

INDONESIA AUSTRALIA  
RED MEAT & CATTLE  
PARTNERSHIP

**IACCB**  
Indonesia-Australia Commercial Cattle Breeding Program



**INDONESIA AUSTRALIA  
COMMERCIAL CATTLE  
BREEDING PROGRAM  
(IACCB)**

**PHASE ONE  
COMPLETION REPORT**

IACCB is managed under the Indonesia-Australia Red Meat and Cattle Partnership, a joint Australian –Indonesian Government and business sector initiative. Implemented by Coffey, a Tetra Tech company in association with Swisscontact.

# Contents

<b>Executive Summary</b>	<b>vi</b>
<b>1 Introduction</b>	<b>1</b>
1.1 Background	1
1.2 Activity Description	2
1.3 Program Modality	5
1.4 Delivery Approach Challenges and Changes	7
1.5 Key Outputs	9
<b>2 IACCB Stakeholders</b>	<b>11</b>
<b>3 Program Achievements</b>	<b>13</b>
<b>4 Lessons Learnt</b>	<b>17</b>
4.1 Program Management Lessons	17
4.2 What did the industry learn from IACCB?	18
<b>5 Barriers to Scale Up</b>	<b>21</b>

<b>6</b>	<b>Annex</b>	<b>23</b>
<b>Annex 1</b>	IACCB Heifers and bulls distributed	24
<b>Annex 2</b>	Herd status as of December 2018	24
<b>Annex 3</b>	Herd status - Projected stock at the end of Year 10	24
<b>Annex 4</b>	Key Performance Indicators	25
<b>Annex 5</b>	Projected Cattle Breeding Internal Rate of Return (IRR) at Year 10	26
<b>Annex 6</b>	IACCB SISKAs partners forecast of a 5-year herd growth	26
<b>Annex 7</b>	Table of Content of a Project Brief	27
<b>Annex 8</b>	Profile summary of IACCB projects	28
<b>Annex 9</b>	Details of the CVA results of IACCB partners	29
<b>Annex 10</b>	Short Term Technical Advisors (STA) inputs	30
<b>Table 1</b>	Number of enquiries and selected projects	3
<b>Figure 1</b>	IACCB Theory of Change	5
<b>Figure 2</b>	Breeding systems piloted and the partners involved	6
<b>Figure 3</b>	IACCB Program results	9
<b>Figure 4</b>	Division of investments between IACCB and partners	10
<b>Image 1</b>	New-born calves, clean and dry at SPR, East Java	2
<b>Image 2</b>	Ibu Stania, IACCB MES manager discusses performance with PT. CAP	8
<b>Image 3</b>	DFAT staff visit the BKB project, South Kalimantan	10
<b>Image 4</b>	IACCB booth at Indolivestock 2017	11
<b>Image 5</b>	IACCB hosted training on the application of iSIKHNAS with the Smallholder projects	14
<b>Image 6</b>	IACCB experts inspect newly established pastures at BKB to DFAT team	19
<b>Image 7</b>	BKB display their partnering with the Australian Government in South Kalimantan.	20

# Abbreviations

<b>AIPEID</b>	Australia and Indonesia Partnership for Emerging Infectious Disease
<b>ASG</b>	Advisory Services Group
<b>AINI</b>	Asosiasi Ilmu Nutrisi dan Makanan Ternak Indonesia
<b>BB LitVet</b>	Balai Besar Penelitian Veteriner
<b>BCS</b>	Body Condition Score
<b>BKB</b>	Buana Karya Bhakti
<b>BKPM</b>	Badan Koordinasi Penanaman Modal
<b>BNT</b>	Bio Nusantara Teknologi
<b>BPPT</b>	Badan Pengkajian dan Penerapan Teknologi
<b>CAP</b>	Cahaya Abadi Petani
<b>CFO</b>	Chief Financial Officer
<b>CPO</b>	Crude Palm Oil
<b>CVA</b>	Commercial Viability Analysis
<b>DFAT</b>	Department to Foreign Affairs and Trade
<b>DAWR</b>	Department of Agriculture and Water Resources
<b>EOPO</b>	End of Program Outcome
<b>GESI</b>	Gender Equality and Social Inclusion
<b>GOI</b>	Government of Indonesia
<b>IACCB</b>	Indonesia Australia Commercial Cattle Breeding Programme
<b>ILDEX</b>	International Livestock, Dairy, Meat Processing and Aquaculture Exhibition
<b>IRR</b>	Internal Rate of Return
<b>KAL</b>	Kalteng Andinipalma Lestari
<b>KPI</b>	Key Performance Indicator
<b>KPT</b>	Koperasi Produksi Ternak
<b>MES</b>	Monitoring and Evaluation System
<b>MOA</b>	Ministry of Agriculture
<b>MV</b>	Mother Vessel
<b>NTT</b>	Nusa Tenggara Timur
<b>NTB</b>	Nusa Tenggara Barat
<b>P4S</b>	Pusat Pelatihan Pertanian dan Perdesaan Swadaya
<b>PB</b>	Program Board
<b>PPA</b>	Project Performance Assessment
<b>RMCP</b>	Red Meat Cattle Partnership
<b>SA</b>	Sustainability Assessment
<b>SecGen</b>	Secretary General
<b>SISKA</b>	Sistem Integrasi Sapi Kelapa Sawit
<b>SOE</b>	State Owned Enterprise
<b>SO</b>	Service Order
<b>SPR</b>	Sentra Perternakan Raya
<b>STA</b>	Short Term Technical Advisors
<b>SUJ</b>	Superindo Utama Jaya
<b>TOC</b>	Theory of Change
<b>TVJ</b>	Tugu Vanila Jaya
<b>VFM</b>	Value for Money



# Executive Summary

The Indonesia Australia Cattle Breeding Program (IACCB) was designed to assess commercial cattle breeding approaches in Indonesia, that would facilitate investment, innovation and expansion of the Indonesian beef cattle breeding industry. IACCB tested three cattle breeding models; (i) cattle integration with palm oil production - which entails cattle grazing and breeding in an oil-palm plantation, (ii) semi-intensive grazing - which emulates extensive grazing systems during the day, with cattle yarded in the evening, and (iii) cut-and-carry - which reflects the traditional Indonesian husbandry method for smallholder farmers, where feed is cut and carried to yarded cattle. All models have been trialled before in Indonesia, with limited success. IACCB further developed and analysed the models, with the view to conclusively determine if they are commercially viable. The program partnered with private sector firms and smallholder farmer cooperatives who co-invested in cattle breeding projects. The core focus of these projects was to develop commercially viable cattle breeding models suitable for the partner and broader Indonesian operating context.

IACCB received 34 proposals from prospective partners, out of which nine were subsequently chosen. The nine project partners were spread across six provinces on the islands of Sumatra, Java, Kalimantan and Sumbawa. IACCB provided 1,315 heifers and 113 bulls, some infrastructure, and high-quality technical assistance across all projects. The program's technical support was very commercially focussed, with the view to achieving nine Key Performance Indicators (KPIs). Partners agreed to share all project information with industry.

Achieving the KPIs required significant commitment from project partners' in terms of capital, land and labour. Therefore, an important partner selection criterion was commitment to invest in areas such as infrastructure, equipment, cattle, operational costs, and staff time. Ultimately partners invested 46% of total funding. This high level of co-investment ensured active partner participation, which was essential to resolving issues and driving improved performance.

Commercial Viability Assessments (CVA) were carried out on six projects, five of which achieved a result of "Potentially Commercially Viable". All projects are planning to retain part of their cattle to grow their herds, with two projects looking to scale-up further by purchasing additional cattle. Total herd numbers at the end of Phase One were 2,362, an increase of 65%, driven in large part by the provision of high quality IACCB technical assistance focussed on improving weaning rates.

The program has received a two-year extension (Phase Two) until Feb 2021, with each project continuing to receive technical assistance from IACCB until closure. IACCB technical support will however be progressively withdrawn from projects, and alternative service providers sourced, ideally from the private sector. This is particularly important for the smallholder projects, where IACCB support is crucial to their commercial viability.

The achievement of the IACCB - Expansion of the Indonesian beef cattle breeding industry in Indonesia – faces a number of significant challenges. A large increase in Indian buffalo meat in Java has reduced the sale price of cattle, which may negatively impact on the commercial viability of the IACCB breeding models. The industry also has a lack of experienced cattle breeding managers and supervisors, due to its infancy. It also suffers from an absence of suitable vaccines, quality shipping services for inter-island cattle trade, commercial pasture grass seed suppliers, and competent laboratories to analyse feed concentrates. These factors present ongoing challenges to the IACCB projects, and will, if not resolved, place significant limitations on new investment and industry growth.

The IACCB team has established a strong base, from which to focus on, in Phase Two, (1) conclusively determining the commercial viability of the three models, (2) promoting successful models, and (3) increasing awareness within industry and government stakeholders of the barriers to industry growth.

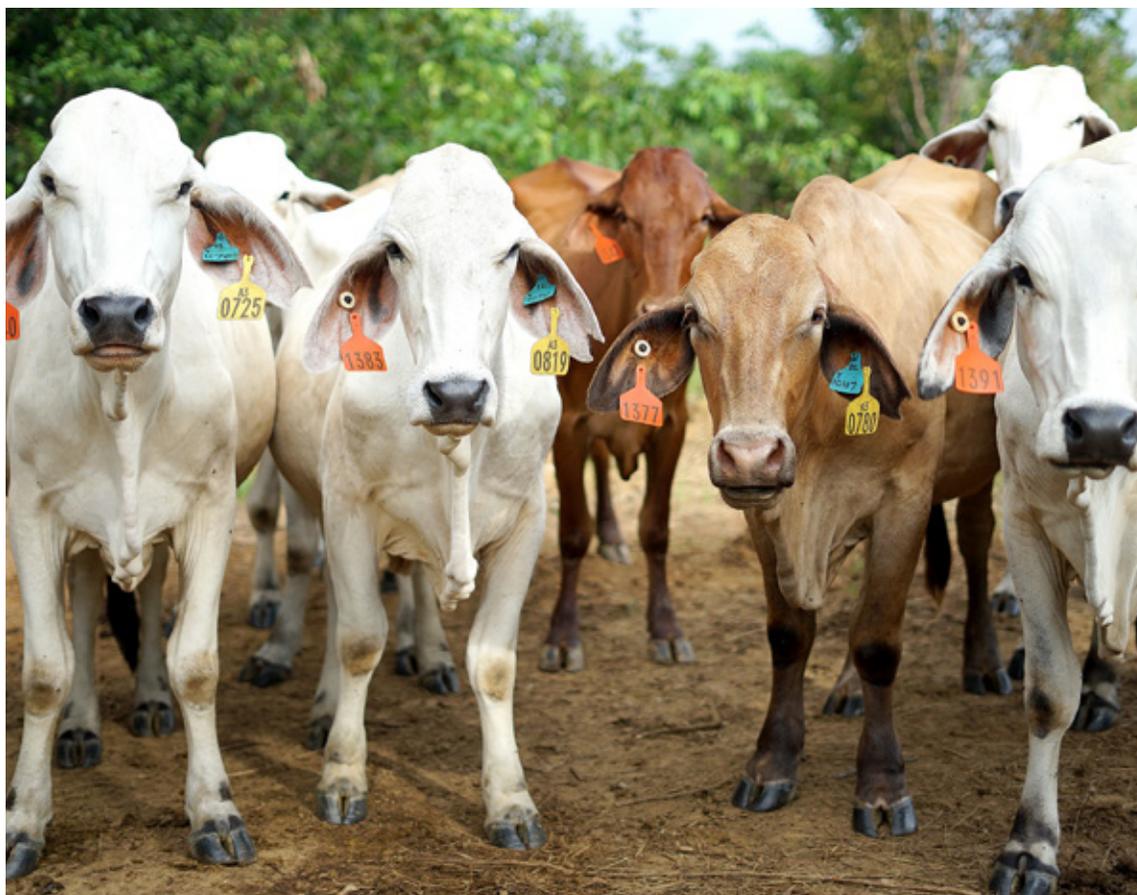


# 1 Introduction

## 1.1 Background

At the second Indonesia Australia Partnership on Food Security in the Red Meat and Cattle Sector (Partnership<sup>1</sup>) meeting in August 2014, a proposal was put forward by the Indonesian members to support a project that tested cattle breeding under oil-palm - Sistem Integrasi Sapi Kelapa Sawit (SISKA), and semi-intensive open ranch grazing, using post-mining, state-owned enterprise and local government land. The Partnership subsequently supported the development of a program design for a three-year Promoting Sustainable Commercial Scale Beef

Cattle Breeding in Indonesia Program, later renamed the Indonesia Australia Commercial Cattle Breeding Program (IACCB). IACCB was endorsed by the Partnership on 21 August 2015. Coffey, in association with Swisscontact, won the tender to manage IACCB implementation from February 2016 to February 2019 (Phase One). A two-year program extension from February 2019 to February 2021 (Phase Two) has been approved. This Report summarizes progress, key achievements, key challenges, and lessons learnt from Phase One.



<sup>1</sup> A DFAT funded Program designed to facilitate improved bilateral trade in the red meat and cattle sector. See - <http://redmeatcattlepartnership.org/>

## 1.2 Activity Description

IACCB implementation was guided by a Scope of Services<sup>2</sup> that outlined key program tasks, outputs and outcomes, summarised below.

### Breeding models

IACCB piloted three breeding models with private sector partners as follows.

1. **Integration with Palm Oil Production** - grazing and breeding cattle in an oil-palm plantation
2. **Semi-Intensive Grazing** - cattle grazing on pastures during the day and yarding them in the evening
3. **Cut-and-Carry**<sup>3</sup> - a traditional Indonesian husbandry method for smallholders where feed is cut and carried to yarded cattle.

IACCB sought to assist their partners to develop and test these models and to quickly bring successful ones to scale. The models were not new but were yet to be conclusively tested in an Indonesian commercial setting.

All required considerable development and analysis, particularly on the management approaches and financial models needed to establish the most efficient means of commercial production. IACCB was designed to deliver on these tasks.

### Objectives

The End of Program Outcome (Goal) of IACCB is as follows:

#### Expansion of the beef cattle breeding industry in Indonesia.

The indicators of success were as follows.

- Demonstrated commercially viable beef cattle breeding business models;
- Demonstrated increase in interest/investment in the sector; and,
- Delivery of a minimum target of 2,100 head of cattle (incorporating 2,000 heifers and 100 bulls) with a minimum 90% realisation rate, of which 100% must be Australian sourced cattle.



**Image 1** New-born calves, clean and dry at SPR, East Java

<sup>2</sup>A contractual document between Coffey and GoA which illustrates how the Program will be carried out.

<sup>3</sup>Also referred to as the Smallholder Model in this document.

## Program Implementation

Program implementation consisted of five components. The components<sup>4</sup> and the associated key outputs from program activities are listed below.

### Component 1: Partner Identification

IACCB actively sourced and solicited proposals from private sector firms. Proposals briefly outlined the nature of the proposed partnership (model, land area and type, infrastructure, staffing, markets, etc.). 34 Proposals were received. Nine were selected to proceed to the Suitability Assessment stage, a detailed information gathering and analysis exercise, including one or more field visits, that comprehensively assessed the suitability of the prospective partner – i.e. their potential to achieve commercial viability. All nine were subsequently chosen as program partners. Partners were spread across six provinces<sup>5</sup> on the islands of Sumatra, Java, Kalimantan and Sumbawa. Annex 8 provides a summary of each partner and project.

Selection Process	Total
Enquires made	75
Proposals received	34
Site Visits conducted	17
Viability models evaluated	10
Suitability Assessments submitted	9
Project Briefs submitted	9
Contracts signed	9

**Table 1** Number of enquiries and selected projects

### Component 2: Negotiating pilot activities

Formal agreements, to cooperate in cattle breeding, based on Project Briefs, were signed by IACCB and partner management or owners. Project Briefs (see Annex 7) detailed IACCB and partner inputs, such as capital and labour, tasks and responsibilities, monitoring and evaluation requirements, KPIs, and a brief exit plan should the project fail.

### Component 3: Activity implementation

The commercial risks and challenges of breeding cattle in Indonesia became clear soon after each project commencement. Partners were allocated heifers and bulls based on their capacity to feed and manage cattle. However, the IACCB team were unable to distribute 2,000 heifers and 100 bulls, as per the services order requirement, due to low partner capacities and associated animal welfare concerns.

The first herd arrived at the BKB project in South Kalimantan on 3 October 2016, eight months after IACCB commencement. SISKAs partners received one heifer per four hectares. Two projects under the Cut-and-Carry model (KPT and SPR) were allocated 100 heifers, to emulate large-scale cooperative models, and one project (P4S) was allocated 20 heifers to emulate a typical Government of Indonesia (GoI) smallholder cooperative. Bulls were allocated at 5% of heifers across all projects. By the end of Phase One, seven<sup>6</sup> projects had received 1,315 heifers and 113 bulls (see Annex 1).

### Component 4: Project Monitoring

IACCB designed a Monitoring and Evaluation System (MES) that could be used by partner staff with minimal cattle breeding experience. The MES is a paper based daily record keeping system that covers all daily activities, including feeding, herd management, productivity, costs such as pasture development and maintenance, labour and feed, and external factors such as weather.

A Project Performance Assessment (PPA) process was established to periodically review all projects. The evaluation criteria, and the process of assessment, reflected a Commercial Viability Analysis (CVA) conducted at the 18-month mark of each project. Partner senior management and owners attended both assessment processes.

The CVA was the most important component of the MES and highly valuable to partners, as it provided

<sup>4</sup> As per the Services Order

<sup>5</sup> Bengkulu, Lampung, East Java, Central Kalimantan, South Kalimantan, and Nusa Tenggara Barat (NTB)

<sup>6</sup> There are a total of nine partners, however one partner TVJ only received technical assistance and one partner P4S received cattle in February 2019. TVJ, on Sumbawa, was eventually cancelled due to an unreliable water supply.

evidence of commercial progress and success. IACCB consulted with Indonesian banks and the Chief Financial Officers of the larger commercial partners when developing the CVA criteria, to ensure criteria were suitable and credible. The credibility of the CVA's and financial models will be essential to attract investors.

Six CVAs have been conducted to date with five projects being assessed as "Potentially Commercially Viable". The sixth project, Superindo Utama Jaya (SUJ), requires more time to prove commercial viability (see Annex 9).

IACCB developed a Financial Analysis Model which forecasts commercial outcomes prior to and during implementation. This model, a valuable IACCB output, will be made available to all potential investors.

IACCB is working with an Indonesian software developer to refine herd management software

to ensure it is locally appropriate. This tool, when completed, will enable new investors to implement a robust herd management system from project initiation, an essential prerequisite for success.

### **Component 5: Activity scale-up and promotion or exit**

IACCB is working with partners to develop Scale-Up Plans which reflect their financial and management capacity and their willingness to expand their operations. All plans are cognisant of each project unique capacities and industry wide barriers to scale-up (see Section 5). A Communications Plan<sup>7</sup> was developed to promote program activities and disseminate lessons learnt, with the IACCB web-site [www.iaccbp.org](http://www.iaccbp.org) a key communication tool. IACCB participated in a number of activities (see Section 1.5) to promote the program.

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<sup>7</sup> The Advisory Support Group (ASG) is responsible for implementing the Communication Plan. ASG is a program funded under the Partnership, co-located in the IACCB office, that provides Project management services to the Partnership.

## 1.3 Program Modality

The IACCB Theory of Change, as illustrated in Figure 1, summarises the assumptions behind the achievement of the IACCB Goal. In short, the IACCB program provides support to its carefully selected partners for piloting a breeding system. The support aims to improve the partner's capacity (knowledge, skills and infrastructure) that results in changes in their cattle breeding and farm management practices. With these changes, and effective monitoring

and recording of data, the partner obtains evidence that the business of breeding cattle is commercially viable. This encourages the partners to further invest in the expansion of their cattle breeding business beyond the pilot phase. IACCB's responsibility is to provide sufficient support to each partner, tailored to their needs, so that their breeding system has a high probability of sustainably achieving nine commercially focussed KPIs.

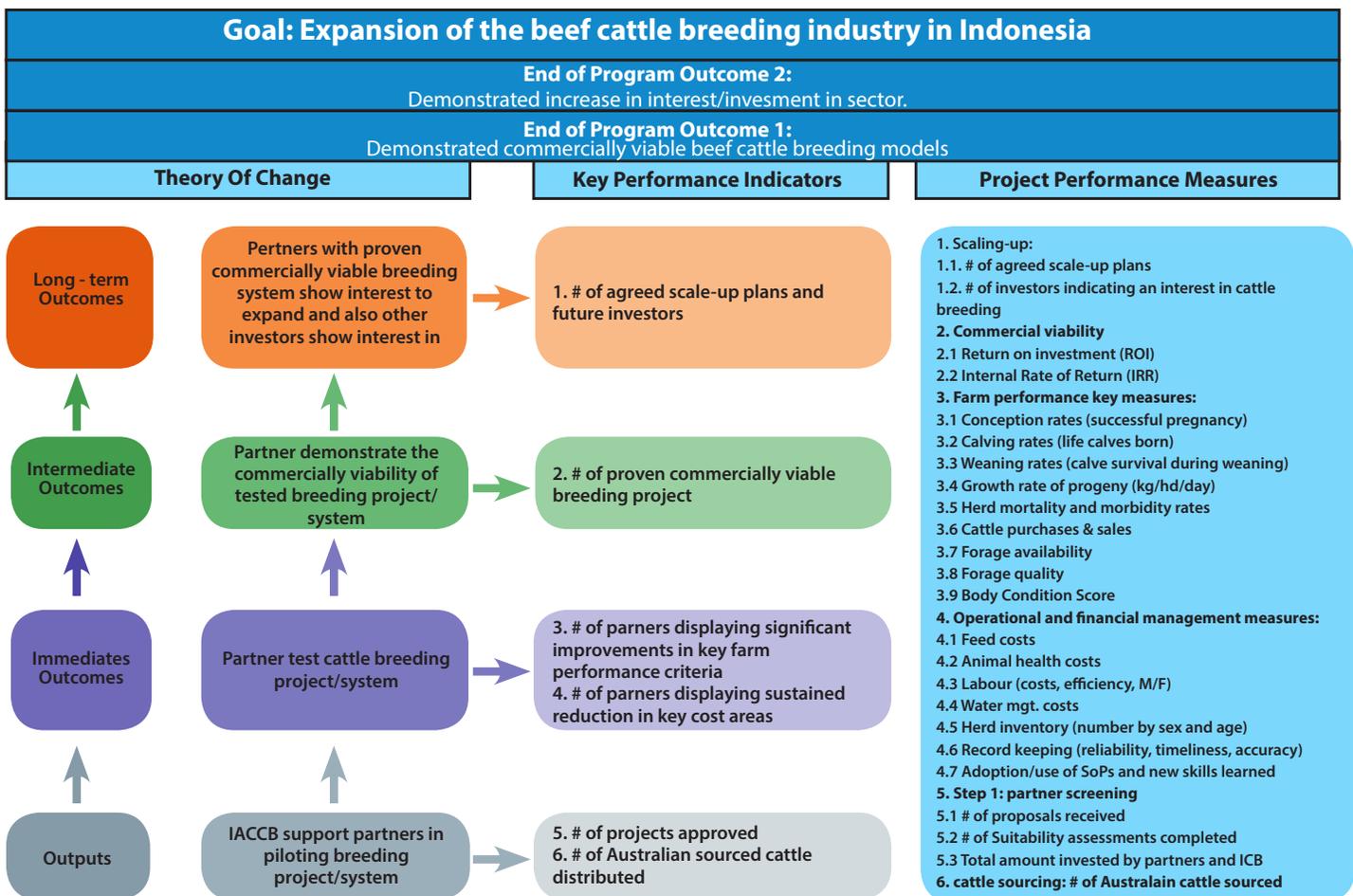


Figure 1 IACCB Theory of Change

The establishment of commercially viable cattle breeding systems required significant commitment from the project partners' in terms of capital, land and labour. Partners, who should be seen as industry pioneers, took on considerable commercial risk, due to the innovative and largely untested nature of the cattle breeding models. This risk was substantially mitigated by the provision, by

IACCB, of high-quality technical assistance, a small but commercial scale cattle herd (heifers and bulls), and some equipment such as a cattle crushes and electric fencing. In response, partners were required to actively participate in, and contribute to, all activities necessary to achieve KPIs, and to sharing with the industry all information related to the project.

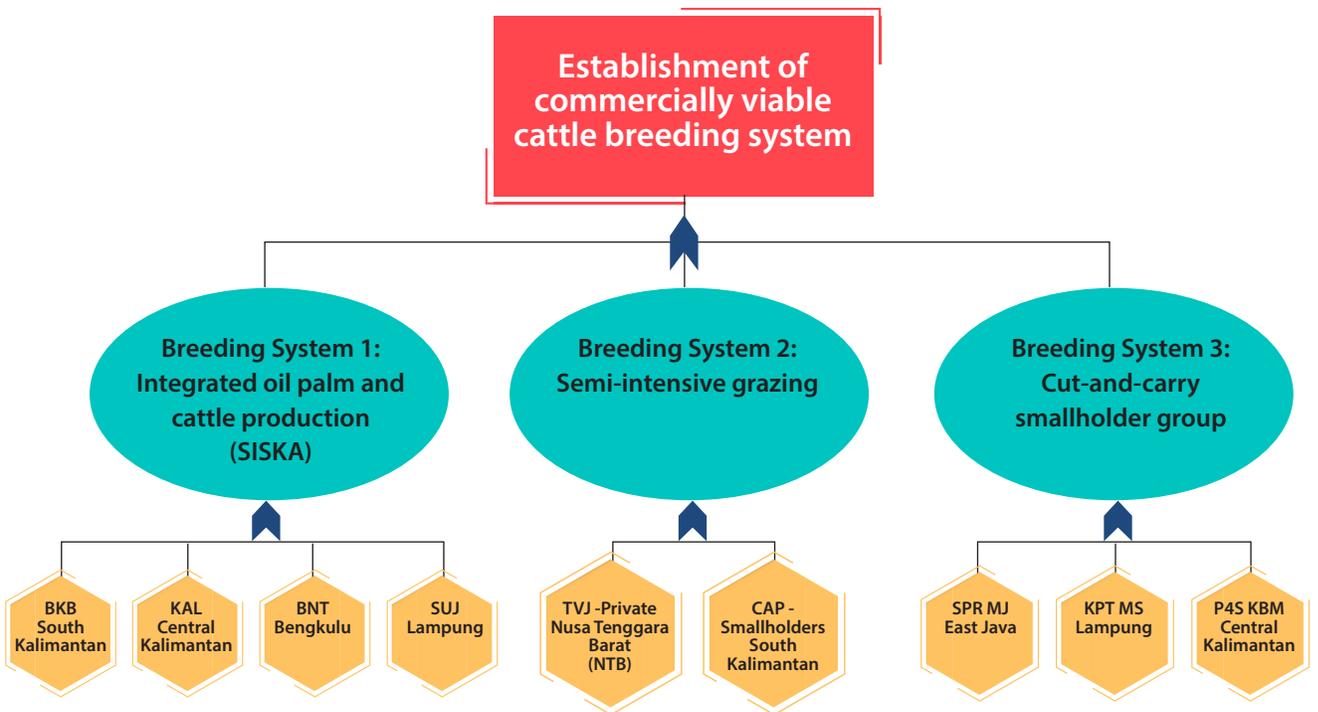


Figure 2 Breeding systems piloted and the partners involved

## 1.4 Delivery Approach Challenges and Changes

The IACCB delivery approach was constantly modified to ensure it was fit for purpose and responsive to emerging implementation challenges. Key changes are outlined below.

### Adjustments to technical resourcing

IACCB started with six program staff and four Short Term Advisers covering herd management, animal health and nutrition, and pasture development and propagation. Soon after each project commencement it became clear that project success rested heavily on the provision of IACCB field support. As a result, four field officers were contracted to work across the eight projects. As each project challenges became clear, adjustments were also made to STA resourcing, with pasture development inputs increasing substantially. Thereafter, field staff and STA inputs were constantly adjusted to ensure an appropriate level of support and oversight for each project, particularly for ones that were struggling.

### Change of pilot locations

The program initially intended to select projects in Eastern Indonesia (Nusa Tenggara Timur and Nusa Tenggara Barat). This however did not eventuate due to issues surrounding cattle transportation. Ships that transported cattle from Surabaya or Jakarta could not meet animal welfare requirements, and due to inefficient inter-island trade, companies did not find it viable to breed cattle in Eastern Indonesia. IACCB explored, with the Maritime Affairs Ministry, the use of a GoI owned cattle transport ship (MV. Camara Nusantara) and provided advice on improvements required to bring it up to recognized cattle welfare standards. ASG has taken forward this discussion and is now exploring potential support via other Partnership projects.

### Cattle distribution targets were not met

To date the program has distributed 1,315 heifers, and 113 bulls, against a contractual requirement of 2,000 heifers and 100 bulls, with a minimum 90% realisation rate. The shortfall was due to two key factors:

1. A lack of quality proposals. From the 34 proposals received over the 15-month period when IACCB actively sourced partners, only nine were selected. Cattle breeding on a commercial scale is seen as high risk and unattractive to most large Indonesian corporates that have the capacity (land, capital, and management) to succeed. Most are waiting to see if the IACCB cattle breeding models are successful, before they invest.
2. The 3-year program time frame was too short. IACCB was required to test the commercial viability of each project within 18 months of project commencement. As a result, the IACCB team had insufficient time to search for additional partners that could manage a large cattle herd.

In year two of the program the IACCB Program Board acknowledged that the distribution of 2,000 heifers and 100 bulls was an arbitrary outcome that was not of critical importance to the testing of the breeding models. Thereafter, the IACCB team prioritised the provision of technical support to selected partners.

### Adaption of the models

The three breeding models were continuously modified in direct response to the challenges and solutions experienced at each site, and the inherent need for flexibility in individual cattle breeding enterprises. Key changes in the IACCB models are outlined below.



**Image 2** Ibu Stania, IACCB Monitoring & Evaluation System (MES) manager discusses performance with PT. BUMP CAP

**Semi-Intensive Grazing:** This model combines breedlotting and the grazing of high yielding crops and grasslands. Actively investing in pasture development was added as it became clear that this was critical to achieving commercial viability.

**Smallholder Cut-and-Carry:** The Cut-and-Carry Smallholder model was introduced because it typifies most smallholder cattle breeding activities in Indonesia and provides significant potential for replication and follow-on investment. One critical weakness in this system, which renders it unviable in many instances, is the high cost of feeding cattle. This includes buying or harvesting grass, that makes up a large percentage of the cattle diet, and the time and labour required to 'cut and carry'. As a result, the following changes were implemented:

a. KPT and SPR, working closely with their surrounding communities, trialled the sub-contracting of forage harvesting, renting land, and bartering (manure for forage). This is proving a

“win-win” for the community and the projects. Local women have particularly benefited through access to employment opportunities (e.g. in pasture development).

- b. Wherever possible, each project is allowing cattle, either cows or weaners, out of the yards to graze.
- c. Income streams were diversified by marketing other goods and services, such as fertilizer, feed concentrates and vegetables, which improved cash flow.

An additional significant weakness of the smallholder cut-and-carry model is the low level of management and technical capacities, which is currently filled by IACCB staff and STAs. An alternative source of technical support will be required for each of these projects. One option is to link with an established commercial company looking to cooperate with smallholders, or with an effective Dinas Peternakan unit, but both are not guaranteed.

## 1.5 Key Outputs

Key IACCB outputs are summarised in Figure 3.

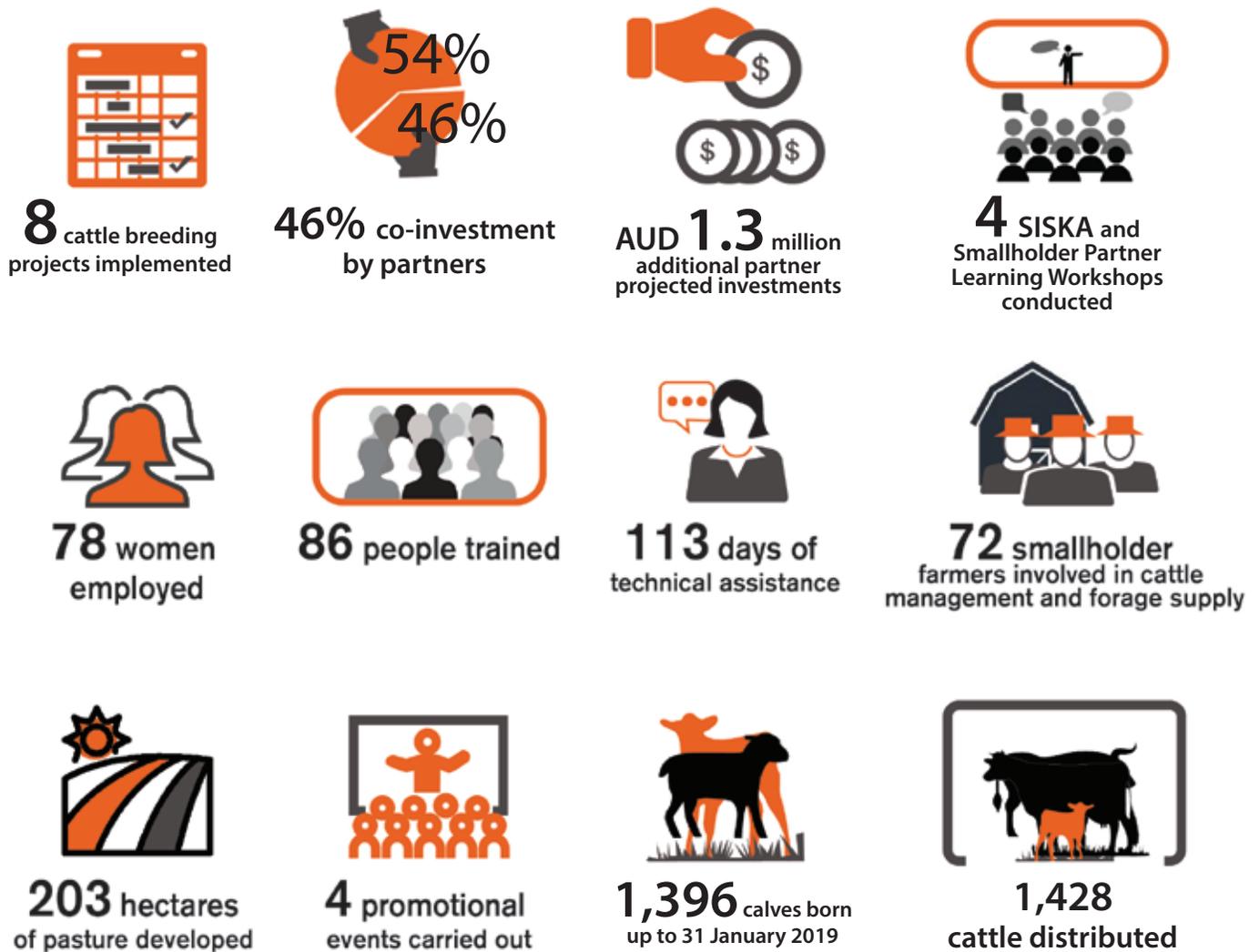


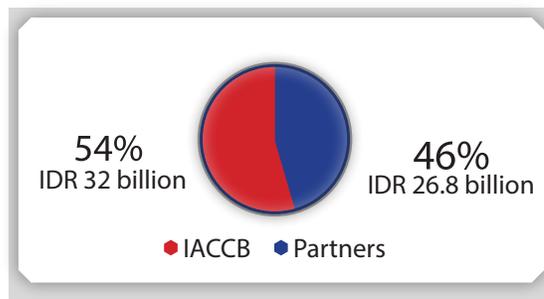
Figure 3 IACCB Program outputs



**Image 3** DFAT staff visit the BKB project, South Kalimantan

## Partner co-investment

A key partner selection criterion was commitment to co-invest in the project, in areas such as infrastructure, equipment, cattle, operational costs, and staff time. Ultimately partners contributed 46% of the total project costs, which was 11% higher than documented in Partner Project Agreements. Of the approximately IDR26 billion invested by partners up to January 2019, approximately IDR14 billion was in infrastructure, including cattle yards, fencing, and farm equipment, with the remainder spent on operational costs such as feed, labour and maintenance. These substantial financial contributions encouraged strong partner staff commitment to their projects, particularly to collaboratively resolving issues in a timely and effective manner.



**Figure 4** Division of investments between IACCB and partners

## Technical Manuals

IACCB is in the process of developing four technical manuals<sup>8</sup> that cover the key functions required to plan for and manage a sustainable breeding herd in Indonesia. The manuals capture IACCB lessons learnt,

are supported by robust data and guidance materials, and are written for investors who have little to no knowledge of cattle breeding in Indonesia. They will be available on-line and in hard copy (for smallholders) and will be a key program output that drives industry investment.

## Peer-to-peer learning

A highly effective IACCB initiative has been to bring together partner staff to on-site SISKA and smallholder workshops. Workshop discussions centred around the critical aspects of cattle breeding and lessons learnt to date within partner cattle breeding operations. Activity based learning and technical sessions provided teams of up to three people per project the opportunity to mix and interact with staff from other cattle breeding models. Participants now communicate and collaborate on an on-going basis, providing a 'go-to-network' for support and sharing after the closure of IACCB.

## Program Promotions

IACCB promoted cattle breeding investment opportunities in Indonesia at events such as IndoLivestock (May 2017); the International Livestock, Dairy, Meat Processing, and Aquaculture Exhibition, ILDEX (October 2017) where IACCB had a booth and conducted a seminar on cattle breeding; LiveXChange (November 2017); and the Organization of Animal Nutritionists (AINI) Workshop (November 2017). At the latter IACCB presented an overview of the program to industry members, local banks and financiers. This AINI organized SISKAs workshop, with an A\$1,000 per participant fee, was indicative of the high level of interest in the SISKAs model. Building upon the work of IACCB, ASG also organised a symposium on cattle breeding in Jakarta in September 2018.

<sup>8</sup> (1) Commercial aspects of breeding cattle; (2) Pasture management; (3) Herd management, with sections on calf management, bull management, weaners and grower cattle management, infrastructure and other farm inputs; and (4) Enterprise Monitoring and Evaluation. The manuals have drawn on and referenced MLA and Livecorp manuals, where applicable.

## 2 IACCB Stakeholders

IACCB is a priority program both for the Australian and Indonesian Governments and has the interest of a broad group of stakeholders, many of whom have played an important role in its success to date, as follows.

### Leadership Team

A Leadership Team, comprised of the Team Leader, Market Systems Director, and Contractor Representative, was established to make collaborative decisions on strategic program issues, and to work together on key documents such as Annual Plans, Progress Reports, and Activity Briefs. To date the Leadership Team has been effective and productive, largely due to their highly complementary skills and knowledge.

### Red Meat Cattle Partnership

The Partnership's interaction with IACCB is largely conveyed through the IACCB Program Board comprised of Partnership representatives from the Indonesia Government (Ministry of Agriculture - MoA and Badan Koordinasi Penanaman Modal – BKPM), the Australian Government (Department of Foreign Affairs and Trade - DFAT, Department of Agriculture and Water Resources - DAWR) and members of the Australian and Indonesian industry.<sup>9</sup> IACCB greatly benefitted from the Program Board's advice, particularly on politically sensitive, strategic and highly technical issues.

IACCB carried out the following activities to ensure effective information sharing with, and guidance from, the Program Board.

- Monthly IACCB update reports in English and



**Image 4** IACCB booth at Indolivestock 2018

<sup>9</sup> The Indonesian and Australian industry members are chosen on their individual knowledge and experience with industry, and not as representatives of industry bodies.

Bahasa Indonesia were sent to all Program Board members and posted on the IACCB website.

- Periodic Program Board tele-conferences<sup>10</sup> were held with DFAT, DAWR, the Australian and the Indonesian industry representatives.
- Monthly personal meetings were held with BKPM and MoA members.

### Ministry of Agriculture (MoA)

The MoA is a key IACCB stakeholder with particular interest in the smallholder model. In the first 12 months of the program the IACCB team found it difficult to engage with MoA. To mediate this, IACCB engaged a MoA retiree (former Echelon 3) as a Gol Liaison Officer, who facilitated IACCB staff to engage directly with the Director General of Livestock (Echelon 1). IACCB also delivered monthly updates to relevant MoA Departments, such as the Breeding, Animal Health and Feed and trialled improvements to MoA's

animal health recording program (iSIKHNAS) which significantly strengthened IACCB's relationship with some MoA directors (see Section 3). IACCB also maintained good working relationships with MoA staff at the project level (District and Provincial Livestock Departments).

### Government Research Institutions

IACCB has engaged two Gol research institutions, Badan Pengkajian and Penerapan Teknologi, to research the impact of cattle grazing on the oil-palm production and Balai Besar Penelitian Veteriner to resolve two animal health issues requiring high level local technical input, namely, the high rate of abortions at BKB and calf mortalities at SUJ. Increases in palm oil production, if confirmed by the research, will be instrumental in encouraging investment in the Indonesian cattle breeding sector in oil palm plantation.

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<sup>10</sup> For the first year of the program monthly and thereafter less often.

# 3 Program Achievements

## Five projects are “Potentially Commercially Viable”

A Commercial Viability Assessment (see Annex 9) has been carried out on six projects. A CVA will be undertaken on CAP in 2019. Five projects achieved a result of “Potentially Commercially Viable” indicating that more time is needed to conclusively determine their commercial viability. All will receive IACCB technical support in Phase Two. SUJ (SISKA) were provided three months to make improvements, prior to another CVA. IACCB support to all projects remains focussed on achieving all nine KPIs.

Although the smallholders (KPT, SPR and CAP) show strong commitment, they would fail without continuing and substantial technical support from IACCB. Replacing IACCB high-quality technical support, post IACCB, with support from local government or via the private sector will be encouraged in Phase Two. It is however unlikely that sufficient and sustainable support will be forthcoming.

## IACCB revitalized previously unsuccessful cattle breeding businesses

All IACCB partners had cattle businesses prior to IACCB that were either struggling or on the brink of closure. Almost all, as evidenced by the CVA process, are on the path to commercial sustainability. Cattle breeding is now seen as an on-going and important component of their business.

## Partners are investing

All projects are planning to retain most heifers and grow their herds, with three projects, BNT, KAL and BKB (SISKA) looking to scale-up by purchasing additional cattle. Additional investments indicate strong partner confidence in the models, and the value of IACCB technical support. A BNT manager stated “IACCB

*expertise gave us assurance that we were moving in the right direction and confidence to increase our investments in the business”. As a result of recent downward price movements in the crude palm oil, and an uncertain long-term outlook, other SISKA partners will likely not purchase more heifers in the short-term but will focus on growing their existing herds.*

## Herds have grown by 65% and KPIs look promising

Herd numbers have increased by 65% (see Annex 2) driven in large part by the provision of IACCB technical assistance that focussed on improving weaning rates. Projects had 157 mortalities<sup>11</sup> and 265 cattle were culled or sold by the partners.<sup>12</sup> Projects are maintaining important KPIs (see Annex 4) through the important second pregnancy calving period.

## IACCB is reducing private sector risk

In general, Indonesian companies view cattle breeding as a business that is capital intensive, high risk, and with minimal returns. IACCB is providing evidence that the risks can be managed and breeding cattle can be profitable. Practical “how-to” guidance in the form of the cattle breeding manuals, robust financial models, forecasting tools, and an Indonesia-centric Herd Management Software, will soon be available to investors. All will be essential to encourage investment, circumvent potentially serious mistakes, and create realistic investor expectations.

## IACCB increased smallholders’ incomes

The two cut-and-carry smallholder groups, KPT and SPR, achieved improved incomes from their cattle breeding enterprises. The Heads of the Gol Districts Livestock offices have been inspired by the success of the IACCB program and its positive community

<sup>11</sup> Low farmer diligence resulted in mortalities in year one and the mortality increase in year two was due to the onset of heavy rains in the wet season.

<sup>12</sup> Culling was carried out as required and approved by IACCB team for various reasons such as infertility, sickness or injury.

impact, and some are now implementing strategies to roll out lessons learnt. IACCB technical support has however been crucial in overcoming serious capacity constraints and in driving success. Smallholders still struggle to mobilise the financial resources required to sustainably run their cattle breeding operations.

### **IACCB improved iSIKHNAS**

Establishing an effective and sustainable herd management recording system proved challenging. iSIKHNAS, a Gol initiative, that benefits from on-going government support, is potentially, a viable and sustainable option. iSIKHNAS was initially established by the Gol to record individual cattle health issues. It therefore required further development and testing to ensure its application as an effective herd management tool. Over two years, IACCB worked with the MoA to modify the program so that it included the recording of herd condition or "Group Body Condition Score". This

improved software was trialled in KPT and thereafter in SPR and CAP, with all smallholders receiving training in its application. iSIKHNAS is now planned to be used as a Gol monitoring tool at the district, provincial and central level, providing access to farmer group cattle herds status, health and welfare. This would allow stakeholders such as the MoA and Ministry of Health, to monitor herd condition, and broad scale breeding programs in Indonesia, in real time, a considerable advance from the first iSIKHNAS versions.

### **IACCB increased employment opportunities for women**

IACCB assessed the opportunities and constraints to the inclusion in projects of women, people from the local community, and people with disabilities. All project senior management agreed to encourage women's employment, particularly in tasks associated with herd health, calf management and administration.



**Image 5** IACCB hosted training on the application of iSIKHNAS with the Smallholder projects

For example, a female director in BNT highlighted the need for, and thereafter supported the funding of, additional security measures in their oil palm plantation in Bengkulu, which encouraged more local women to work in their cattle breeding operation. Local women have gained employment (78 in total) in every IACCB project in pasture development (casual roles in nursery maintenance and pasture propagation), animal health and administration (permanent roles). As each project and the industry grows there will be greater employment opportunities for women in areas such as veterinary and feed nutrition services.

### **IACCB Effectively Managed Cattle Welfare**

A serious risk to the program, and to the reputation of the GoA, was that the program could not maintain cattle health and or welfare. This risk was managed by the provision of high quality and timely advice to project partners, particularly by competent and available field staff. IACCB also maintained a continual focus on Body Condition Score (BCS), which IACCB used as a proxy for animal welfare and productivity. All communications with partners commenced with a discussion of their herd BCS report and all efforts were targeted at maintaining or exceeding the BCS KPI. All partners now see the link between a healthy and happy cow, and profit.

Cattle welfare could have been severely compromised by their delivery to project sites that entailed three sea crossings (from Australia to Kalimantan, via Lampung and Java) and three truck journeys, all of which took over seven days. No injuries or mortalities occurred due to the IACCB team's very strong oversight of transport service providers.

### **IACCB introduced innovations**

Due to high rainfall, macro and micro mineral feed deficiencies were negatively impacting on IACCB herd conception rates, particularly in the SISKA models. In response, IACCB developed a feed formulation that was relatively cheap to procure and simple to mix. This is now established practice in all IACCB projects. Projects can now maintain herd BCS and as a result meet conception rate KPIs.

Another innovation included the modification of fertilizing oil-palm trees into one that also assisted grass growth. Instead of fertilizing the trees manually, a fertilizer spreader was used behind a tractor. Significant savings have been achieved in labour costs, and there is now better growth and improved quality of grass. High quality pasture establishment, previously unheard of in oil-palm plantations, has now been eagerly taken up by all SISKA partners.

### **IACCB supports Gol policies**

The 10-year projection for IACCB projects sees the expansion of the current herd of 2,362 head to 6,062 (see Annex 3). The Indonesian herd will also be expanded through additional private sector investments in one or more IACCB breeding models. The program may also provide information and lessons learnt that encourage feed lotters to comply with and take advantage of the 5:1 policy.<sup>13</sup> Feed lotters, for example, may see from the efforts of IACCB, that partnering with smallholder farmer co-operatives in the breeding of cattle, is a viable commercial opportunity. Consequently, IACCB is directly supporting Indonesia's policy of beef self-sufficiency<sup>14</sup> by increasing the Indonesian beef cattle herd. This policy has been a major priority for the Gol for several years, hence IACCB remains highly relevant.

<sup>13</sup> This policy stipulates that the feed-lotter is obliged to import one breeder for every five feeder cattle they import.

<sup>14</sup> Undang-Undang Nomor 41 tahun 2014 tentang Peternakan dan Kesehatan Hewan; Keputusan Menteri Perdagangan Republik Indonesia Nomor 699/M-Dag/Kep/7/2013 tentang Stabilisasi Harga Daging Sapi Peraturan Menteri Pertanian Republik Indonesia Nomor 02/PERMENTAN/PK.440/2/2017



MUHAMMAD HUSNI TAMRIN

BUMP PT. CAD

# 4 Lessons Learnt

## 4.1 Program Management Lessons

### Project Briefs and Suitability Assessments were key to success

The detailed and comprehensive nature of Suitability Assessments, conducted by a technically competent IACCB team, was key to the selection of appropriate partners. Project Briefs (see Annex 7), jointly developed with partners, provided a detailed blueprint for delivery, and nine high relevant commercially focussed KPIs. KPIs were monitored and assessed on a weekly basis, and via the Project Performance Assessment process. Cattle breeding in Indonesia is a complex and high-risk venture. Suitability assessment and project briefs provided the minimal due diligence required for success.

### Establishing trust, upfront, with partners, was essential

In all projects, IACCB met or exceeded partner expectations from the outset. This served to establish credibility and trust, which thereafter allowed a highly collaborative and innovative approach to project delivery, which was essential to project success. This could not have occurred without a highly competent Team Leader, STAs<sup>15</sup>, and field staff, who have expertise in cattle management, years of Indonesian cattle industry experience, and established industry networks. They provided timely access to key stakeholders such as prospective partners, and goods and services (trucking, veterinary care, local cattle supply, seed), and the collaborative development of feasible solutions to the many cattle breeding challenges that arose. Importantly, the Team Leader had 25 years of Indonesian commercial cattle industry experience. This provided the team with instant credibility and networks, particularly within large

private sector firms. It is unlikely the program would have partnered with its current strong suite of partners, that include large Indonesian companies, without the Phase One Team Leader.

### Project Performance Assessments and KPIs drive performance improvements

From each project commencement, nine commercial targets (KPIs) were established, and thereafter consistently and collaboratively monitored. These KPIs facilitated practical and targeted discussions, as they covered the key requirements for commercial viability, and were highly relevant to each partner. KPIs also provided a very clear framework to gauge commercial progress, and evidence to justify decisions and investments.

The Project Performance Assessment process, conducted quarterly, and prior to the Commercial Viability Assessments, allowed partners and IACCB staff to reflect deeply on key issues and their resolution, and project successes, both of which motivated partners to continue to invest and innovate.

### Cattle and co-investment provided substantial leverage

Partnership members believed that IACCB success was dependent on partnering with large and financially strong private sector firms. The key challenge was how to effectively engage with firms who had firmly established operations and were used to operating very independently. The attraction of being rewarded with cattle at the end of the project, if commercial sustainability was achieved, and the possibility of cattle being removed if not, or if cattle welfare issues were not resolved in a timely manner, proved very effective. This, together with the high rates of partner investments in each project, provided leverage for the IACCB

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<sup>15</sup> Refer to the Annex 10.

team to engage intensely with staff and workers, and encouraged partner management to adequately resource the project (e.g. staff, feed, infrastructure), and to provide access to all relevant data.

## **4.2 What did the industry learn from IACCB?**

### **Australian Brahman cattle can breed in Indonesia**

Prior to IACCB there was conjecture in some circles (small farmers and the Gol) that Australian Brahmans are not successful breeders in Indonesia. Indeed, many past programs that granted Australian Brahman heifers to smallholders have failed, evidenced by the fact that the cattle did not return to pregnancy after their first calf. IACCB projects have been able to achieve very strong average calving intervals, currently at 13.5 months<sup>16</sup>. Within local Gol circles, this news has been very positively received. IACCB has provided evidence that with good management, Australian Brahmans can be bred in Indonesia, with positive commercial outcomes.

### **Competent staff are essential to commercial viability**

There has never been a vibrant commercial scale cattle breeding industry in Indonesia. As a result, there are very few Indonesians with long term experience in cattle management. IACCB projects, with at least one competent staff member, and committed and engaged management, experienced few issues that threatened commercial viability. However, where staff and workers had no experience, viability was always uncertain and commercial risks were significantly magnified.

### **Data management and analysis drives commercial improvements**

IACCB aims to encourage investment in the Indonesian cattle breeding sector by robustly testing the commercial viability of its three breeding models. It did this by providing targeted technical assistance to projects that focussed on driving herd productivity and cost efficiency, and the maintenance of robust data sets, accurate record keeping, and data analysis. As a result, project and IACCB staff were able to analyse progress and make considered decisions to resolve, what were often complex challenges, in a timely and effective manner.<sup>17</sup> This process of identifying and solving cattle breeding issues through data analysis also significantly improved staff capacities over the life of each project.

### **Purchasing pregnant heifers is a good start**

IACCB will be recommending that investors buy pregnant heifers to guarantee the introduction of fertile heifers. An additional advantage, particularly for smallholders, is the earlier cash flow due to early calving. Pregnant heifers will be more expensive than empty heifers, however this price differential is offset by increased herd fertility.

### **Importance of maintaining the BCS of herds**

All projects have experienced the unrelenting focus of the IACCB team in maintaining a herd BCS of >2.6, and several have experienced its positive impact, shorter calving intervals. All now understand that maintaining herd BCS is essential to commercial viability.

<sup>16</sup> Local cattle in Indonesia have calving intervals at best 17 months with many above 20 months.

<sup>17</sup> For example, data showed an increased profit margin driven by a reduced Cost of Weight Gain in grower cattle. As a result farmers saw the value in the concept of Cost of Gain, and now fully appreciate the benefits of precise record keeping.



**Image 6** IACCB experts inspect newly established pastures at BKB

### **Quality pasture is key**

In all projects, cattle required varying levels of feed supplementation, at varying levels of expense. To be competitive with Australian feeder cattle, the cost of grazing cows, and growing young and yearling cattle, must be low. This can only be achieved, long term, by developing high protein pastures.

### **Achieving weaner growth rate KPIs requires focus**

Partners have learnt that they can achieve low calving intervals and low calf mortalities, but that weaners will not grow well without concerted effort. All necessary measures, such as providing creep feed to calves in preparation for weaning, weaning on to high quality pastures, and providing energy supplements to grazing weaners, must be implemented if required weaner growth rates are to be achieved.

### **Planning the right approach to marketing is important**

Each project has unique opportunities and challenges for the marketing and sale of their cattle. A lack of consideration to this issue may see cattle sold more cheaply than necessary. Each partner is now aware that they need to invest time to understand and develop market opportunities. For example, some smallholder projects achieved considerably higher prices than budgeted due to selling during Idul-Adha.

### **Smallholders need access to high quality support**

IACCB has shown that smallholders, with substantial support, can manage more commercial scale herds. For example, SPR and KPT have significantly improved their skills in breeding Australian Brahman cattle. Local GoI staff now have greater confidence in the smallholder model, a message conveyed to the MoA on several occasions.

The smallholder projects do however suffer from inadequate capacities, particularly around management and leadership. It is highly likely that external management and technical support will be required if commercial viability is to be sustained post IACCB. Institutional capacities, such as management and staff skills, feed supply, cash flow, and ability to access funds, service providers, and vaccines, will need to be heavily scrutinized, and deemed adequate, prior to commencing any smallholder project. Issues outside of the cattle breeding business, also need to be analysed. For example, women support their smallholder farmer husbands by taking care of their family, feeding their existing livestock, and via outside employment. This work is instrumental to the success or failure of the smallholder model, which often takes men away from their normal income generating activities.

## Integrating cattle and palm management is the key to success

Oil-palm plantations employ large numbers of staff and workers. The rigid structures established to manage them have been in place and fine-tuned over decades. Their rigidity presents a challenge when introducing cattle breeding, which requires changes to daily palm management routines and processes. Consequently, each plantation experienced varying levels of commitment to the cattle breeding project. Plantation management commitment to integrated cattle breeding and palm-oil management was the greatest factor determining the success of Siska projects. Integrated systems could most effectively



Image 7 BKB display their partnering with the Australian Government in South Kalimantan.

achieve synergies such as decreased herbicide use as a result of grazing cattle, and increased cattle production, as a result of improved pastures. Early research data suggests that a 10 to 15% increase in yield of fresh fruit bunches can be achieved through introduction of cattle in palm plantations. IACCB is working with Badan Pengkajian dan Penerapan Teknologi (BPPT)<sup>18</sup> to conclusively answer this question. A positive commercial impact will be instrumental in encouraging industry to adopt the SISKKA model.

## **Prepare the site prior to cattle arriving**

The relatively short time frame of IACCB, and the initial need to deliver results within 3 years, resulted in the premature placement of cattle on project sites. The IACCB team and project partners now realise that at least six months is required to prepare the business prior to the arrival of cattle. Critical preparatory steps include pasture development; staff and management training; identifying sources of feed supplements and ration formulation; establishment of animal health kits including antibiotics, vaccines and other veterinary essentials; provision of access to professional veterinary services for more demanding animal health issues; and, for SISKKA models, modification of standard operating procedures so that oil-palm and cattle processes are fully integrated, and staff and management are trained in their application.

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<sup>18</sup> BPPT is a well-recognised GoI research organization and will ensure the credibility (quality independence) of the research results

# 5. Barriers to Scale Up

The Achievement of the IACCB Goal - Expansion of the Indonesian beef cattle breeding industry in Indonesia – faces a number of significant challenges, as follows.

## Lack of vaccines

Vaccinating cattle against potential health risks<sup>19</sup> should be a standard risk management task for all cattle breeding business in Indonesia. Unfortunately, the Gol vaccine registration and importation process is prohibitively burdensome for animal health companies. As a result, Indonesian farmers do not have access to some critical vaccines.

## Influence of Indian Buffalo Meat on cattle prices

Indian Buffalo Meat is now pervading markets in Java and reducing sale prices of cattle. This is reducing cattle prices in Sumatra and other islands that normally sell cattle to markets in Java. This may negatively impact on the commercial viability of the IACCB breeding models and dissuade new investment.

## Lack of expertise and experience

New investors will struggle to find competent managers and supervisors, presenting a critical barrier to investment. Industry growth is highly dependent on adequate staffing and this, in part, is dependant on-going educational programs for enthusiastic cattle entrepreneurs and staff. However, at present, documented knowledge of breeding cattle on a commercial scale in Indonesia is unavailable, limiting educational opportunities for unskilled staff. The dissemination of IACCB Cattle Breeding Manuals will, to a large extent, fill this gap.

## Inefficient infrastructure

The inter-island cattle trade is plagued by high costs, driven by a lack of quality shipping services. The cattle breeding potential of Eastern Indonesia and Kalimantan will not eventuate if these inefficiencies are not addressed. The new Gol owned livestock vessels (Camara Nusantara 1 to 6) are a good start, however effective management is also required. Poor management is resulting in cattle weight loss, mortalities and injuries, and these costs are currently being borne by farmers.

## Lack of quality pasture seeds

As discussed above, IACCB results to date suggest that pasture development is a critical prerequisite to commercial viability. However, commercial grass (shade tolerant, vegetative and seed) suppliers are very limited, affecting supply and the varieties available. The overly burdensome Gol process required to import superior varieties (customs, quarantine) discourages new suppliers.

## Access to professional laboratories

Cattle breeders need to have a clear understanding of what they are feeding their cattle, and how to address macro and micro-nutrient deficiencies. This requires access to credible laboratories that can quickly analyse feed concentrates. Most laboratories in Indonesia are Gol operated, which are either overloaded with work, and therefore untimely in their response, or they lack the skills and systems to guarantee accurate results. Offshore alternatives are considerably more expensive.

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<sup>19</sup> Leptospirosis, parasites, 3-day sickness, Bovine viral diarrhoea, Infectious Bovine Rhinotracheitis, pneumonia and Vibriosis

# 6 Annex

<b>Annex 1</b>	IACCB Heifers and bulls distributed
<b>Annex 2</b>	Herd status as of December 2018
<b>Annex 3</b>	Herd status - Projected stock at the end of Year 10
<b>Annex 4</b>	Key Performance Indicators
<b>Annex 5</b>	Projected Cattle Breeding Internal Rate of Return (IRR) at Year 10
<b>Annex 6</b>	IACCB SISKAs partners forecast of a 5-year herd growth
<b>Annex 7</b>	Table of Content of a Project Brief
<b>Annex 8</b>	Profile summary of IACCB projects
<b>Annex 9</b>	Details of the CVA results of IACCB partners
<b>Annex 10</b>	Short Term Technical Advisors (STA) inputs

**Annex 1** IACCB Heifers and bulls distributed

Cattle	BKB	KAL	BNT	SPR	KPT	SUJ	CAP	P4S*	Total
Heifers/Cows	300	250	246	100	100	196	103	20 <sup>20</sup>	1,315
Bulls	30	25	22	5	6	14	11	0	113
<b>Sub-total</b>	<b>330</b>	<b>275</b>	<b>268</b>	<b>105</b>	<b>106</b>	<b>210</b>	<b>114</b>	<b>20</b>	<b>1,428</b>

\* P4S received 20 pregnant heifers in February 2019

**Annex 2** Herd status as of December 2018

Cattle	BKB	KAL	BNT	SPR	KPT	SUJ	CAP	Total
Heifers/Cows	275	224	253	73	98	173	102	1,198
Bulls	25	21	26	4	6	14	10	106
Calves (0-3m)	126	58	57	29	63	46	7	386
Weaner (4-5m)	0	0	113	6	15	13	33	180
Grower (≥ 6m)	165	152	20	17	0	105	33	492
<b>Sub-total</b>	<b>591</b>	<b>455</b>	<b>469</b>	<b>129</b>	<b>182</b>	<b>351</b>	<b>185</b>	<b>2,362</b>

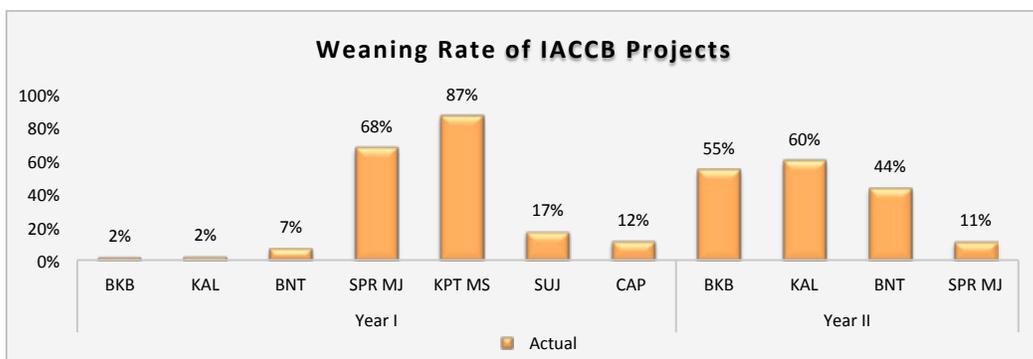
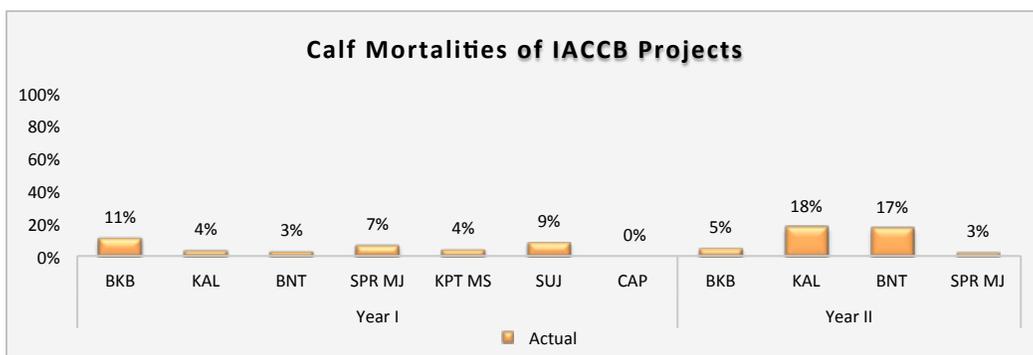
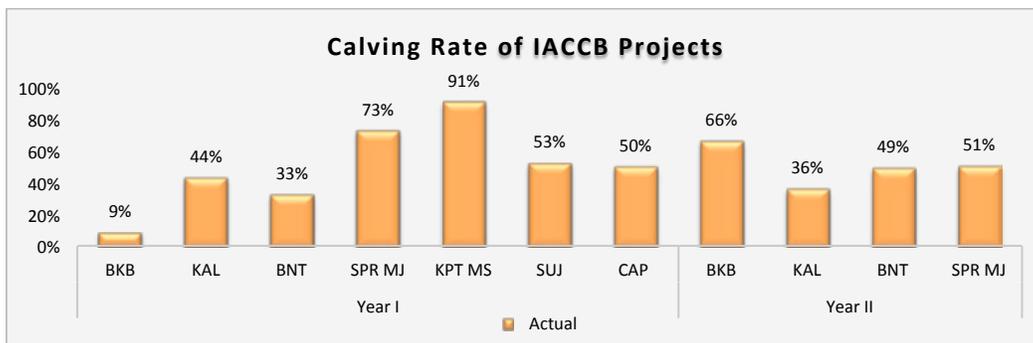
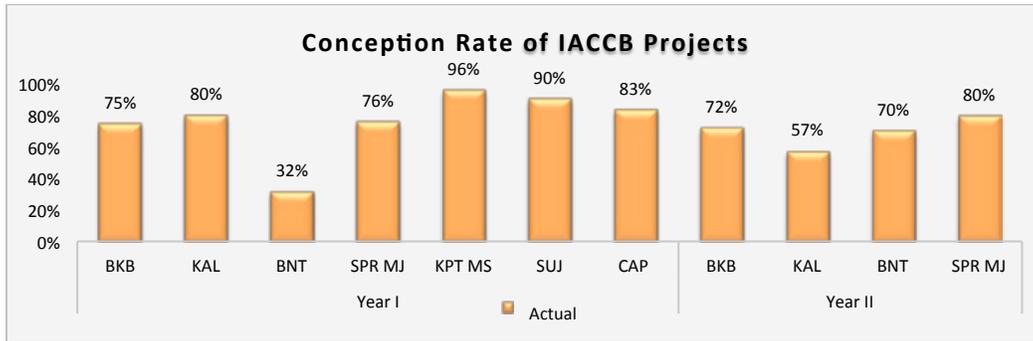
**Annex 3** Herd status - Projected stock at the end of Year 10

Partner	Calves that will be born	Growers that will be sold	Closing stock Year 10
BKB	3,144	2,052	1,095
KAL	3,350	1,579	1,440
BNT	2,223	1,919	480
SPR	769	478	185
KPT	966	755	234
SUJ	5,142	2,766	2,232
CAP	840	454	318
P4S*	282	164	78
<b>Total</b>	<b>16,716</b>	<b>10,167</b>	<b>6,062</b>

\* P4S received 20 pregnant heifers in February 2019

<sup>20</sup> The cows for P4S will only be delivered in February 2019

**Annex 4** Key Performance Indicators



**Annex 5** Projected Cattle Breeding Internal Rate of Return (IRR) at Year 10

Partner	IRR Target	Commercial Viability Assessment Result
<b>BKB</b>	6.14%	8.68%
<b>KAL</b>	3.14%	6.69%
<b>BNT</b>	18.67%	5.70%
<b>SPR</b> <sup>21</sup>	11.80%	9.81%
<b>KPT</b> <sup>22</sup>	18.83%	9.74%
<b>SUJ</b>	4.64%	6.04%
<b>CAP</b> <sup>23</sup>	10.13%	7.55%
<b>P4S</b> <sup>24</sup>	8.20%	n.a

**Annex 6** IACCB Siska partners forecast of a 5-year herd growth

IACCB Partner	Herd size 2019	Herd size 2023	Strategies recommended by IACCB	Strategies likely to be implemented
<b>BKB</b>	591	1,388	Aim for rapid herd growth by: <ul style="list-style-type: none"> <li>• Adding 200 head heifers by 2020</li> <li>• Retaining 80% heifers annually</li> </ul>	<ul style="list-style-type: none"> <li>• Retain 80% heifers</li> <li>• Purchase 300 pregnant heifers over 2 years (2020/21)</li> </ul>
<b>KAL</b>	455	1,116	Aim for rapid herd growth by: <ul style="list-style-type: none"> <li>• Purchasing an additional 100 head of heifers by 2020</li> <li>• Retaining 90% heifers annually</li> </ul>	<ul style="list-style-type: none"> <li>• Sustained growth but capital light (90% heifer retention)</li> <li>• Increased usage of the plantation</li> </ul>
<b>BNT</b>	469	1,500	Aim for controlled herd growth by: <ul style="list-style-type: none"> <li>• Retaining 80% heifers annually</li> <li>• Additional Plantation with intent to integrate cattle</li> </ul>	<ul style="list-style-type: none"> <li>• Controlled herd growth at current site by retaining 50% heifers annually</li> <li>• Expanding grazing area under palm with 300 heifers as base herd</li> <li>• Fully integrate palm oil and cattle management</li> </ul>

<sup>21</sup> smallholders' project

<sup>22</sup> Ibid.

<sup>23</sup> Ibid.

<sup>24</sup> Cattle were not yet delivered at end of Phase 1

**Annex 7** Table of Content of a Project Brief

Contents	
1. Purpose of the Project Brief Purpose of the Project Brief	3
2. Project Profile	3
3. Project Scope	3
4. Commercial Viability	5
5. Detailed Tasks	7
6. Training Plan	9
7. Monitoring and Results Measurements	9
8. Exit Strategy	11
9. Asset Disposal Plan	12
Annexes	
Annex 1: IACCB work Plan	
Annex 2: Project Risks	

Annex 8 Profile summary of IACCB projects

Project	Partner	Breeding System	Province	Cattle Delivered		
				Received Cattle <sup>25</sup>	Number	Total
1	Buana Karya Bhakti (BKB)	SISKA	South Kalimantan	Oct '16	300 Heifers	300 Heifers 30 Bulls
				Dec '16	12 Local bulls	
				Jan '17	8 Imported bulls	
				Aug '18	10 Imported bulls	
2	Kalteng Andinipalma Lestari (KAL)	SISKA	Central Kalimantan	Nov '16	200 Heifers	250 Heifers 25 Bulls
				Dec '16	9 Local bulls	
				Feb '17	50 Heifers	
				6 Imported bulls		
				Aug '18	10 Imported bulls	
3	Bio Nusantara Teknologi (BNT)	SISKA	Bengkulu	Jan '17	246 Heifers	246 Heifers 22 Bulls
				13 Imported bulls		
				Jul '18	9 Imported bulls	
4	Sentra Peternakan Rakyat - Mega Jaya (SPR MJ)	Cut and carry - smallholder group	East Java	Jan '17	100 Heifers	100 Heifers 5 Bulls
				3 Imported bulls		
				Apr '17	1 Imported bulls	
				Aug '18	1 Imported bulls	
5	Koperasi Produksi Ternak Maju Sejahtera (KPT MS)	Cut and Carry Smallholder - smallholder group	Lampung	Apr '17	100 Heifers	100 Heifers 6 Bulls
				5 Imported bulls		
				Jul '18	1 Imported bulls	
6	Superindo Utama Jaya (SUJ)	SISKA/ Breedlot	Lampung	Apr '17	196 Heifers	196 Heifers 14 Bulls
				10 Imported bulls		
				Jul '18	4 Imported bulls	
7	Tugu Vanilla Jaya (TVJ)	Semi intensive grazing - Private	NTB	Technical Assistance Only		
8	Cahaya Abadi Petani (CAP)	Semi intensive grazing - Smallholder	South Kalimantan	Aug '17	103 Heifers	103 Heifers 11 Bulls
					8 Imported bulls	
				Aug '18	3 Imported bulls	
9	P4S Karya Baru Mandiri (KBM)	Cut and Carry Smallholder - smallholder group	Central Kalimantan	20 heifers delivered Feb 2019		

<sup>25</sup> Marks Project commencement, which is taken from when receiving cattle. This is with the exception of the TVJ (Project 7) who are procuring cattle themselves.

Annex 9 Details of the CVA results of IACCB partners

No. Criteria	Indicators	Descriptions – Scoring System	Weighting 1-3 (3 most important to sustainability)	Final Score					
				BKB	KAL	SPR	BNT	KPT	SUJ
1	<b>Body Condition Score (BCS):</b> Average % of cows with BCS $\geq 2.6$ in the last three months	1: < 50% 2: 50 - 75% 3: > 75%	3	9	9	9	9	9	9
2	<b>Weaning Rate:</b> # of weaners after 12 months/total head mated	1: >10% below the KPI 2: >5%-10% below the KPI 3: $\geq$ KPI or up to 5% below the KPI	3	3	9	9	9	9	9
3	<b>ADG Weaner Growth:</b> kg/hd/day since weaning	1: >10% below the KPI 2: 6% - 10% below the KPI 3: $\geq$ KPI or up to 5% below the KPI	2	2	2	2	2	2	2
4	<b>Feeder production cost per kg compared to Australian feeder purchasing cost per kg</b>	1: Feeder production cost is above the KPI 2: Up to 15% below the KPI 3: More than 15% below the KPI	3	9	6	9	9	9	3
5	<b>Positive cash flow:</b> year in which the cash flow is positive	1: > 4 year 2: 4 year 3: < 4 year	2	6	6	6	6	6	2
6	<b>Internal Rate of Return</b> by end of projection period (Year 10)	1: < 5% 2: 5%-10% 3: > 10%	3	6	6	6	6	6	6
7	<b>Social Return:</b> engagement with local communities and women in the project	1: No engagement 2: There is engagement 3: Engaging many local communities and women	1	3	3	3	3	3	3
8	<b>Project Security:</b> Incidents involving local community that may have negative impact on the cattle project	1: > 3 incidents 2: 1 – 3 incidents 3: No incident	3	9	9	9	9	9	9
9	<b>Management:</b> Development of staff capacity, system and process for the sustainability of cattle business	1: No efforts / not seen 2: Some efforts have been taken but unable yet to overcome critical issues 3: Implementing significant efforts therefore achieving expected results	3	9	6	6	9	6	6
<b>FINAL SCORE</b>				<b>56</b>	<b>56</b>	<b>59</b>	<b>62</b>	<b>59</b>	<b>49</b>
<b>FINAL SCORE (in %)</b>				<b>81%</b>	<b>81%</b>	<b>86%</b>	<b>90%</b>	<b>86%</b>	<b>71%</b>

<b>&lt; 35 (&lt;50%): Critical</b>	Not commercially sustainable. If continuous for more than 3 months STOP decision highly likely
<b>35 - 48 (50-70%): Performance needs to improve</b>	Commercial sustainability is possible but unlikely without sustained improvement
<b>49 - 55 (70%-80%): Fair Performance</b>	Profitable but sustainability is uncertain
<b>&gt; 55 (&gt; 80%): Performing well</b>	Commercially sustainable

Criteria No. 1 and 6 are the key KPIs that are important for the commercial viability of the projects

No. Criteria	Indicators	Descriptions – Scoring System	Weighting 1-3 (3 most important to sustainability)	Score 1-3	Final Score
1	<b>Body Condition Score (BCS):</b> Average % of cows with BCS $\geq$ 2.6 in the last three months	1: < 50% 2: 50 - 75% 3: > 75%	3	3	9
2	<b>Weaning Rate:</b> # of weaners after 12 months/total head mated	1: >10% below the KPI 2: >5%-10% below the KPI 3: $\geq$ KPI or up to 5% below the KPI	3	1	3
3	<b>ADG Weaner Growth:</b> kg/hd/day since weaning	1: >10% below the KPI 2: 6% - 10% below the KPI 3: $\geq$ KPI or up to 5% below the KPI	2	1	2
4	<b>Feeder production cost per kg compared to Australian feeder purchasing cost per kg</b>	1: Feeder production cost is above the KPI 2: Up to 15% below the KPI 3: More than 15% below the KPI	3	3	9
5	<b>Positive cash flow:</b> year in which the cash flow is positive	1: > 4 year 2: 4 year 3: < 4 year	2	3	6
6	<b>Internal Rate of Return</b> by end of projection period (Year 10)	1: > 4 year 2: 4 year 3: < 4 year	3	2	6
7	<b>Social Return:</b> engagement with local communities and women in the project	1: No engagement 2: There is engagement 3: Engaging many local communities and women	1	3	3
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<b>FINAL SCORE</b>					<b>62</b>
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<b>FINAL SCORE</b>					<b>59</b>
<b>FINAL SCORE (in %)</b>					<b>86%</b>

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Annex 10 Short Term Technical Advisors (STA) inputs

<b>Advisors</b>	<b>Inputs (days) Phase One</b>
Technical Director	100
Results Measurement/Systems Specialist	25
Animal Health and Husbandry Advisor	164
Pasture Development Specialist	86
Science and Research Advisor	-
Cattle Nutrition Specialist	32
Monitoring & Evaluation Specialist	6
Communication Specialist	11
Gender and Social Inclusion	3
Technical Publisher	27
Pasture Development Specialist	29
Cattle Management Specialist	11
Communication Officer	168

