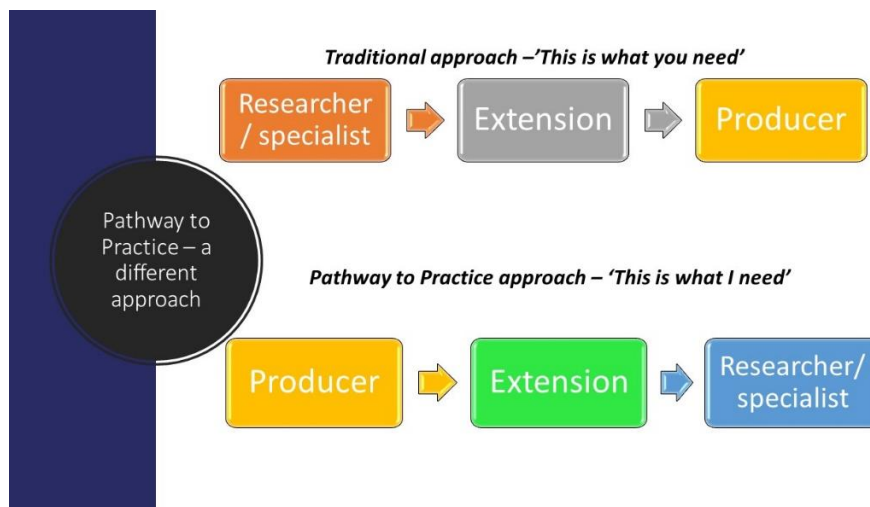


Figure 2. The ‘traditional’ approach to adoption/extension versus the NB2 Pathway to Practice approach.

Future targeted R&D under the NB2 program, will be conducted in the Herd, Feedbase and/or Sustainability pillars, and be informed by issues identified by the NB2 producer groups as a result of the collection and analysis of objective data associated with their business enterprises. The **Herd** pillar will focus on enhancing breeding herd performance through improved management systems and interventions. The **Feedbase** pillar will have a focus on optimising feed production, supply and utilisation for the breeding herd in order to achieve the desired performance, in a cost-effective manner, while the **Sustainability** pillar explores issues related to the production of beef in a manner that is socially, environmentally and economically responsible.

## 5. Management

A management flowchart for NB2 is presented in Figure 3.

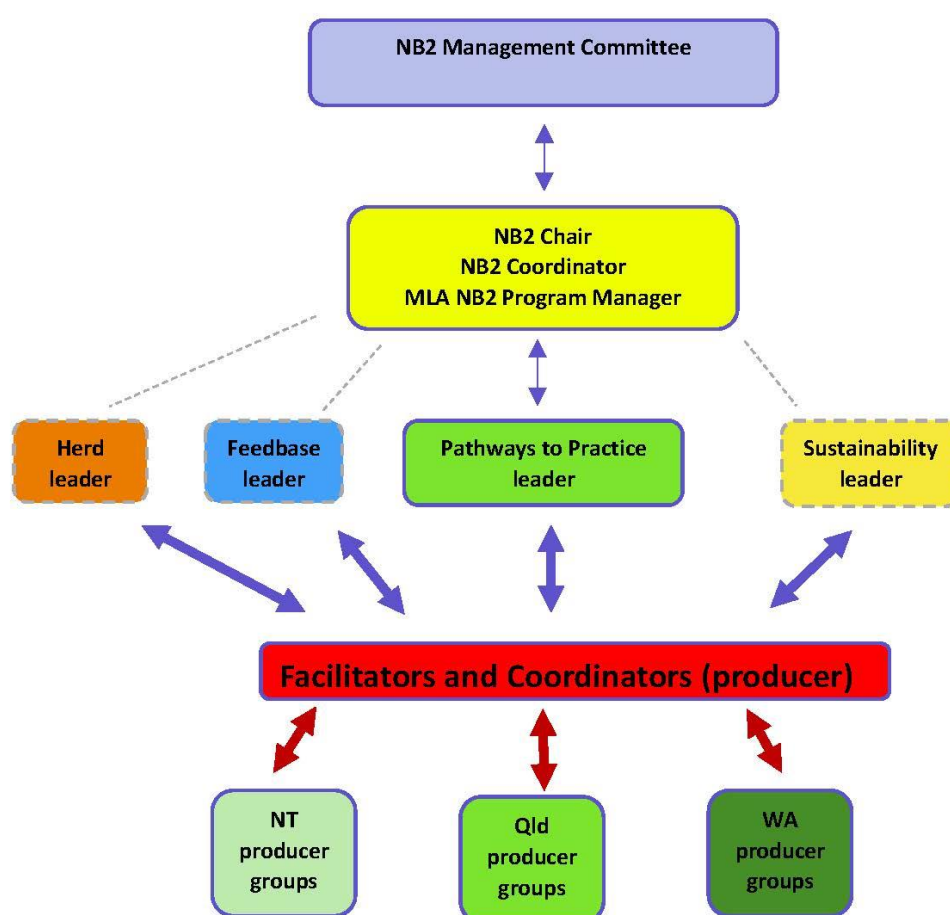


Figure 3. An illustration of the management flow of NB2

### 5.1 Independent Chair of the NB2 Management Committee

An independent Chair of the NB2 Management Committee (Lee Fitzpatrick) was appointed by MLA in September 2020 to lead NB2 through its establishment. In this role, the Chair has delivered leadership to the program; engaged directly with the northern beef industry and producers; arranged meetings; organised workshops, prepared documentation as required, provided oversight to the management committee and effectively driven implementation of pilot groups and the program as a whole.

Some specific objectives of the appointment were to:

- Assist in the establishment of the Management Committee of the Northern Breeding Business (NB2) strategic RDE&A partnership.
- Recruit a coordinator for the NB2 strategic partnership.
- Develop governance and strategic plans for NB2 and facilitate a needs and gap analysis, concentrating on extension and adoption outcomes.
- Produce a comprehensive NB2 investment prospectus and industry orientated collateral.
- In consultation with MLA, implement an operating structure for NB2, as suggested in the Northern Breeding Business: NB2 - Strategic Partnership Development final report.
- Assist in defining base data to be collected, standard systems for monitoring and establish mechanisms and protocols for the establishment and secure storage of data.
- Support activities that attract external matching funds that support RDE&A initiatives, develop and present a detailed budget to August 2022.
- Engage with stakeholders in the north Australia beef industry and initiate activities to recruit relevant RDE&A service providers to deliver NB2 goals.
- Facilitate development of full proposals for relevant RDE&A projects identified through the MLA investment call process.
- Facilitate training as required for beef business partners, co-ordinators and facilitators, and provide oversight to pilot producer groups.

## 5.2 NB2 Co-ordinator

The NB2 Co-ordinator (Steve Banney) was appointed by MLA in September 2020. The program coordinator has had overall responsibility for delivery of NB2 outputs and outcomes to MLA. To assist in the delivery of NB2 the coordinator has provided management, project monitoring (including budgets, milestone/final reporting and support to evaluation and decision-making processes), operational guidance to science teams, guided communications strategy, convened and reported on workshops (R&D, E&A) to achieve effective use of resources and initiated program reviews for MLA.

The role has included, but not been limited to:

- Monitoring and coordinating all activities and ensure that NB2 has progressed in a coordinated, collaborative and consistent manner to achieve the Program objectives and outcomes specified;
- Assisting in the ongoing functionality of a Management Committee and project Review Panel/s, with the guidance of MLA;
- Liaising regularly with MLA Program Managers and key staff and facilitating a six-monthly review at which Program Members and key collaborators review and assess projects, E&A activities and the industry outcomes/benefits;
- Coordinating and disseminating information about the Program, including the projects and their research outcomes, to all Program Members (Communications and adoption program) and industry sectors, and
- Obtaining and reviewing all reports that are provided for submission to MLA by the Program Members and providing reports to MLA in relation to the Program (including the projects) in a timely manner that satisfies milestone schedules and advising on satisfactory/unsatisfactory progress (monitoring and evaluation) across the program.

## 5.3 NB2 Management Committee

The NB2 Management Committee was established by Meat & Livestock Australia (MLA) and the North Australia Beef Research Council (NABRC) in September 2020, and acts in an advisory capacity in accordance with its Terms of Reference (ToRs). The objectives of the Committee are to oversee, direct and monitor the development, implementation and delivery of NB2.

The Committee is responsible for the management of the partnership, including:

- determining the strategic directions of the partnership and ensuring that the strategic directions for the partnership align with the Red Meat 2030 and the MLA Strategic Plan;
- giving direction to the NB2 Coordinator in carrying out the responsibilities set out in their contract with MLA;
- reviewing and approving the NB2 Annual Report;
- reviewing the science quality and alignment of project applications with the objectives and advising on new areas of research, development and adoption/extension activities;
- reviewing, critiquing, recommending modifications to and delivering feedback on relevant project applications submitted to MLA;
- recommending Projects for submission to MLA for funding approval and inclusion in the partnership; and
- providing advice and making recommendations to MLA and on:
  - a) Governance
  - b) Research, Development, Extension and Adoption activities
  - c) Budgets
  - d) Risk analyses
  - e) Monitoring, Evaluation, Review and Improvement (MERI) framework;
  - f) Communication and Adoption plans; and
  - g) other issues relating to the Northern Breeding Business RD&A strategic partnership as the Committee considers appropriate.

The current structure and membership of the initial NB2 Management Committee is as follows:

- Independent Chair – Lee Fitzpatrick (since September 2020)
- NB2 Co-ordinator – Steve Banney (since September 2020)
- NABRC Chair – John Taylor (since November 2020)
- MLA Representative – Gus Rose (since February 2022)
- Research Representative – Ed Charmley (since September 2020)
- Producer Representative – Julie McDonald (since September 2020)
- Producer Representative – Geoff Murrell (since September 2020)

At its 6 February 2022 meeting, the Management Committee resolved to increase the number of producer members from two (2) to three (3) and to add an extension/adoption representative to the committee.

The Committee has met formally on eight occasions, as follows:

- 13 October 2020 (video conference)
- 25 November 2020 (Townsville)
- 18 December 2020 (video conference)
- 13 April 2021 (Brisbane)
- 22 July 2021 (video conference)
- 23 February 2022 (Brisbane)
- 25 May 2022 (Brisbane)
- 7 July 2022 (video conference)

Since August 2021, the Committee has received monthly updates on the progress of the NB2 implementation via video conference.

Further details of the current NB2 Management Committee members are available here:

<https://www.mla.com.au/research-and-development/livestock-production/reproductive-efficiency/northern-breeding-business-nb2/>

## 5.4 NB2 Co-ordination Group

The NB2 Co-ordination group is responsible for the ongoing planning, implementation and co-ordination of the NB2 program. The members, who meet at least weekly, are currently:

- NB2 Co-ordinator
- NB2 Management Committee Chair
- MLA Program Manager, Grassfed Beef Productivity
- MLA Project Manager, Grassfed Beef Productivity

## 5.5 Pillar Leaders

The NB2 Management Committee has endorsed leaders for each of the four NB2 pillars, Pathway to Practice, Herd, Feed-base and Sustainability, in order to broaden the readily available base of expertise available in making decisions relating to technical and managerial aspects of the program, to aid in the integration and co-ordination of the activities of the stakeholder partners, RDE&A providers and collaborators, and to provide a leadership focus within the pillars.

## 5.6 Producer Group Facilitators

The Facilitators have been appointed to each of the current seven NB2 producer groups. For four of the producer groups (two in Qld, and two in NW WA) the group facilitators are State agency appointees, while for the corporate, indigenous pastoral and Cloncurry producer groups the facilitators are private consultants.

Producer group facilitators are responsible for:

- Assisting participating producers to collect standardised data throughout the year and fill in livestock schedules, feed budgets and financial budget at the end of each calendar year,
- Aiding producers to understand how to read/interpret reports generated from the analysed data,
- Facilitating group discussions on the baseline data to highlight key areas to focus on over the course of the 2-year pilot,
- Assisting producers with the evaluation of potential interventions or management practice changes for possible implementation,
- Facilitating discussion to identify training/skills building needs required and organise the appropriate training package(s),
- Providing feedback to MLA regarding the peer-to-peer learning process, the templates used for data collection, R&D priorities, and the Monitoring, Evaluation and Reporting (MER) framework via annual milestone reports,
- Encouraging 10% of producers to continue for 1 – 3 years beyond the pilot phase of the NB2 project to work with the MER expert to determine the impact of practice changes made as a result of being involved in a producer group.

Further details of selection criteria and roles and responsibilities of group facilitators are available on the NB2 website: <https://www.mla.com.au/research-and-development/livestock-production/reproductive-efficiency/northern-breeding-business-nb2/>

## 5.7 Group Producer Co-ordinators

Co-ordinators have been nominated for each of the established producer groups. Ideally, the group producer co-ordinators are selected from within the group by the members to provide a measure of leadership, mentoring and co-ordination of the group's activities.

Their roles include: being the point of contact for the group; leading communication within the group; co-ordinating the group's activities; reporting on data collection activities; and, in association with the group facilitator, determining training needs of the group and addressing those needs.

Further details of selection criteria and roles and responsibilities of producer group co-ordinators are available on the NB2 website:

<https://www.mla.com.au/research-and-development/livestock-production/reproductive-efficiency/northern-breeding-business-nb2/>

An outline of the training provided for facilitators and co-ordinators is presented in Appendix 1.

## **6. Activities**

### **6.1 Call for Expressions of Interest from Producers**

Expressions of Interest (Eoi) from producers to participate in the NB2 program were advertised in September 2020 on the MLA website, in relevant print media, and subsequently on the NB2 website. This attracted interest from beef producers across northern Australia. The opportunity for producers to become involved in the NB2 program has been communicated by MLA staff and contracted NB2 appointees at a wide range of events such as NABRC, RBRC, Cattle Council of Australia (CCA), AgForce, Northern Territory Cattleman's Association (NTCA) and Kimberley Pilbara Cattleman's Association (KPCA) meetings and BeefUp forums. This call attracted responses from >50 beef businesses across northern Australia, many of whom are now in established NB2 producer groups.

### **6.2 Foundation NB2 R&D Projects**

In September 2020, MLA advertised for preliminary RD&A proposals that addressed Terms of Reference (ToR) relevant to the NB2 objectives. Of 14 preliminary proposals received, 9 were assessed by the Northern Producer Panel, with five (5) progressing to full proposals. Following further assessment by a technical panel, the three (3) proposals listed below were recommended for funding while a fourth was merged with a complementary proposal (see 7.3 Research).

Future ToRs for NB2 focussed RDE&A projects will be informed by R&D needs identified by NB2 program participating producers.

### **6.3 Data Templates**

In order to standardise the data and facilitate the collection, storage and analyses of data, templates have been specifically developed for NB2 by leaders in the field for the herd inventory/flow, a beef business's basic financial information, the feedbase and sustainability. They have already undergone some updates (eg Feedbase) in response to feedback and initial use.

The NB2 data templates and guidelines for their use are available here:

<https://www.mla.com.au/research-and-development/livestock-production/reproductive-efficiency/northern-breeding-business-nb2/producer-group-resources/>

The program has provided training in the use of the data templates for members of the NB2 producer groups (see 6.5 for further details).

## 6.4 NB2 Needs and Gaps Analysis

In late 2020 independent consultants were appointed to conduct an analysis and review of existing Australian and appropriate overseas research and development material to identify needs and gaps that are directly relevant to the NB2 program. The report was commissioned to assist the planning of work and identification of gaps relevant to the NB2 strategic partnership between industry participants and multiple providers of research, development and adoption (RD&A) for the northern beef sector, sponsored by Meat and Livestock Australia (MLA). Material reviewed included the peer-reviewed literature, as well as industry reports and other relevant publications.

The specific purpose of the needs and gaps analysis was to audit and evaluate the present state of knowledge in three areas of R&D deemed by industry leaders and supporting scientists to be important drivers of productivity and profitability for northern beef breeding businesses: breeding herd management, feedbase management, and sustainability. A fourth section on pathways to practice addressed barriers to adoption and identified possible avenues to overcome these barriers. The final section summarised conclusions drawn from the needs and gaps analysis and offered specific recommendations on R&D needs and priorities; adoption targets, systems and capacity; and options for NB2 delivery. Conclusions from the report include:

- That the urgent, successful adoption of scientific innovation conducted in a focussed and coordinated way is the primary means of improving the productivity of northern beef breeding enterprises.
- Adoption of existing scientific knowledge and research that can quickly be made adoption-ready is the highest priority.
- There is still a need to research further innovations and, wherever possible, this should be conducted as participatory research, involving engagement of producers at every step, starting from identification of the problem through to delivery of the solution.
- The elements of adoption should include focus on attainable goals such as reducing cow and calf mortality achieved by applying better understanding of feedbase, environment and herd factors.
- The process should work within the current adoption structure at MLA.
- The widespread lack of access to experienced, competent advisors is identified as a critical unmet need of the northern beef industry.

The authors made the following six recommendations:

- 1) The NB2 goal of identifying and implementing appropriate and uniform metrics for assessing breeding herd performance is strongly endorsed.
- 2) Studies on the causes of calf and cow mortality should be continued to better understand the linkages between risk, causation and death, and thus enable the design of interventions to break the linkages.
- 3) Strategies to promote the demonstrated economic and environmental benefits of sustainable grazing management practices should be the primary focus of work on feedbase RD&A.
- 4) Promotion of P supplementation in P-deficient regions/locations should be considered as a high priority because of the clear evidence of major, measurable effects and early impacts on breeding herd performance.
- 5) Opportunities to broaden levels of adoption of research-proven management practices include:
  - controlled mating to enable seasonal breeding,

- evidence-based culling of older cows to reduce cow and calf mortality,
  - early weaning to enhance cow fertility by reducing the likelihood of post-partum anoestrous.
- 6) Research, development and adoption of genomic selection to improve genetic traits such as reproductive efficiency, heat tolerance, tick resistance and polledness should continue to be a longer-term priority for the northern breeding industry.

The Final Report on the needs and gaps analysis (Bell and Sangster 2021) will become available on the MLA website. In addition, a peer reviewed publication has been prepared for submission to Animal Production Science.

## 6.5 Workshops and Training

Face-to-face is the preferred delivery mode for NB2 workshops and training, however, restrictions due to Covid 19 have meant that some activities have had to be conducted online. While not ideal, this has allowed the program to proceed in a reasonably timely manner, in otherwise difficult circumstance. In preparation for the implementation of the pilot phase of the NB2 program, a number of workshops and training opportunities have been provided for participating personnel, as follows:

- NB2 Data Workshop, 26-27 November 2020, JCU Douglas Campus. The objective of the workshop was, *“For participant stakeholders to reach agreement on data collection, storage and management, and to define the value proposition to support training programs for the NB2 Pathways to Practice pillar”*.
- NB2 Data Training Workshop, 14-15 April 2021, Brisbane. The objective of the workshop was, *“To walk away from the workshop with a clear view of what and how we are going to collect, transfer, store, validate, secure, access, analyse and report on the NB2 data, and what follows”*.
- Training in *“Peer-to-peer small group facilitation”* and *“Their role in NB2”* was provided by Ag Consulting Co. for NB2 producer group facilitators and co-ordinators, respectively, in a series of online workshops.
- Foundation training in business and in the assessment of feedbase was delivered to facilitators and NB2 producer groups in a series of online and face-to-face workshops by Bush Agribusiness and Range IQ, respectively.

The training provided for the group facilitators, co-ordinators and producers in the NB2 producer groups (Fitzroy, Burdekin, Kimberley/Pilbara, ILSC, Corporate and Cloncurry) is summarised in Table 1.

## 6.6 Monitoring, Evaluation Reporting (MER) and Communication Plans

Monitoring, Evaluation and Reporting, and Communication plans were developed for the NB2 program in early 2021.

### 6.6.1 MER

The Monitoring, Evaluation and Reporting Plan for NB2 was developed by MLA staff, in consultation with DAFF staff involved with the NB2 program, a private specialist consultant, the NB2 Co-ordinator and the Chair of the NB2 Management Committee. For the NB2 producer groups, the MER's data action plan identifies four key points in the NB2 program where data is collected.

- **At the time of joining an NB2 producer group**
  - Complete registration form and 'pre'-program KASA
  - Initial collection of baseline data guides future KASA change



- **At the end of Year 1 (2022 financial year)**
  - Completed business skills training
  - Completed livestock schedule
  - Completed chart of accounts and basic cashflow budget
- **At the end of Year 2 (2023 financial year)**
  - Completed livestock schedule, pasture assessment and financial templates
  - Captured adequate data for annual situation analysis and understand how to use it
  - Consider practice change/interventions for implementation, document intent to change
  - Complete 'post' program KASA, including intention to change
- **1-2 years post-producer group engagement**
  - MER specialist to interview participating producers to determine practice change

**Table 1.** Summary of training provided to group facilitator, co-ordinators and producer groups, either face-to-face (f-t-f) or online.

Focus of training	Who	Where	Date(s)	Duration (days)	How	Comments
Data management	Facilitators	Brisbane	14/05/2021	2	f-to-f	
Peer to peer small group facilitation	Facilitators	Online	10/05/2021	0.5	online	
"	"	"	12/05/2021	"	"	
"	"	"	25/05/2021	"	"	
"	"	"	27/05/2021	"	"	
"	"	"	10/06/2021	"	"	Catchup session
"	"	"	11/06/2021	"	"	"
"	"	"	18/06/2021	"	"	"
"	"	"	21/06/2021	"	"	"
Their role in NB2	Co-ordinators	Online	20/12/2021	0.5	online	
Business (Part 1)	Facilitators	Online	12/10/2021	0.25	online	
"	Kimberley/ Pilbara 1	Online	29/10/2021	1.0	"	
"	Corporate	Mt Isa	17/11/2021	"	f-to-f	
"	Fitzroy	Biloela	26/11/2021	"	"	
"	Burdekin	Ayr	1/12/2021	"	"	
"	ILSC	Ingham	2/12/2021	"	"	
Feedbase (Intro)	Corporate	Mt Isa	18/11/2021	0.5	"	
"	Kimberley/ Pilbara 1	Online	28/11/2021	0.5	"	
"	Burdekin	Ayr	2/12/2021	0.5	online	
"	ILSC	Ingham	3/12/2021	0.5	"	
P-t-P intro	Co-ordinators	"	31/01/2022	2 x 0.5	online	
Breeding objectives	Fitzroy	Thangool	15/02/2022	1.0	f-to-f	
Business	Burdekin/ Fitzroy	Rockhampton	11/03/2022	1.0	f-to-f	Catchup session
Group meeting	Corporate	Brunette Downs	14-15/03/2022	2	f-to-f	
Feedbase 1 & 2	Fitzroy	Thangool	18/03/2022	1	f-to-f	
Feedbase 2	Burdekin	Charters Towers/ Warrawee	27/03/2022	2	f-to-f	
Business/Feedbase 1	Cloncurry	Cloncurry	4-5/04/2022	2	f-to-f	
Business/Feedbase 2	ILSC	Chillagoe/Bulimba	18-19/05/2022	4	f-to-f	
Group meeting	Corporate	Camooweal	24-25/05/2022	2	f-to-f	
Group meeting	Burdekin	Clermont/Winvic	5/06/2022	2	f-to-f	
Breedcow workshop	Fitzroy	Rockhampton	19/07/2022	2	f-to-f	

Further details of the NB2 MER plan are available on the NB2 website:

<https://www.mla.com.au/research-and-development/livestock-production/reproductive-efficiency/northern-breeding-business-nb2/>

### **6.6.2 Communications**

The NB2 Communications plan was developed by the MLA communications team along with other relevant MLA staff, in consultation the NB2 Co-ordinator and the Chair of the NB2 Management Committee. Further details of the plan are available on the MLA website.

<https://www.mla.com.au/research-and-development/livestock-production/reproductive-efficiency/northern-breeding-business-nb2/>).

The plan is currently under review to ensure that it reflects the most effective pathway to engage with producers.

### **6.7 NB2 Charter of Operations**

The NB2 Charter of Operations, a 'living document' reflecting the current state of development and implementation of the NB2 program, has been developed as the program was implemented. It defines the current state of the "Rules of Engagement" of the management of NB2 and the roles and responsibilities of key appointments. The Charter of Operations is currently being updated and will be available on the NB2 website once the update has been completed.

### **6.8 NB2 Glossary of Terms**

A standard glossary of terms has been developed for the NB2 program. It can be found here:

<https://www.mla.com.au/globalassets/mla-corporate/research-and-development/program-areas/livestock-production/nb2-glossary-june21.pdf>

### **6.9 Data and privacy**

As the integrity of data and its analyses are critical for decision making to be useful, all participants in the NB2 program; researchers, co-ordinators, collaborating producers and business advisors are required to collect and store prescribed data and information in a standard format and manner.

Furthermore, all data collection, storage, analysis and use is compliant with the National Farm Data Code (2020) (<https://nff.org.au/programs/australian-farm-data-code/>).

The NB2 program respects the privacy of individuals. In order to ensure compliance with the *Privacy Act 1988* (Cth), any new project or activity or a change in systems or processes that may involve a high risk to the rights and freedoms of individuals whose personal information is being handled by or on behalf of NB2 is subject to an MLA Privacy Threshold Assessment (PTA). MLA's Privacy Policy is available here:

<https://www.mla.com.au/general/privacy/>

A letter of agreement around data privacy and other elements of the NB2 program has been developed and will be circulated to the NB2 groups (see Appendix 2).



The Fitzroy group completing their herd and financial foundation training.



The Kimberley/Pilbara group 1 meeting in Broome.





The indigenous pastoral group meeting at Mungalla Station, Ingham. December 2021



Some of the Burdekin group hard at it in their foundation training.



The first meeting of the corporate pastoral group in Mt Isa.

## 6.10 Risk

A risk register has been developed for NB2 (see Appendix 3).

## 7. Progress to Date

### 7.1 NB2 Producer Groups

Seven (7) NB2 producer groups have been established, representing a conservative estimate of some 51 beef businesses that manage 12+M hectares of country and more than 400,000 breeders.

#### 7.1.1 Pilot producer groups

Of four producer groups identified for the Pathway to Practice pilot phase of NB2, three have been established (≈20 beef businesses) comprising: two in Queensland (Qld) focused on the Fitzroy River basin and the lower Burdekin River catchment, and one in the Kimberley/Pilbara in Western Australia. These groups are being facilitated their respective State agency staff.

##### Pilot producer groups

- Qld Burdekin group (7 beef businesses) – DAF
- Qld Fitzroy group (10 beef businesses) – DAF
- WA Kimberley Group 1 (4 beef businesses) – WADPIRD

#### 7.1.2 Other established NB2 producer groups

Four (4) additional groups have been established, one focused on corporate pastoralism in Qld and the NT, and one focused on indigenous pastoral interests in Qld, an additional Kimberley/Pilbara group, and a group in the Cloncurry of north Qld - a further 30 beef businesses. Three of these groups are being facilitated by contracted private consultants, while the additional Kimberley/Pilbara group is facilitated by State agency staff.

##### Other producer groups

- Qld/NT Corporate pastoral group (12 producers) - Bush Agribusiness
- Qld Indigenous pastoral group (8 producers) - LPM Qld
- Kimberley/Pilbara 2 (3 beef businesses) – WADPIRD
- Cloncurry (7 beef businesses) - NAVG

#### 7.1.3 Additional NB2 producer groups

Following the successful establishment of the current seven NB2 producer groups, the NB2 co-ordination group is looking to recruit producer groups into the NB2 program in 2022/23.

## 7.2 Research

A targeted MLA R&D project call in the last quarter of 2020 led to the NB2 Management Committee endorsing the following project proposals for funding.

Project title	Lead organisation	Duration	Budget
4 Assessing practical interventions to reduce calf wastage & herd mortality in north.	QU/CQU	5 years	\$3.9M
6 Pathways to practice for the northern beef industry.	DAFF	3 years	\$3.2M
7 uSuckled – Detection of maternal behaviours associated with suckling in beef cattle.	NTDITT	1 year	\$191k
QU – Queensland University	DAFF – Qld Department of Agriculture and Fisheries		
CQU – Central Queensland University	NTDITT – NT Department of Industry, Tourism and Trade		

Further R&D under the NB2 program will be informed by issues identified by the NB2 producer groups as a result of the collection and analysis of objective data associated with their beef business enterprises. Future R&D is very dependent on the levy and MDC funds captured under NB2, and any future R&D will need to align with the objectives of NB2 and clearly articulate a value proposition that increases breeder herd efficiency and/or reduces calf mortality.

### 7.3 Budget

A budget summary for NB2 projects is presented in Appendix 4.

### 7.4 Communications

A wealth of information on the NB2 program is available on the NB2 website, located here:

<https://www.mla.com.au/research-and-development/livestock-production/reproductive-efficiency/northern-breeding-business-nb2/>

Since January 2021, the NB2 website has been viewed 4,204 times by 2,196 people averaging a view time of 1 minute 40 seconds.

- A webinar entitled ***'Northern Breeding Business (NB2): Launching a better future for northern Australian breeding herds'*** was conducted on 9 December 2020. This was very well subscribed, with 174 registrations and 86 attendees. The webinar is available on the NB2 website, here: <https://futurebeef.com.au/knowledge-centre/northern-breeding-business-nb2-launching-a-better-future-for-northern-australian-breeding-herds/>
- On 5 May 2021 at Beef 2021 in Rockhampton, MLA hosted a seminar on ***'Linking innovation with reproductive performance'*** focused on the innovative on-farm practices and technologies that can address calf loss in the northern herd. Attendees, who numbered about 200, received an update on the NB2 initiative and a producer panel discussed their experiences with technologies and innovation to improve their herd reproductive performance.



Producer panel Q&A discussion session at Beef 2021

Media monitoring has identified more than 20 items across radio and the print media since August 2020 that were focussed on the NB2 program. In addition, NB2 and projects associated with NB2 have featured in MLA's e-newsletter and Feedback magazine, and in Beef Central, on a number of occasions.

NB2 focused articles released in MLA's the Weekly newsletter can be found here:

- [New research partnership targets northern beef industry | Meat & Livestock Australia \(mla.com.au\)](https://www.mla.com.au/news-and-events/documents/mla-feedback-winter-2022-web.pdf)

This article was viewed 109 times for an average of 2 minutes and 1 second. It also ran Friday Feedback on 28 August 2021, with an open rate of 26% and a click through rate of 4%.

- [NB2 Indigenous group kicks off | Meat & Livestock Australia \(mla.com.au\)](https://www.mla.com.au/news-and-events/documents/mla-feedback-winter-2022-web.pdf)

This article was viewed 73 time for an average of 15 seconds. It also ran in The Weekly on 12 November 2021, with an open rate of 28% and a click through rate of 6%.

NB2 focussed articles released in MLA's Feedback magazine can be found here:

- 'Lifting calf survival, together', <https://www.mla.com.au/globalassets/mla-corporate/news-and-events/documents/mla-feedback-winter-2022-web.pdf>, p. 8
- 'Every calf counts', <https://www.mla.com.au/globalassets/mla-corporate/news-and-events/documents/mla-feedback-winter-2022-web.pdf>, p. 9
- 'Technology bridges distance', <https://www.mla.com.au/globalassets/mla-corporate/news-and-events/documents/mla-feedback-autumn-2022-web.pdf>, p. 9
- 'Feed, finance and herd tracking to boost northern profits', <https://www.mla.com.au/globalassets/mla-corporate/news-and-events/documents/mla-feedback-autumn-2022-web.pdf>, p. 10

- 'Tips to target better beef reproduction', [Feedback magazine March 2021/April 2021](https://www.mla.com.au/globalassets/mla-corporate/news-and-events/documents/mla-feedback-autumn-2022-web.pdf), p. 14

This article also ran in Friday Feedback and was viewed 269 times for an average of 2 minutes and 14 seconds.

- 'Bold new world of research for producers', [Feedback magazine March 2021/April 2021](https://www.mla.com.au/globalassets/mla-corporate/news-and-events/documents/mla-feedback-autumn-2022-web.pdf), p. 6-7
- 'Boost for northern breeder businesses', [Feedback magazine September/October 2020](https://www.mla.com.au/globalassets/mla-corporate/news-and-events/documents/mla-feedback-autumn-2022-web.pdf), p. 5

Quarterly updates on the NB2 program are circulated by email to all interested parties who have registered to receive this service.

The NB2 program continues to engage with producers who have expressed an interest in joining an NB2 producer group but have not, as yet, had the opportunity to do so. Additional opportunities will arise as the roll-out of the program progresses.

## 7.5 NB2 Promotional Material

A range of promotional materials that have been developed for the NB2 program are presented in Appendix 5.

## 7.6 Other Resources

The NB2 producer group registration form and other NB2 resources are available here:

<https://www.mla.com.au/research-and-development/livestock-production/reproductive-efficiency/northern-breeding-business-nb2/producer-group-resources/>

## 7.7 External Funding Support

An expression of interest was submitted to the CRCNA in September for their 2020 annual project call, seeking \$450,000 in funding support for the pilot phase of NB2. This application was not successful, however, further discussions have been held with the CRC to explore possible future collaborations. Other funding opportunities have been investigated through the Queensland Investment Corporation in 2021 and the Northern Australia Business Development Grant program in 2022, but have not proceeded to applications due to eligibility issues. External funding opportunities will continue to be explored.



## 7.8 Review

MLA undertook an end-of-year mini review of the NB2 program on Friday 3<sup>rd</sup> December 2021.

The review panel consisted of:

- MLA Group Manager - Productivity & Animal Wellbeing
- MLA Design Strategy & Leadership Lead
- South-East Queensland RBRC Chair

Steve Banney (NB2 Co-ordinator), Nigel Tomkins (MLA Program Manager - Grassfed Productivity) and Lee Fitzpatrick (NB2 Management Committee Chair) attended the review meeting in person, while the NB2 Pillar Leaders, Dave Smith (Pathway to Practice), Geoff Fordyce (Herd), Dionne Walsh (Feedbase) and John Gaughan (Sustainability) presented online.

Key findings and recommendations from the review team included:

- ❖ That overall, the NB2 program appeared to be on track with good progress being made.
- ❖ A number of challenges were flagged, including contracting and attracting quality facilitators, which could derail the project. A focus should be put on solutions to these issues.
- ❖ Consideration is to be given on how engagement can be maintained with producers who have expressed interest in NB2 but are not yet part of a group.
- ❖ There needs to be clear articulation and communication on how and when additional NB2 producer groups will be implemented.
- ❖ Options for upskilling producers to be group facilitators is to be explored.

## 8. Conclusions

- The implementation of the NB2 program has proceeded in a timely manner in line with the L.NAB.1903: Northern Breeding Business: NB2 Strategic Partnership Development final report, in spite of the difficulties associated with the current Covid-19 pandemic.
- Seven NB2 producer groups have been established, engaging 51 northern beef business that manage 12+M hectares of rangelands and 400,000+ breeders.
- Facilitators and co-ordinators have been appointed for each of the producer groups and have completed a formal NB2 training program in small group dynamics and facilitation.
- Six of the seven producer groups have completed their foundation training in the Herd, Financial and Feedbase data templates that were developed for the NB2 program.
- The producer groups are populating the data templates with their specific beef business data through 2022.
- Four research projects that address Terms of Reference (ToR) relevant to the NB2 objectives have been implemented in 2021.
- A substantial NB2 communications program has been implemented which continues to keep all stakeholders in the program up-to-date with its activities. It's a living document and is being continuously reviewed and improved to ensure that it engages effectively with NB2's stakeholders.



## 9. Benefits to Industry

The NB2 strategic partnership promotes and facilitates:

- Increased and diverse investment in RDE&A for the benefit of the northern beef industry.
- Increased and integrated engagement in RDE&A by northern beef producers.
- Increases in productivity and profitability from northern rangeland systems that are socially, environmentally and economically responsible.
- Increased conversion of research and development output into industry/business outcomes.

The specific objective of NB2 is:

- ❖ By 2027, return \$20M in net benefits per annum to the northern beef industry through increased production of 10M kg live weight of sale cattle.
- ❖ This will be delivered through 250 northern beef businesses engaged with NB2, each with at least 800 AE of cattle, collecting and using objective data to inform business decisions and within the seven-year initial life of the program achieving:
  - 5% increase in weaning rate,
  - 1% decrease in herd mortality rate,
  - 10 kg increase in sale weight of cattle at the same age,
 while operating at a level of production and profit that is sustainable in the long-term.

In delivering the above benefits, NB2 addresses a number of the beef industry's Red Meat 2030 strategic plan's identified priorities (RMAC 2019):

- ❖ **Our people**
  - Developing skilled and capable people
  - Enabling practice change
- ❖ **Our livestock**
  - Adopting animal health, welfare, biosecurity and production best practices
  - Optimising animal production for the environment and market
- ❖ **Our environment**
  - Expanding our role in environmental stewardship

In addition, NB2 contributes to MLA's guiding principle of "*Fewer, bigger, bolder*" as one element of **Northern Australia**, an area identified for substantial investment and opportunity for creating long term benefits for the northern beef industry under its MLA 7 initiative.

## 10. Recommendations

1. Consideration should be given to changing the name of the **NB2 Management Committee** to the **NB2 Advisory Committee**, a title which more accurately reflects the role that the Committee has played in the establishment and roll-out of the NB2 program.
2. Given the successful establishment of the current seven (7) NB2 producer groups the full implementation of the NB2 program out to 2027, as outlined in Fitzpatrick (2020), should be progressed.
3. NB2 is a large, complex and diverse program with the potential to have a significant positive impact on productivity, profitability and sustainability of the north Australian beef industry. Appropriate budget must be secured to enable the successful implementation of the full NB2 program.

4. The NB2 Communications Plan should be reviewed regularly to ensure that it reflects the most effective pathway to engage with producers.
5. The NB2 website is in urgent need of comprehensive updating to reflect the current state of development and implementation of the program.
6. With the proposed increase in the number of northern beef producers engaged with NB2 producer groups, there will be a need to identify and train additional producer group facilitators. Planning is urgently required to both identify and train potential facilitators to support this growth in the program.
7. Maintaining the engagement of producers who have expressed interest in NB2, but are not yet part of a group, is a challenge for the program. A strategy that is focussed on this issue needs to be developed.

## 11. References

- Chilcott C, Ash A, Stokes C, Charmley E, Collins K, Pavey C, Macintosh A, Simpson A, Berglas R, White E and Amity M (2019) Northern Australia beef situation analysis. A report to the Cooperative Research Centre for Developing Northern Australia, CSIRO, Australia.
- Bell A and Sangster N (2021) Needs and gaps analysis for NB2. Final report of project B.GBP.0055. Meat and Livestock Australia, North Sydney, NSW.
- Fitzpatrick LA (2020). Northern Breeding Business: NB2 Strategic Partnership Development. Final report of project L.NAB.1903. Meat and Livestock Australia, North Sydney, NSW.
- Patchett B, Bewsell D and Grigg J (2020) RMPP Action Network Final Report, Red Meat Profit Partnership, NZ.
- RMAC (2019) Red Meat 2030 - A shared vision and direction for Australia's red meat and livestock businesses [Online]. Available at: <https://www.redmeat2030.eom.au/> (verified 18 March 2022).

## 12. Appendices

1. Outline of training activities provided for NB2 facilitators and co-ordinators
2. NB2 participation agreement
3. NB2 risk register
4. NB2 budget summary
5. NB2 promotional material

## Appendix 1.

### Outline of training activities provided for NB2 facilitators and co-ordinators

Facilitators
<p>Prepare running sheet for the two workshops – Facilitator training and Producer Co-ordinator Training. Sessions to be facilitated along the lines of a Peer to Peer approach to demonstrate how to establish and facilitate a group.</p> <p>Develop materials, power points and activities for the groups.</p> <p>Develop Action Plan template for the Producer groups</p>
<p>Send pre-work to facilitators</p> <p>Deliver four on-line sessions for the Facilitators in May using Zoom. Each session to be 3.5 hours in length.</p> <p>Sessions recorded and follow up emails with top up sheets and material generated in the sessions.</p>
<p>Establish a Peer to Peer Facilitator group.</p> <p>Set up protocols and communication methods.</p> <p>Drive the on going communication and sharing between the facilitators as they establish their groups</p>
<p>Facilitate on on-going Zoom Peer to Peer group for the facilitators. Bring them together 4 times each year to share learnings and grow their skills as facilitators.</p> <p>Sessions to include a focus on sharing, group mentoring and addition of topics/ speakers as determined by the group for on-going development</p>
Producer Coordinators
<p>Provide on-line training for Lead Producers. Two 3.5 hour sessions over two days to build their understanding of P2P and facilitated approach and their role in the program.</p>
<p>Group mentoring session with the PC after several sessions – a couple of check in's and evaluation</p>
<p>One-on-one mentoring for either facilitators and Producer Co-ordinators as required throughout the life of the program</p>
<p>Assist with development of annual forum and design to take a P2P approach using the skills of the facilitators</p>
<p>Attend annual forum and assist with facilitation, run a face to face session with facilitators to further build connection and skills</p>
<p>Travel and accommodation to attend the forum</p>
<p>Evaluation and reporting</p>

## Appendix 1.

Review pilot workshops and update for future programs
Evaluation of pilots and provide report on outcomes for the facilitators and Producer Co-ordinators
On going monitoring and evaluation and attendance and meetings with project team as required . collection of evidence, opportunities for improvement
Prepare reports for project team as required

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## NB2 - Participation agreement

Date:

Dear

Welcome to the NB2 Pathway to Practice project. Please review the following general information regarding your enrolment as a collaborating property in the Pathway to Practice project.

The accompanying invoice from the North Australian Beef Research Council (NABRC) is your co-contribution to the project which will be managed and leveraged by NABRC, through the MLA Donor Company, to the approximate sum of \$3,680, which will be pooled with other contributions from your group and held in separate NB2 group accounts.

I/We understand that to get the most out of our involvement we will complete the required herd, feedbase and business templates to inform our business assessment reports for the next three years. I/We also understand that if due to circumstances beyond our control I/We may withdraw from the project by notifying our group's coordinator/facilitator prior to withdrawal.

### Roles

As the **participating business (you) will:**

- Participate as a project group member and analyse your business to identify improvement opportunities; attend foundational training for herd, business and feedbase skills and attend group meetings to share ideas and identify training needs.
- Be willing to commit for three years (however, either party may agree to withdraw).
- Be able and willing to annually describe your business using the herd, feedbase and business templates provided to form the basis of your annual business report.
- Be able and willing to contribute \$2,000 annually, paid on invoice to the North Australian Beef Research Council (NABRC).

In return the **project (us) will:**

- Provide support to businesses using a trained facilitator and a producer coordinator for each group for up to three years.
- Supply standard data templates (herd, feedbase and financial) to calculate key performance indicators.
- Draw on a network of specialists to assist with potential ways to improve your profitability and sustainability.
- Create a network of beef producers, researchers and advisors.
- Ensure that any oral, written or electronic reporting of the findings from the project will ensure the identity of individual properties is anonymous. Each enrolled property will be identified in the Pathway to Practice database by code, with the key held by the project manager. External reporting of findings for specific properties will occur only after receiving written permission from the property owner/manager (see data privacy guidelines below).
- Provide a summary of your business report annually based on the template data supplied.
- Provide assistance to producers to understand the annual summary business reports.

**Benefits to you from project participation:**

- Assistance with developing a clear understanding of your current business situation as it relates to the productivity, profitability and sustainability of the breeding enterprise under your management.
- A practical, standardised data collection and business analysis process.
- Opportunity to improve production, profit and sustainability by altering management systems using evidence from your own and other industry partners.

## Appendix 2.

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- Access to the most relevant research and best practice advice.
- Supported by a trained facilitator and a local member of your group as a coordinator.
- Have direct input to determine future MLA research priorities.

### **NB2 data privacy guidelines**

#### **Background**

- The NB2 database will include de-identified (coded) records of your herd, feedbase and business (cost/returns) as set out in the respective data collection templates.
- The data is collected on a confidential basis, which places strict guidelines on the availability and use of the data.
- Ownership of the data resides with the contributing business owner.
- Collected data will be forwarded to Bush Agribusiness and Range IQ who will analyse, de-identify (code), store, and report on the data.
- Bush Agribusiness and Range IQ will adopt best practice in handling the data utilising the standards set out in the National Farmers Federation Australian Farm Data Code.
- MLA will have a privacy agreement with Bush Agribusiness and Range IQ to ensure the safe and secure handling and storage of all data.
- Only analysed, aggregated/summarised data will be used by MLA to report on the performance of NB2.
- The database is intellectual property.

#### **Guidelines for access to data requests**

- You own and have access to your own data.
- Formal written approval is required for all requests (other than yours as the data owner) for data from the NB2 database and for public release of information derived from the database. Access to data from the database is only via a signed letter of agreement with MLA.
- Application for access to use data contained within the database should indicate which data is required, and how it will be managed and used.
- Only formally nominated persons will have access to the database with unauthorised third-party access strictly prohibited.
- Any publication in any form must contain no evidence to directly link the published information to individual beef businesses unless authorised by an explicit agreement with those businesses.
- Any data, information or technology, generated or supported by the NB2 database, and utilised or published by authorised third parties MUST acknowledge the inputs of the NB2 program.
- Formal acknowledgment of the source of the data within the materials and methods section or equivalent for all publications and presentations must be made.
- Authorship of any publication will include appropriate representation from the database owners and agreed terminology and interpretation of the data.
- Any publication by authorised third parties that utilises data, information or technology, generated or supported by the NB2 database, must be approved by MLA prior to publication.

On behalf of the project team, we look forward to working with you.

Appendix 3.

<p>1. <b>Date:</b> 16 January 2022</p>	<p>NB2 RISK REGISTER</p>
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Activity	Hazards/Risks	Inherent Risk score <small>Refer Risk Matrix</small>	Control Measures <small>Control measures to be selected and applied using the Hierarchy of Control – 1. Elimination -2. Substitution -3.Engineering (preferred ) 4. Admin</small>	Responsibility for Control	Residual Risk (after controls) Score <small>Refer Risk Matrix</small>
Working with producer data	Producer data is circulated without permission or protection.	High	<p>MLA Group Privacy Policy in place.</p> <p>NFF Farm Data Code application.</p> <p>Deidentification protocol in place.</p> <p>Engaged with MLA legal and MLA privacy officer for support and advice.</p> <p>Align with MLA’s “Use &amp; Recording of Confidential Information Policy”, Nov 2021.</p>	<p>Group facilitators, Range IQ and Bush Agribusiness.</p> <p>Pathways to Practice Pillar Leader.</p>	Low
Formation and retention of pilot groups	Pilot group members drop out	Medium	<p>Active engagement with potential group members before signing,</p> <p>Templates and expectations described before group formation.</p> <p>Producers make financial commitment on joining.</p>	QDAF	Low

**Appendix 3.**

Activity	Hazards/Risks	Inherent Risk score <small>Refer Risk Matrix</small>	Control Measures <small>Control measures to be selected and applied using the Hierarchy of Control – 1. Elimination -2. Substitution -3.Engineering (preferred ) 4. Admin</small>	Responsibility for Control	Residual Risk (after controls) Score <small>Refer Risk Matrix</small>
			Ensuring facilitators are consistent and managed through State agencies.		
Program funding	Insufficient operational funds	<i>Medium</i>	<p>Pipeline projects identified.</p> <p>Activities aligned with MLA annual investment plan.</p> <p>Matched funding sought for MDC engagement.</p> <p>Adoption levies targeted to support engagement activities.</p>	MLA	<i>Low</i>
Facilitation of groups	Inadequate skills and knowledge of facilitators	<i>Medium</i>	<p>Consistency of facilitator training through third party provider.</p> <p>Support network and mentoring of facilitators.</p> <p>Engagement of young consultants' network.</p>	QDAF, NTDITT WADPIRD Management Committee	<i>Low</i>
Group meetings and activities	COVID restrictions make face to face gatherings impossible	<i>Medium</i>	<p>Using alternative virtual platforms.</p> <p>Rescheduling.</p> <p>Planning ahead with inbuilt flexibility.</p>	State & Territory Leaders.	<i>Low</i>



**Appendix 3.**

Activity	Hazards/Risks	Inherent Risk score <small>Refer Risk Matrix</small>	Control Measures <small>Control measures to be selected and applied using the Hierarchy of Control – 1. Elimination -2. Substitution -3.Engineering (preferred ) 4. Admin</small>	Responsibility for Control	Residual Risk (after controls) Score <small>Refer Risk Matrix</small>
			COVID vaccination status of participants assessed.	NB2 Coordination Team	
Working with State & Territory Leaders	Lack of priority by staff leading to long time horizons	<i>Medium</i>	Regular updates and communications across state agencies.  Key P2P pillar leader embedded as Leader.	MLA, NB2 Coordination Team.	<i>Low</i>
Communication with all stakeholders	Misconceptions about the program	<i>Medium</i>	Quarterly Update.  Management committee meetings.  Pillar leader meetings.  Communications plan.  Ensure consent requirements met for all stakeholders.  Ensure participating producers are MLA members.  Annual stakeholder updates including Calf Alive updates.	NB2 Coordination Team.  State & Territory Leaders.  Pillar Leaders.	<i>Low</i>

**Appendix 3.**

Activity	Hazards/Risks	Inherent Risk score  Refer Risk Matrix	Control Measures  Control measures to be selected and applied using the Hierarchy of Control – 1. Elimination -2. Substitution -3.Engineering (preferred )  4. Admin	Responsibility for Control	Residual Risk (after controls) Score  Refer Risk Matrix
Foundational training	Not completed during 2021 to a satisfactory standard	<i>Medium</i>	Flexible and adaptive training to meet group needs.  Review of processes in December 2021.  Internal monitoring and evaluation.  MER process documents and measuring KASA change.  Use virtual platforms as necessary.	NB2 Coordination Team.  P2P Pillar Leader.	<i>Low</i>
Use of live animals for training and demonstration	No AEC approvals in place and inadequate to cover all planned activities using animals.	<i>High</i>	State agencies have AEC approval in place.  Engagement with AHA/ILSC.  Engagement with Corporate group.	MLA.  State & Territory Leaders.  ILSC/AHA.  Corporate group members.	<i>Medium</i>

Appendix 3.

Risk Rating Matrix

The matrix below should be used to identify the overall risk rating for the risk at both inherent and residual level.

			Consequence				
			1	2	3	4	5
			Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood	A	Almost Certain					
	B	Likely					
	C	Possible					
	D	Unlikely					
	E	Rare					

Risk Ratings	
	Low risk
	Medium risk
	High risk
	Extreme risk

## Budget summary for NB2 projects – Jul 2022

	Project (Levy)	Start	Finish	Milestones Completed (all)	Budget (AUD)	Expenditure to date (AUD)
GBP0054	Chair management committee- BeefTech	Aug 2020	Aug2022	1-7 (8)	108,350.00	94,807.00
GBP0055	Needs & gaps analysis	Jun 2021	Feb 2022	1-5 (5)	50,400.00	50,400.00
GBP0056	Co Ordinator - Grazserv	Aug 2020	Feb 2023	1-7 (8)	258,000.00	216,933.19
GBP0058	U-Sucked - NT DITT/UQ	July 2021	Sept 2023	1-4 (5)	191,195.00	169,152.5
GBP0060	Range IQ	July 2022	March 2025	1 (5)	113,000.00	30,327.60
GBP0061	Bush agribusiness	July 2022	March 2024	1-2 (4)	100,000.00	50,000.00

Appendix 4.

<b>TOTAL</b>					<b><u>820,945.00</u></b>	<b><u>611,620.29</u></b>
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	<b>Project (MDC)</b>	<b>Start</b>	<b>Finish</b>	<b>Milestones Completed (all)</b>	<b>Budget (AUD)</b>	<b>Expenditure to date (AUD)</b>
<b>PSH1278</b>	<b>Indigenous partnership – AHA-ILSC</b>	<b>Oct 2020</b>	<b>April 2023</b>	<b>1-5 (8)</b>	<b>536,000.00</b>	<b>279,095.20</b>
<b>PSH1314</b>	<b>Practical Interventions - UQ</b>	<b>July 2021</b>	<b>Oct 2026</b>	<b>1-2(8)</b>	<b>7,858,724.00</b>	<b>1,345,972.00</b>
<b>PSH1324</b>	<b>Producer group aggregations - NABRC</b>	<b>June 2021</b>	<b>Sept 2023</b>	<b>1 (4)</b>	<b>241,920.00</b>	<b>112,000.00</b>
<b>PSH2139</b>	<b>WA pathways to Practice - DPIRD</b>	<b>Sept 2021</b>	<b>April 2024</b>	<b>1-2 (5)</b>	<b>299,608.00</b>	<b>66,877.00</b>
<b>PSH1310</b>	<b>Pathways to practice - QDAF</b>	<b>April 2021</b>	<b>Aug2028</b>	<b>1-3 (5)</b>	<b>2,271,497.00</b>	<b>905,667.00</b>
<b>TOTAL</b>					<b><u>11,207,749.00</u></b>	<b><u>2,709,611.20</u></b>

## A selection of NB2 promotional material



### Northern Breeding Business (NB2)

#### Information for producers

#### NB2 is an initiative developed by MLA to address:

- calf loss in northern breeding herds
- low profitability of many northern beef enterprises
- low adoption of proven management practices and technologies.



The project has set the ambitious target to deliver an estimated \$20 million/year in net benefits by 2027 to 250 northern beef enterprises.

#### NB2 will focus on several key pillars:



##### Herd management

Enhancing breeding herd performance through improved systems and interventions



##### Feedbase

Optimising feed production and supply for the breeding herd



##### Environment

Exploring issues in rangeland management, the environment and the long-term sustainability of the northern beef industry



##### On-farm practice change

Turning R&D outcomes into practice change on-farm

#### Benefits to producers

NB2 will provide multiple benefits to northern producers and the wider beef industry, including:

- a 5:1 return on investment by improving weaning rates, decreasing calf mortality and increasing saleable turn-off weight in northern beef herds
- education, training, mentoring and employment opportunities for people entering or already engaged in the northern beef industry
- improved public perceptions around animal health and welfare, leading to increased consumer trust in Australian beef.

#### Get involved

Six regionally diverse pilot producer groups will be established across northern Australia to provide direction and insight for the NB2 project:

- one group from the Kimberley/Pilbara region of WA
- one group from the NT
- two groups from Queensland.
  - one corporate producer group
  - one indigenous pastoral group.

Producers who currently operate a beef breeding business in the northern Regional Beef Research Committee region and would like further information on how to get involved can contact Nigel Tomkins at [ntomkins@mla.com.au](mailto:ntomkins@mla.com.au).



### FAQs

#### 1. What will I get out of NB2?

##### Professional development around breeder herd efficiency

NB2 will provide producers with a process to identify issues limiting the performance of their breeder herd as well as overall productivity, profitability and sustainability. To address the issues identified, participants undertake training with qualified professionals to ensure they have the knowledge, skills and confidence to implement practice changes suited to their own business.

##### Learn from your peers

Over an initial two-year period, the participants will interact and share ideas with other producers in a group-learning environment to value the collection and use of data and make better management decisions.

##### Understand your business

Over a two to three year period, the NB2 groups will support producers with the implementation and monitoring of herd management plans. Participants will gain a better understanding of their overall business as part of this process.

#### 2. How do I know if I have a reproductive efficiency or calf mortality problem?

Visit [mла.com.au/nb2](http://mla.com.au/nb2) for multiple tips and tools regarding:

- reproductive performance
- heifer management
- calf loss.

#### 3. How much of my time will be involved?

This will be different for each producer. Factors impacting the time involved for each participant include:

- how much a producer wants to get out of the program
- participant's current capital set-up and management program
- interaction with other group members and the facilitator.

There will be several professional development days (in a group-learning environment) a year, over a two to three year period.

#### 4. How much will it cost?

The fee to join an NB2 producer group is up to \$2,000 per business per year (plus GST).

There may also be costs in gathering the required information, depending on the individual's situation. For example, if you're not already pregnancy testing (preferably with foetal aging), this may be an additional expense. Some of the recommended changes could involve capital costs, which will be accompanied by a cost-benefit analysis.



Crush-side data collection is crucial for measuring herd performance and will be a critical part of the NB2 project.

#### More information

For selection criteria and information on how to apply, contact:

Nigel Tomkins  
P: 0437 632 816  
E: [ntomkins@mla.com.au](mailto:ntomkins@mla.com.au)

##### Resources:

- Northern Breeding Business (NB2) research summary at [mla.com.au/nb2](http://mla.com.au/nb2)
- MLA's *Tips & Tools* at [mla.com.au/reproperformance](http://mla.com.au/reproperformance)



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**gives you the following NB2 membership benefits:**

**Producer benefits**

**Associated co-benefits**



**Improved data analysis**

A better understanding of collecting and using data to make more informed business decisions on reproductive performance, new innovations and practice change



**MLA in-kind support**

MLA investments in programs to spread information that will positively impact industry



**Ongoing support**

Access to the NB2 support network across the north



**MLA Donor Company double-up**

For every \$1 in, MDC will contribute \$2 out\*



**Peer-to-peer learning**

The opportunity to learn from like-minded producers and industry professionals



**Value to northern Australian beef**

A healthy industry is good for everyone who is part of it



**Conference access**

Attendance to an annual conference to hear research and development updates from industry leaders



**Return on investment**

Choosing the direction of your investment returns for your business



**Improved education opportunities**

To learn from the 'best in the business' to help improve the productivity, profitability and sustainability of your herd



**State agency investment**

Putting in state agency funds for the benefit of industry

\*The MDC can only operate if sufficient funding is raised within program to support the management, administration and delivery of MDC activities. A project access fee is applied to projects that access Commonwealth funds under the MDC. Industry levy payer partner projects incur an 8% fee for their co-funding access.



