

INDONESIA- CATTLE BREEDING PROGRAM INVESTMENT DESIGN

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Acronyms and Abbreviations List:

ABC: Australian Broadcasting Corporation
AIP-PRISMA: Australia Indonesia Partnership-Promoting Rural Income through Support for Markets in Agriculture.
AIP-Rural: Australia-Indonesia Partnership for Decentralisation- Rural Economic Development
CAVAC: Cambodian Agricultural Value Chain
CSR: Corporate Social Responsibility
DCED: Donor Committee for Enterprise Development
DFAT: Department of Foreign Affairs
EPBC Act: The Environment Protection and Biodiversity Conservation Act 1999
ESCASL: Exporter Supply Chain Assurance System
FT: Facility Team
GAP: Good Agricultural Practice
GOA: Government of Australia
GOI: Government of Indonesia
MDF: Market Development Facility
M&E: Monitoring and Evaluation
MEF: Monitoring and Evaluation Framework
NTB: West Nusa Tenggara
NTT: Nusa Tenggara Timur
OIE: World Organisation for Animal Health
PCC: Program Coordination Committee
PRISMA: Promoting Rural Income through Support for Markets in Agriculture.
ROI: Return on Investment
SISKA: Sistem Integrasi Sapi Kelapa Sawit
SOE: State Owned Enterprise
SOPs: Standard Operating Procedures
STA: Short Term Advisor
TA: Technical Assistance
VfM: Value for Money

Contents

Executive Summary.....	1
1 Strategic Context.....	4
1.1 Background.....	4
1.2 Sector Issues	4
1.3 Rationale for Australian Engagement.....	6
1.4 Lessons Learned	8
2 Investment Description.....	9
2.1 Logic and Expected Outcomes	9
2.2 Delivery Approach	10
2.3 Resources.....	14
3 Implementation Arrangements.....	15
3.1 Management and Governance Arrangements.....	15
3.2 Procurement Arrangements.....	16
3.3 Links to Other DFAT Aid Programs.....	17
3.4 Monitoring and Evaluation.....	18
3.5 Sustainability	19
3.6 Gender Equality/Social Inclusion/Safeguards.....	20
3.7 Risk Management.....	21
Annex 1: Theory of Change.....	24
Annex 2: Proposed Model for Beef Breeding Under Oil Palm	25
Annex 3: Potential Partners	28
Annex 4: Pilot Activity Selection Criteria.....	29
Annex 5: Indicative Staffing Requirements	Error! Bookmark not defined.
Annex 6: Monitoring & Evaluation Framework and Implementation Principles	30
Annex 7: Environment.....	31
Annex 8: Animal Welfare Risk Management.....	34

Executive Summary

The three-year, \$8 million Australia-Indonesia Cattle Breeding Project aims to pilot a range of different breeding partnership models and investment opportunities with private sector partners to assess commercially sustainable approaches that can be up-scaled to facilitate investment, innovation and expansion of the beef cattle breeding industry in Indonesia.

Longer term development and expansion of a viable and internationally competitive beef cattle breeding industry in Indonesia would expand the domestic beef herd, enhance self-sufficiency and boost Indonesia's capacity to meet domestic demand, provide investment, income and employment opportunities in the sector and potentially offer scope to diversify Australian industry engagement beyond the supply of cattle to include provision of technical and management skills and support for innovation.

The proposed models to be investigated are (a) integrated oil palm and cattle production; (b) cattle grazing on semi-intensive tropical pastures (c) semi-intensive grazing with small-holder involvement.

These models are not new, but until recently, private and state owned enterprises in Indonesia have largely rejected the 'potential' of these models citing management, operational, financial and security concerns. The models remain largely untested in the Indonesian context and require further development and analysis to establish the most efficient means of commercial cattle production.

There are increasing signs that the sector situation is changing and the prospects for commercially viable breeding enterprises looks to be promising. For example, there has been a substantial increase in the level of communication between plantation management and the Indonesian corporate cattle sector with interest from a number of 'pioneer' plantation owners and private companies using private capital investment to trial cattle under oil palm models.

Business models indicate that the internal rate of return on cattle breeding projects in Indonesia is most sensitive to the price of imports and weaning (production) rates. Prices for live cattle in Indonesia have roughly doubled over the last 5 years as a result of increasing domestic demand, decreasing domestic production and restrictions on importations of live cattle and beef; and higher world prices are being driven by static or declining production in major source countries, combined with strong growth in demand in established and new export markets.

In order for Indonesia to develop large-scale commercially viable breeding enterprises, improved management skills and proven financial models for government and industry to follow are needed. The potential exists to encourage and assist 'pioneers' to continue to develop their projects and more quickly bring the models to scale.

Engagement through provision of technical and business knowledge together with the co-investment of capital assets (cattle, equipment, land) would enhance the process. The aim is to facilitate interest and access by the broader industry to the intellectual property and operational technologies of tested production systems; and allow government as well as private sector entities to adopt and adapt their own projects, benefitting from lessons learnt by the 'pioneers.'

In terms of technology, innovation and supply, Australia is well placed to support Indonesia in its endeavours to expand its cattle breeding industry; as well as providing an opportunity to further Australian aid and economic diplomacy objectives, including private sector development.

The project will seek to understand the current status and commercial potential of a range of cattle breeding models in Indonesia, find willing investors (local 'pioneer' partners - private sector operators and potentially SOEs) partner with these businesses, cut deals and then monitor and learn what does and doesn't work. The program will seek out 'good deals' in which the program expends a small amount of funds and leverages private investment on opportunities with a high likelihood of success.

A Managing Contractor, via a Facility model, will undertake implementation of the project. This approach provides the flexibility and responsiveness necessary to progressively identify and confirm potential partners; and to adapt and modify approaches. The implementation team would have a high level of autonomy and flexibility to implement the project.

The Managing Contractor would negotiate agreements and determine the investment in capital and technical support applicable to each pilot activity. All deals above \$A100,000 would be subject to DFAT (delegate in Canberra) approval. Where partnership models were not delivering expected results, the Managing Contractor would have the responsibility to withdraw from these pilot activities.

The Managing Contractor would also have responsibility for all financial, procurement and administrative requirements of the project as well as the delivery of training, technical support and planning assistance at the field level. This will involve the establishment of a field operations and support unit, positioned to maximize the efficiency of the delivery of support services to partners as required.

The successful Contractor will propose an appropriate staffing structure, utilising a mix of international and national staff with the required skills and experience; as well as access, as required, to a pool of short term international and local specialist advisory support.

The pilot activities will be continuously monitored over two breeding cycles and the business case reviewed. The monitoring and evaluation framework will be developed during the Inception Phase of the project and will provide data on individual activity performance as well as overall program performance. The measurement system will need to provide evidence that investment outcomes are 'additional' and not displacing the efforts and investments of others.

Where success is demonstrated and local investors are ready to expand beyond the pilot scale, the project may offer continuing support (expected to be primarily technical assistance). Additionally, the project will seek to raise awareness within the sector and to engage with potential new investors who have not participated in pilot activities to provide access to intellectual property and advice.

It is proposed that a Program Board be established comprised of key Partnership members to oversee project implementation. It will be the highest program coordination authority at the national level and will provide broad direction and advice to the Managing Contractor around the expectations of the program (geographic spread of investments, maximum value of deals, etc).

Through links to both government and the private sector, the Program Board will be an important resource in advising on scale-up approaches; providing advice on issues impacting on performance; and, given the political nature of the program, the Board will have a critical role in advising the Managing Contractor on anticipating and mitigating risks.

The main risks for the program include:

a) availability/interest and viability of local partners – a number of potential partners have been identified during the preparatory studies but none are yet confirmed. Further investigation of their suitability, skills, capacity and interest will be required. To address risks it will be important to maintain a diversified portfolio approach that responds quickly to opportunities that arise;

b) animal welfare - whilst the process for delivery from Australia to major international Indonesian ports is strongly regulated, there are considerable welfare concerns relating to management of cattle in Indonesia. Mitigating this risk will involve recognising in every partnership that animal welfare and veterinary care is an essential part of any significant livestock logistical exercise and needs to be addressed in planning to ensure the necessary care and management. Partner funding will be contingent on acceptance of animal welfare guidelines set out in the context of each individual deal; training will be provided to all participants; and regular field monitoring of animal welfare issues will be carried out.

c) Political risk - is a potentially major issue for the project. In recent years there has been considerable tension within Australia and Indonesia in the cattle import/export sector that extends beyond the more public animal welfare issues. Australia has faced criticism in the past for providing 'barren' cattle, and there is no guarantee that any particular business model will be proven commercially viable.

It will be important to manage stakeholder expectations of what the program can achieve ensuring clear messages around commercial viability and to use the M&E system to pinpoint reasons for business successes and failures.

The Managing Contractor must ensure that any potential political risks are quickly brought to the attention of DFAT.

1 Strategic Context

1.1 Background

In October 2013 Prime Minister Abbott reaffirmed Australia's commitment to support agricultural cooperation and investment in Indonesia's beef sector and announced the establishment of the Indonesia-Australia Partnership on Food Security in the Red Meat and Cattle Sector (the Partnership).

The aims of the Partnership are to develop the Indonesian cattle sector and to improve joint competitiveness and prospects for long-term investment and trade between Indonesia and Australia as part of a globally competitive supply chain in the red meat and cattle sector. The Partnership functions as a high level advisory body to the Australian and Indonesian government to develop and provide recommendations on project proposals to be funded and to develop medium and long term plans for the development of the sector.

Since the 2014 election of President Joko Widodo the Indonesian government has reaffirmed its commitment to a food self-sufficiency agenda and the central role of agriculture in the development of the Indonesian economy. The red meat sector is a core part of this vision. Whilst there remain some internal GOI debates on the policies required to operationalise this agenda, questions surrounding the use of price controls and the role of smallholders can be seen as secondary to the broad GOI consensus on the need to progress the development of the sector.

The Partnership consists of representatives from the Government of Indonesia and the Government of Australia as well as industry representatives from Indonesia and Australia. The Partnership has Working Groups for each priority area of investment: breeding, processing and logistics.

At the second Partnership meeting in August 2014, a proposal was put forward by an Indonesian industry Partnership member to support cattle breeding under oil palm - Sistem Integrasi Sapi Kelapa Sawit (SISKA).

At the same meeting a proposal for a semi-intensive open ranch system (Pastoral) project to optimize the pastures and breeding using post-mining, State Owned Enterprise (SOE) or Local Government land in NTT, NTB and Kalimantan was also presented by the Indonesian side. The Partnership supported further investigation of both proposals.

A number of scoping activities and preliminary investigations¹ have been undertaken to inform the preparation of this design to pilot scalable approaches and (if successful) support development of a commercially viable beef cattle breeding industry in Indonesia.

1.2 Sector Issues

¹ Cattle Under Palm Study, R Ainsworth, November 2014; Business Case for Beef cattle Breeding in Indonesia, N Haug, March 2015.

In the context of a growing demand for beef products both globally and in Indonesia, the Partnership has identified commercial beef cattle breeding as one of three priority areas² to promote improved productivity and support Indonesia's food security in beef. The establishment of additional sustainable and competitive cattle production enterprises would expand the domestic beef herd, boost Indonesia's capacity to meet domestic demand and provide investment and employment opportunities in the sector.

To date, commercial beef cattle breeding in Indonesia, in most locations and circumstances, has not been viable on a sustainable basis. Whilst Indonesian feed lots have proven to be relatively cost effective, efficient breeding of beef cattle can generally only be achieved by feeding cattle on grass, rather than in a feedlot, but available large scale areas of agricultural land in Indonesia suitable for cattle are difficult to consolidate, and can usually generate much higher returns through activities other than breeding of beef cattle.

Currently, small-holders are the backbone of the Indonesian cattle industry. Necessary supplies of grass are obtained through cut and carry activities using large numbers of small areas of wasteland on an ad hoc, daily basis. But there is a physical limit to the amount of cut and carry that a small-holder can achieve; small-holders tend to have limited resources and a tendency to see cattle as a liquid asset rather than a commercial operation and hence there is a limit to the scale of the small-holder industry.

Realistically, state owned enterprises and private businesses represent the only viable partners to develop large-scale commercial projects necessary to have a significant impact on Indonesian food security.

Numerous scientific papers expound the potential of palm oil and commercial cattle integration. Aside from promoting national food security goals and increased net income from cattle sales and reductions in oil-palm operating costs, integration would also enhance:

- Good Agricultural Practice (GAP) and ecological sustainability through the use of cattle as 'biological lawn mowers' to keep grass, legumes and palatable weed levels down and achieve the same result with dramatically lower costs than the alternative of labour and herbicide (cattle faeces also contribute to the fertilization of the soil); and
- Opportunities to support Corporate Social Responsibility (CSR) through providing cattle ownership for workers.

In recent years the Indonesian Government has sought to encourage oil palm plantations to integrate cattle in order to assist with the rebuilding of the national beef herd to enhance self-sufficiency. In particular, regulatory changes stemming from the 2010 GOI policy to develop future oil plantations on degraded land instead of further converting forest or peat land and the subsequent legalisation of mixed-use plots has facilitated the establishment of additional business activities within Indonesia's palm oil enterprises.

However, until now, private and state owned enterprises in Indonesia have largely rejected the 'potential' of cattle and palm oil integration citing management,

² The other priority areas are beef processing and transport/logistics.

operational, financial and security concerns³; and it remains a largely untested approach.

A lack of technical know-how in regard to both business and herd management combined with generally low profitability has to date provided few incentives for large-scale landowners to introduce breeding enterprises on land dedicated to other agricultural production. Plantations where smallholders have attempted to be integrated have also experienced problems with their low level of capacity to effectively manage cattle.

A further argument advanced for rejecting integrated oil palm and cattle activities is security. Oil palm plantation development in Indonesia was initially focused in Sumatra largely because the existing infrastructure networks supported marketing and the sizable population provided an excellent source of plantation labour. But the population density in Sumatra is also the reason why permanent grazing under oil palm has never been seriously attempted. With large numbers of relatively poor people living inside and around remote oil palm plantations, the likelihood of theft of cattle left to graze unattended in the plantation overnight has been regarded as unacceptably high. As a result, while many plantations allow cattle (local breeds and Bali cattle) to graze for periods during the daylight hours, all cattle are returned to the nearby villages in the late afternoon where they are securely penned up in small pens behind or under each farmer's house. Such a system is impractical for large numbers of cattle.

The Kalimantan oil palm industry is "newer" and still in the expansion phase. Human populations in the remote plantation areas are much lower and the risk of cattle theft is regarded as low, although there remains a reluctance to allow cattle to remain unattended at night in the plantations. Given that the industry in Kalimantan is now moving from a phase of rapid oil palm development to one of consolidation, plantation managers only now have the opportunity to consider secondary opportunities such as cattle integration.

1.3 Rationale for Australian Engagement

It could be expected that as long as Indonesia is able to source affordable feeder cattle for the feedlot industry (and/or low cost boxed beef), the business case for the development of large-scale cattle breeding in Indonesia will remain marginal.

Importantly in this regard, the prospects for commercially viable breeding enterprises in Indonesia have recently improved and look to be on an upward trajectory.

There are increasing signs that the sector situation is changing. There has been a substantial increase in the level of communication between plantation management and the Indonesian corporate cattle sector with interest from a number of 'pioneer' plantation owners and private companies using private capital investment to trial cattle under oil palm models.

³ Where plantation managers have introduced cattle projects in a half-hearted manner to comply with government policy, this has simply proved what they 'already knew': there was little profit to be made and that cattle had the capacity to physically and financially damage their primary plantation business.

Trends in the global supply and demand of beef suggest that supply is static while demand (and price) is rising steadily, with the primary area of growth being China and South East Asia. As a result, both government and industry groups in Indonesia have renewed their interest in increasing the domestic production of beef and are actively searching for viable production models suitable for the local environment.

Most notably, prices for live cattle in Indonesia have roughly doubled over the last 5 years as a result of increasing domestic demand, decreasing domestic production and restrictions on importations of live cattle and beef. The 2013 Indonesian government census has indicated that the domestic cattle herd has been reduced by almost 2 million head during the past few years. At the same time, continued GDP growth of 5-6% is providing consumers improved access to higher priced food items including beef.

Similarly, the price of cattle and beef from Australia and other import sources is expected to increase dramatically. Higher world prices are being driven by static or declining production in source countries combined with strong growth in demand in established and new export markets.

This is significant since business models indicate that the internal rate of return on cattle breeding projects in Indonesia is most sensitive to the price of imports and weaning (production) rates⁴. Consequently, rising feeder cattle prices, increased demand and reduced availability from imports is moving in the direction where breeding cattle in Indonesia is becoming an increasingly profitable business proposition.

However, in order for Indonesia to develop large-scale commercially viable breeding enterprises, improved management skills and proven financial models for government and industry to follow are needed. At present there are a small number of 'pioneers' in Indonesia developing promising production models. A number of these business ventures have achieved near commercial viability, or show potential to be viable and are investing their own money in trialling these models. They include corporate entities and government enterprises as well as blended corporate-small-holder groups that have invested considerable resources of their own with the aim of achieving efficient, large-scale production. They require technical expertise to assist them to improve their business efficiency and 'crack' the business model.

The rationale for Australian involvement is clear. The interest in exploring viable models demonstrates the industry's commitment and represents an opportunity for the aid program aligned with the Partnership to support the bilateral exchange of expertise and closer engagement in the red meat and cattle sector, with the real prospect of achieving measurable impacts in the breeding sector, supporting economic growth and job creation.

The potential exists to encourage and assist 'pioneers' to continue to develop their projects and more quickly bring the models to scale. Engagement through provision of technical and business knowledge together with the co-investment of capital assets (cattle, equipment, land) would enhance the process. The aim would be to facilitate interest and access by the broader industry to the intellectual property and operational technologies of tested production systems; and allow government as well as private sector entities to adopt and adapt their own projects, benefitting from lessons learnt by the 'pioneers.'

⁴ Haug, 2015, *ibid.*

In terms of technology, innovation and supply, Australia is well placed to support Indonesia in its endeavours to expand its cattle breeding industry; as well as providing an opportunity to further Australian aid economic diplomacy objectives, including private sector development.

The proposed cattle breeding program provides scope to further policy dialogue and engagement with key public and private sector partners and to build relationships and sector knowledge between Australia and Indonesia, through a deeper understanding of stakeholder interests.

Engagement with business and business sector organisations should enhance a greater understanding of development opportunities for further supporting industry links and private sector led economic growth. This will provide the potential for mutual advantage through the diversification of Australian engagement to include the transfer of Australian expertise, management and technical skills in addition to supply of cattle.

Growth in the cattle breeding sector will provide opportunities for job creation and additional income generation. Opportunities for smallholder involvement will be considered in the models investigated.

1.4 Lessons Learned

Cell grazing under oil palm, semi intensive farming and some options integrating smallholders offer potentially commercially viable models for large-scale beef production in Indonesia; there is appetite from businesses to invest in it, but the models remain untested.

The key lessons learned from existing projects in Indonesia and the region, which should guide the design and implementation of pilot beef cattle breeding activities, include:

- a) Skilled management and trained operators is the key to success.
- b) Oil palm and cattle activities need to be fully integrated at every step. This requires goodwill; flexibility; and communication to ensure day-to-day activities are systematically planned and executed. The cattle operation must be strategically inserted into the plantation without disturbing the essential operations of the estate; the interests of the core oil palm business are always paramount and there needs to be a genuine desire for integration from plantation management.
- c) Cattle management staff should be well trained and prepared before the introduction of the stock. This essential training includes the weed spot-spray teams that must learn what weeds to spray and what edible plants to leave untouched.
- d) The introduction of stock should initially be small (Cell size of approximately 200-250 head) to reduce the pressure on new staff with new cattle in a new environment.
- e) In terms of animal welfare, it is preferable to begin a project with young, non-pregnant cattle, as this allows for adaptation to the local environment before pregnancy.
- f) Suitable strategically located yard facilities must be available to allow conventional husbandry practices to be completed e.g. weaning, segregation, health treatments, reproductive examinations etc.

- g) Appropriate veterinary care is essential to address the common problems encountered in the plantation environment.
- h) A well-planned marketing strategy is essential to maximize returns from the cattle project.

2 Investment Description

2.1 Logic and Expected Outcomes

Consistent with the aim of the Indonesia-Australia Partnership on Food Security in the Red Meat and Cattle Sector, the higher-level long-term development outcome (goal) of this project is to support the development and expansion of a viable and internationally competitive beef cattle breeding industry in Indonesia.

The three-year project specific objective or end-of-investment outcome is to:

Establish commercially sustainable models to facilitate investment, innovation and expansion of the beef cattle breeding industry in Indonesia

The proposed pilot cattle breeding models to be supported are not new, but in the Indonesian context they require further development and analysis to establish the most efficient means of production. Effective approaches to operation and management will be the key to success.

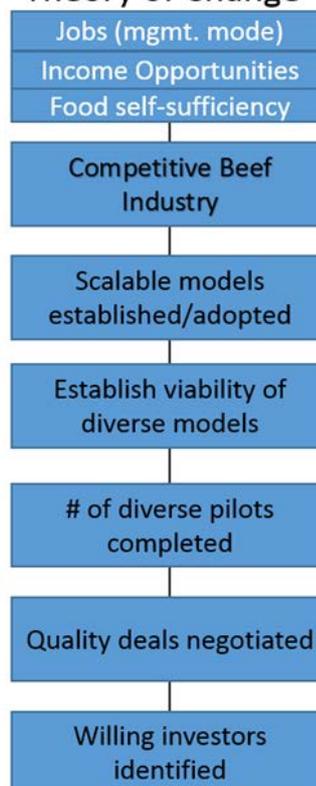
While GOI policy is supportive, the provision of technical expertise, business facilitation and financial resources through the aid program provides a material incentive, when combined with targeted co-investments from ‘pioneer’ partners, to undertake the proposed pilot activities effectively.

However, large-scale uptake is unlikely until a sound business case can be demonstrated and ‘pioneers’ are seen to be successful on a commercial scale. To facilitate expansion, ‘pioneers’ assisted during the program must be willing to share their experience and intellectual property with other interested parties. DFAT support would be conditional on partners sharing knowledge and cooperating with visitors wanting to benefit from pilot scheme experiences.

The theory of change (TOC) is shown schematically here in the form of a results chain. Further detail is provided in **Annex 1**. The results chain lays out the pathway to change, articulating how a program of activities will trigger different levels of change leading ultimately to longer-term development impact. Preliminary studies conducted for the Partnership indicate that it is likely a business case can be developed that verifies the commercial viability of cattle breeding. The project’s pilot activities will seek to confirm this proposition.

The Breeding Program TOC articulates that if willing Indonesian investors can be identified and quality deals negotiated involving co-contributions (including in-kind) combined with aid investments particularly technical/management expertise and capital inputs (primarily

Theory of Change



breeding cattle) this will enable implementation of a number of scalable pilot activities. Quality deals will require Indonesian investors to put real 'skin in the game' in terms of the proportion of the total co-investment along with having a strong business case for the co-investment. If upon execution the models are able to demonstrate they are commercially viable and experience can be shared with other potential investors, this will provide a foundation for further investment and expansion of the commercial cattle breeding industry. Longer-term expansion of the commercial cattle industry should in turn improve food self-sufficiency, income earning opportunities and formal jobs for poor people within Indonesia.

The end result of the three-year project is the delivery and assessment of scalable, commercially sustainable cattle breeding models. These models would be accessible not only to pilot project participants but also to other potential investors. Key measures of success will be various indicators of the level of engagement by industry at each point of the results chain; management of risk; confirmation of successful business cases; and evidence of scale-up by interested investors within Indonesia.

At an activity level, the key measures of success include negotiation of agreements and implementation of pilot schemes in accord with agreed parameters including animal welfare measures. Key indicators of successful cattle breeding projects include mortality, calving, weaning and animal growth rates.

2.2 Delivery Approach

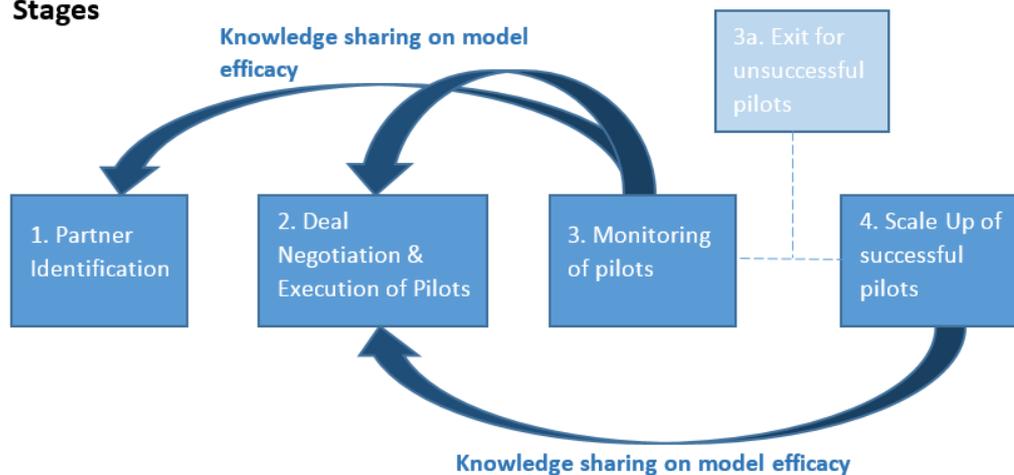
The Breeding Program is seeking to understand the current status and commercial potential of a range of cattle breeding models in Indonesia, find willing investors, partner with business, cut deals and then monitor and learn what does and doesn't work. The program will seek out 'good deals' in which the program expends a small amount of funds and leverage a large amount of private investment on opportunities with a high likelihood of succeeding. Reflectively the program will filter out 'bad deals' in which pilots are less likely to succeed due to lack of financial commitment, low predicted rates of return on investment or lack of capacity on the part of the business to manage cattle.

Based on previous experience with successful DFAT funded market development programs in the region including the Market Development Facility (MDF), Cambodian Agricultural Value Chain (CAVAC) and Promoting Rural Income through Support for Markets in Agriculture (PRISMA), the success of the Breeding Program will be contingent on development of a diversified portfolio of possible interventions. Maintaining this portfolio of interventions across more than one region and model of production is an important way to manage risk and, given the relatively high likelihood of failure of some of these pilots, this risk mitigation is vital.

Some initial offers of partnerships from private businesses and SOEs may not proceed, or might generate unexpected negative environmental or social outcomes and need to be terminated. Other interventions might take off in unexpectedly positive directions, and program staff and resources need to be flexibly deployed to realise the opportunities that these present. The program will need to try many things and explore different opportunities in order to develop this portfolio. Proportionate risk-taking will be encouraged in a context where should one partnership fail, the portfolio spread and diversity will likely mean that others will not be affected or will more than make up for any failures by exceeding expectations.

Delivery Approach Key

Stages



1. Identify potential partners

Based on experience from other market development programs there are two options for the formal identification of potential partners that could be applied to the breeding program; public tender and/or a comprehensive market scanning or managed partnership process. Public tender involves a formal call for proposals in which all prospective SOEs and private enterprises would be able to apply for self-identified levels of funding and support, with those best meeting the selection criteria receiving funding.

The managed partnership approach, used by PRISMA and MDF involves continuous market/sector scanning of enterprises, with the team identifying prospective opportunities through extended dialogue with all the major actors in the market and the program team inviting those deemed to have potentially viable propositions to submit a grant proposal to be supported by the program. Experience from PRISMA and MDF indicates that with the correct expertise both models can meet Commonwealth procurement guidelines in terms of transparency and openness.

In the context of the limited number of potentially viable actors for partnership in the red meat industry in Indonesia and the desire to rapidly undertake pilots it is suggested a managed partnership approach is taken. Whilst theoretically ensuring that all market actors get a fair opportunity to apply for funding, the slow and often rigid nature of the application and award process for open tenders can be a disincentive for viable businesses to apply. They can also often be a test of proposal writing skills rather than reflecting the quality of business opportunity. Given the desire to identify the pilots most likely to succeed, the need to carefully manage expectations and potential political risks, together with existing knowledge within the Partnership of key players, it is considered the managed partnership process is the most appropriate model.

Partnerships will be negotiated with local 'pioneer' partners (private sector operators and potentially SOEs) to undertake pilot activities to determine commercially viable models of cattle breeding that can be readily up-scaled. The proposed models to be investigated are (a) integrated oil palm and cattle production; (b) cattle grazing on

semi-intensive tropical pastures (c) semi-intensive grazing with small-holder involvement.

Initial partnerships are expected to focus on established integrated cattle under palm production enterprises where interest (and some capacity) has already been demonstrated through investment of their own resources; and semi-intensive grazing on tropical pastures, but will not necessarily be limited to these.

No single breeding model fits all circumstances. Nevertheless, there are a number of essential technical elements, particularly with regard to cattle under oil palm that should be included in every model to ensure a reasonable chance of success. Potential farms need access to veterinary care and must have well trained stockmen/farmers who understand the needs of the cattle and are able to report problems as they occur and the businesses must have an effective communications, recording and reporting system. Further technical elements are detailed in **Annex 2**.

It will be necessary to negotiate agreements with potentially interested partners and quickly develop customised implementation plans for each partner, which will differ for each one depending on the type of assistance being provided by the program.

A number of different models and geographical locations should be included, possibly including some research activities. It is anticipated that over the life time of the Breeding Program 10-15 partnerships with a range of market actors will be undertaken. A number of potential partners have expressed interest (**Annex 3**), but will require further investigation before agreements can be negotiated.

A three-year project allows for at least two breeding cycles before a formal review of the effectiveness of the various pilot schemes. If particular pilots are succeeding after the two breeding cycles, further analysis would be undertaken by the program to see if further investment and requirement for additional technical assistance or support could help the business scale up.

Once production models are established, there will also be potential to offer small-holders opportunities to participate. Just as some small-holders currently allow their small plots of land to be amalgamated into one large plantation with central management, it may be feasible to develop a similar system combining cattle and palm oil production (at least one such a scheme operates in Kalimantan). Small-holders could be financed into the ownership of one or more cows that could then be managed as a single commercial unit within their plantation.

During industry consultations, it was clear that many interested businesses well understood the importance of tight cattle management in order to achieve the production outcomes that would lead to commercial viability. Due to this, they have expressed the view that involving smallholders from the outset would be problematic due to a lack of control of cattle management delaying confirmation of the business model.

As such, it is recommended that small-holder involvement in cooperative groups should be considered for the extensive grazing models. In the future, when business models for oil-palm integration are established, small-holders may be able to be incorporated into those models.

2. Negotiate individual 'deals' with each partner

The key initial task for the Managing Contractor will be to agree on the terms of support with each partner to ensure pilot scheme objectives are met, particularly in regard to any capital purchases and grants (cattle, equipment or plant) the program contributes. As a minimum, it is expected that in-kind contributions from the partner would include the condition that information on business models is publically accessible; the business case is commercially viable, the business has skin in the game, the pilot is scalable, that animal welfare and environmental standards are met; and that the broader sectoral benefits from aid funding and Partnership support are clearly understood by all parties. Suggested pilot activity selection criteria are detailed in **Annex 4**.

Initial pilot activities will focus primarily on existing schemes that have already demonstrated, through their own investment, an interest in integrated operations. Australian investment of capital and expertise is designed to introduce innovation, maximize efficiency, demonstrate the schemes can be elevated above marginal operations and develop proven scalable business models that will be attractive to other plantation investors.

Whilst some capital purchases are anticipated, consultation with Indonesian private business owners suggest that the greatest value for money and leverage from deals will be where businesses invest in necessary infrastructure and cattle, and the project provides targeted technical assistance to improve practices and conditions.

It is expected that most, if not all, partnerships will involve a significant training program to build the capacity of the plantations stockmen to manage the cattle to achieve optimum animal welfare and productivity outcomes.

Where business models demonstrate success, additional assistance could be provided to support scale-up in the short term to allow potential investors to observe production models in a real commercial context. Implementation would be staged over time to ensure that partners are prepared for each new stage of development.

3. Determining successful and unsuccessful business models

Activities will be continuously monitored by program staff to identify issues arising in the breeding models. This monitoring will allow the program team to provide ongoing support and guidance including providing additional targeted technical assistance. This close monitoring will enhance the scope for pilot scheme successes and will help to mitigate risks relating to animal welfare and adherence to agreements by identifying problems early and allowing for constructive dialogue between the program and farmers on how to rectify potential problems.

Critically, all partnerships will have at least two breeding cycles after pilot commencement before conclusions on the effectiveness of the scheme are made. Key business case indicators of success will include; a low mortality rate, high calving rates, high weaning rates, good growth rates, solid disease control and evidence of financial profitability. The benchmarks for these indicators of success will be established for the variety of models in the inception phase following ground-truthing of what is feasible to achieve in two cycles.

3a.Exit strategy for unsuccessful partnerships

Whilst the partner identification and deal negotiation process should ensure that the program only supports pilots that have a strong business case and therefore a

relatively high likelihood for success, the reality is that a number of the pilots are likely to fail. This may be caused by the model proving to be unviable, poor management or through the partner breaching the terms of their partnership agreement. Whilst enterprises should have adequate 'skin in the game' so that if the pilot is not working, they will be incentivised and end it themselves to stop losing money, this may not occur and so it will be important that exit strategies are negotiated and formalised in all partnership agreements before pilot commencement.

Agreed exit strategies will be based on the principle that if after a formal review following two breeding cycles the pilot is not deemed economically viable by the program, no further support will be provided and the pilot will be ended. The pilots will only be ended earlier than the two year review if evidence is found through the regular monitoring of serious animal welfare violations, fraud, corruption or noncompliance with other DFAT policies such as child protection.

Where exclusively technical assistance is provided or only non-cattle capital goods are purchased by the program for the pilots, exit strategies will focus on providing farmers with options for supervised re-selling their stock to other partners or guiding them to registered abattoirs. Where breeding cattle have been purchased for an enterprise by the program, partners will be obligated to return all seed stock and the program will ensure that the cattle are either redistributed or are taken to a registered abattoir.

Recognising the potential negative response from farmers who would feel they have had animals 'taken' from them, a key principle of partnership will be that no cattle will be purchased for, or 'gifted' to, partners unless the program is fully satisfied that adequate training has been provided, that the pilot has a high chance of success and that there is low risk of any animal welfare issues.

4. Scaling up successful business models

Where success is demonstrated and local investors are ready to expand beyond the pilot scale, the program may offer continuing support (expected to be primarily technical assistance).

Additionally, the project will seek to raise awareness within the sector and to engage with potential investors who have not participated in pilot activities to provide access to intellectual property and advice. This could take the form of engagement with relevant business groups and other stakeholders, direct marketing and roadshows to oil palm plantations and organising tours for potential investors of pilot activities.

The Program Board and broader Partnership will be an important resource in advising on scale-up approaches. As further intelligence is gained on the sector and pilot activity performance, the Managing Contractor will be required to prepare a scale-up plan within the first 18 months of project implementation.

2.3 Resources

The Breeding Program will initially operate for a total of 3 years. Based on analysis to date, a total budget of approximately \$8 million over the three year period is deemed appropriate to test the different breeding partnership models and explore other investment opportunities.

The proposed pilot activities involve a contribution from both Australia and Indonesian partners. Key Australian resources involve the provision of management and technical expertise, the sourcing of initial breeding cattle from Australia and other capital expenditure if required.

Local contributions will be negotiated on a case-by-case basis as pilot activities are identified and designed. Partner contributions may be in-kind and might include land, other existing assets, and operational costs including current staff and intellectual property. Local staff requirements for a cattle integration project are minimal in terms of numbers but significant in terms of training and coordination. A substantial training program will need to be developed in advance of the delivery of livestock.

3 Implementation Arrangements

3.1 Management and Governance Arrangements

The Cattle Breeding Program needs to be able to work at the pace, use the language, and understand the context of business in Indonesia. It must develop a credible and business-like image in the sector and systems will need to operate in a business-like manner.

It is proposed that the implementation of the project be undertaken by a Managing Contractor, delivered via a Facility model. This approach provides the flexibility and responsiveness necessary to progressively identify and confirm potential partners.

The Managing Contractor would have responsibility to negotiate agreements and determine the investment in capital and technical support applicable to each pilot activity. Where partnership models were not delivering expected results, the Managing Contractor would have the responsibility to withdraw from these pilot activities.

The Managing Contractor would also have responsibility for all financial, procurement and administrative requirements of the project as well as the delivery of training, technical support and planning assistance at the field level. This will involve the establishment of a field operations and support unit, positioned to maximize the efficiency of the delivery of support services to partners as required. In addition the Contractor will be responsible for engagement of short-term technical support specialists where these skills are not available from the field operations unit.

The Managing Contractor will prepare an annual work program for approval by DFAT Canberra as well as 6 monthly (and, as necessary, exception) reports to DFAT.

It is proposed that a Program Board be established comprised of key Partnership members⁵. It is proposed the Board meet 6-monthly or additionally as required. It will be the highest program coordination authority at the national level and will provide broad direction and advice to the Managing Contractor around the expectations of the program (geographic spread of investments, maximum value of deals, etc).

⁵ Composition of the Program Board and meeting arrangements are subject to confirmation by DFAT in consultation with the Partnership, but potentially might include the Breeding Working Group, DFAT, Australian Department of Agriculture, GOI Ministry of Agriculture.

Through links to both government and the private sector, the Partnership and the proposed Program Board overseeing project implementation will be an important resource in anticipating and mitigating risk. Importantly, given the political nature of this program and the potential for reputational and political risks, the Board will have a critical role in advising the Managing Contractor how to mitigate these risks. However, the Board will not have a role in the approval of each individual intervention. The Board will also be an important source of intelligence on the sector through established industry linkages; providing advice on issues impacting on performance and in advising on and supporting approaches to scale-up.

The selection of partners and negotiation and finalisation of each individual deal would be devolved to the Managing Contractor with all deals above \$A100,000 subject to DFAT (delegate in Canberra) approval. This streamlined approach will enable deals to be made quickly, and opportunities which arise throughout the program to be realised. It alleviates the need for Partnership members to be involved in day to day decision making of the program, and leaves them to provide strategic direction only. It also minimises the risk of conflict of interest, as members of the Partnership may be direct beneficiaries of the program, but will not be involved in the decision-making regarding individual investments.

The Managing Contractor will provide all Program Board members with a full induction process on the Australian aid program, confidentiality agreements and receive training on DFAT policies and procedures including fraud and child protection.

The successful Contractor will propose an appropriate staffing structure, utilising a mix of international and national staff with the necessary skills and experience. The exact mix of personnel inputs will be determined in order to provide all the required functions listed in the Scope of Services.

Additionally, the implementation team would have access, as required, to a pool of short term international and local advisory support including cattle breeding, animal health and veterinary services, finance, results measurement, training, environment safeguards, social inclusion, etc. The implementation team would have a high level of autonomy and flexibility to implement the project within the scope and strategic direction approved by the Program Board.

3.2 Procurement Arrangements

Procurement of aid-funded assets (primarily cattle and equipment) would be the responsibility of the Managing Contractor. The Managing Contractor is required to follow Commonwealth Procurement Guidelines and ensure value for money in all purchases. DFAT at its discretion may undertake an audit to ensure procurement procedures are adhered to.

With regard to partnership agreements, some guidance can be drawn from experiences from other market development programs including MDF and PRISMA. There is a need to develop an approach that is both compliant with Commonwealth Procurement Guidelines and allows for the flexibility required to rapidly co-finance the partnerships with business (eg plantation owners). As indicated in Section 2.2 above, a comprehensive market scanning or managed partnership process is the preferred approach to the identification and selection of pilot activity partners. During the Inception Phase, the Managing Contractor would be required to prepare a compliant

template for partnership agreements for approval by DFAT. This should take account of the experience of PRISMA in Indonesia and any other relevant programs.

Local partners would be responsible for provision and procurement of partner inputs specified in the negotiation of agreements. In most cases it is expected partner contributions would mostly be in-kind, for example, land and other existing assets. In this case, rather than formal contractual partnership agreements, it would be anticipated the Managing Contractor could develop simplified Memoranda of Understanding. Ensuring that all program team members are adequately familiar with the different requirements of contractual-granting-co-investment models to negotiate these 'in kind' deals will ensure the program invests effectively and with a neutral eye to the market.

In order to mitigate risk, the Breeding Program should structure agreements in a way in which businesses have a significant amount of commercial 'skin in the game' related to the success or failure of the contracted activities. This provides a powerful incentive to avoid renegeing on commitments by owners.

3.3 Links to Other DFAT Aid Programs

The Australian government has two on going initiatives in Indonesia relating to the Red Meat Sector; Indobeef and AIP-PRISMA. It is expected the Managing Contractor will engage with both programs, share lessons learned and wherever possible leverage current and future activities. Both programs have a strong focus on small-holder farmers' roles and so will be important in providing a base of evidence for small-holder inclusive models potential viability.

Additionally, there have been three Australia Awards short courses delivered under the Partnership designed to develop skills in the areas of: a) Meat Production, Processing and Supply Chain Management; b) Animal Husbandry and Cattle Production (on farm management, operation of livestock markets, whole farm planning); and c) Policy Development for Livestock Production and Supply Chains.

The Animal Husbandry and Cattle Production Australia Awards Short Course

This skills development course is the most relevant to the cattle breeding program⁶. The 30 participants came from 15 provinces (including Kalimantan, NTT and NTB) across Indonesia and included representatives from smallholder systems, state run animal production facilities, and large commercial enterprises. There may be benefit in targeting alumni from this course to participate in the project.

⁶ The course was facilitated by the University of New England and included topics on: drivers of livestock markets, market transactions and value chains; measuring performance (key performance indicators); farm management, livestock production and management, and whole farm planning in tropical and sub-tropical environments; innovation platforms; genetics and breeding; animal health management; reproduction; cattle nutrition and feed management; on-farm biosecurity; and animal welfare and live export. Participants spent 6 weeks in Australia working and interacting with a wide range of commercial enterprises, industry bodies, service providers and other stakeholders involved in the Australian cattle industry. As part of the training participants undertook work placements at the Queensland Agricultural and Training Colleges commercial operations in Longreach and Emerald. UNE remarked on the significant motivation and high academic calibre of participants in this course.

Australia-Indonesia Partnership for Promoting Rural Income through Support for Markets in Agriculture (AIP-PRISMA)

The AIP-PRISMA is a multi-year program that is a part of the Government of Indonesia's midterm development strategy to accelerate poverty reduction through inclusive economic growth. With the support of the Government of Australia, the program aims to achieve a 30% increase in the net incomes of 300,000 male and female small-holder farmers in eastern Indonesia by June 2017. PRISMA works in East Java, West Nusa Tenggara and East Nusa Tenggara, Papua, and West Papua.

PRISMA has selected beef as a sector to be developed in NTT and East Java, because it is one of the main income sources for small-holder farmers in Indonesia. Proposed activities include introducing appropriate cattle farming financial products, promoting appropriate commercial breeding services including proper feed for female breeders and calves and introducing affordable commercial feed for cattle fattening. In East Java, PRISMA's first intervention in this sector has begun working with a cooperative group to promote commercially available, affordable and appropriate feed for cattle fattening to the farmers and developing a commercial distribution channel so that the farmers have better access.

Indobeef

IndoBeef is an Australian government funded program (currently in the design phase) which aims to strengthen Indonesia's community-based beef sector and improve the livelihoods of Indonesia's rural poor, while increasing the efficiency, productivity and output of Indonesia's beef industry.

IndoBeef will undertake practical research that seeks to add to existing knowledge and test sustainable development pathways. Operating in four beef value chains in Southern Sumatra, East Java, East Nusa Tenggara and West Nusa Tenggara. The research undertaken on these four pilots will focus on smallholders and should be of direct relevance to the Breeding Program. Close collaboration is expected between the program and Indobeef to improve understanding of the different models of production in the sector.

3.4 Monitoring and Evaluation

Implementation of pilot activities will be subject to constant monitoring, data collection and progress reporting (Annex 6). Monitoring is important for adapting pilot activities and continually informing management decisions.

Immediate responsibility for pilot activity monitoring and continuous improvement rests with the Intervention Managers. The focus would be on collection of technical data including mortality, calving, weaning and growth rates; identification of issues affecting performance, including deviation from partnership agreements; and provision of advice.

The Monitoring and Results Measurement Manager would cooperate with the Intervention Managers to review business cases and confirm expected financial viability and rates of return; and at a program level would be responsible for overall performance measurement according to key indicators. An international short term M&E specialist would establish the monitoring and evaluation framework during the Inception Phase of the project and would provide subsequent short term inputs to guide implementation and adjust the framework as needed.

It is proposed that the program use the Donor Committee for Enterprise Development (DCED) Standard as a framework for monitoring results measurement⁷. This standard lays out key guidelines for establishing a results measurement system for a program of this nature, and it identifies control points and compliance criteria for the implementation of the system so that it can be audited by a third party. The system enables simple value for money calculations to be made on each of the deals as well as for the program as a whole. The application of the framework should help the team to develop the necessary capacity to anticipate, constantly monitor the right indicators, and track the 'results chain' for each partnership.

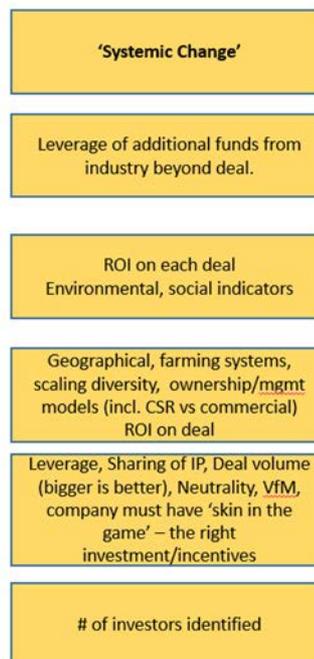
Monitoring will measure performance at each stage of the results chain, capturing the number of investors identified, the total amount of leveraged investment from businesses, the sharing of ideas between businesses and the return on investment of each deal; and environmental and social impact indicators will be quantified through setting baselines and providing ongoing monitoring.

Not all pilot activities might be expected to be successful. Monitoring will facilitate identification and withdrawal from these activities in a timely fashion. Equally it will be a measure of program performance that the exit strategy is implemented effectively in withdrawing from under-performing activities. Barring exceptional circumstances; such as severe animal welfare issues, withdrawals on the basis of under-performance will only be executed after a formal review following two breeding cycles.

A key component of the Breeding Program's measurement challenge will be proving the additionality of each intervention. This means the measurement system will need to provide evidence that the outcomes of DFAT's investment are 'additional' and that the program is not providing funds for breeding activities that would have happened anyway, nor is it displacing the efforts and investments of others.

In practice there are no hard and fast ways to prove additionality because there is no counter-factual and controlled experiments are not feasible. It will therefore be imperative to ascertain additionality as part of each business partnership based on reasonable assumptions, grounded in a sound understanding of the business context. This may include collating evidence that plantation managers wish to expand operations but cannot obtain financing from banks or other sources, or that it is deemed insufficiently profitable relative to other investments that the business could make. It might also include the program developing a set of additionality criteria and an associated scoring system whereby only certain plantations are eligible.

Impact Indicators



3.5 Sustainability

⁷ <http://www.enterprisedevelopment.org/page/measuring-and-reporting-results>

It is essential – as with all development interventions – that the partnership between the program and a cattle operation can be genuinely expected to result in changes that will persist beyond the period of the Partnership. In other words, a significant number of the breeding practices will be maintained and sustained for the foreseeable future and at least some must be viable for further investment to scale up.

Part of the programs modus operandi is to stimulate as much investment as possible by business with as little DFAT investment as possible; this will generally ensure substantial investment by the business and a strong desire to maintain and scale up successful practices in the future. In this regard, the program can be generally confident that the changes it is able to stimulate will continue beyond the life of the intervention and the program.

If the program can identify and support the sharing of viable models for breeding, there is a high likelihood of sustained impact beyond program completion. Continued increases in consumer demand for beef, rising prices, the diminished size of the Indonesian herd and increased restrictions on importations of live cattle and beef all provide strong arguments that if economically viable models can be established then there are strong imperatives for the industry to grow.

Key to the sustainability of the program will be supporting effective replication of successful models and identifying investors to fund this replication. A range of activities including engagement with relevant business groups and other stakeholders, direct marketing and roadshows to oil palm plantations and organising tours for potential investors of pilot activities will need to be proposed and executed by the Managing Contractor in a scale up plan developed in the first 18 months of the program.

3.6 Gender Equality/Social Inclusion/Safeguards

Gender:

Empowering women is a core objective of the Australian aid program. The cattle breeding program's view of promoting social inclusion is based on the recognition that women, poorer men, the young or elderly, people with disabilities, and ethnic minority groups in the community often lack access to opportunities and resources, which impact on their lives.

As a market development program, the Breeding Program will not implement specific gender activities, but will mainstream its support for women's economic empowerment through its core activities. Thus stakeholder analysis that takes place before engaging in partnerships will focus on women's roles and the nature of barriers to their participation as a central part of program planning, design and implementation. Capacity building measures for cattle breeders will be based on a profound understanding of gender roles in production. If required, special attention and assistance will be provided to support the role of women in the administration and management of the program.

At this design stage the program's approach to promoting social inclusion is necessarily confined to high level strategies. Since the nature of support required will vary from district to district, it is not feasible to elaborate detailed strategic plans before implementation commences. Rather, strategies to promote social inclusion will be developed once specific business opportunities have been identified.

Child protection:

DFAT renewed its Child Protection Policy in 2013. Its goal is to protect children from exploitation and abuse of all kinds in the delivery of Australia's overseas aid programme. The Cattle Breeding Program Managing Contractor will need to ensure full compliance with the DFAT Child Protection Policy and ensure that all staff, subcontractors and project partners fully abide by it.

Given the limited intensity of use of unskilled labour on likely sites and the focus of the program on partnering with large businesses and SOEs it is anticipated the risk of DFAT inadvertently supporting the use of underage workers is low. Where projects featuring smallholders are being considered, children are more likely to be involved in the care of animals and accordingly the project will need to give additional attention to mitigate the risks around this.

Each individual partnership will be assessed for its child protection risk, and will be a factor in selecting partners.

Displacement and resettlement:

Whilst historically palm oil plantation establishment in Indonesia has been associated with some large scale intentional and inadvertent displacement and resettlement, it is anticipated that the majority of the program's selected locations will be established so there should be no continuing land rights issues or threat of further displacement. This will continue to be monitored.

Environment:

The models proposed offer a number of environmental benefits. Grazing cattle reduce the need for herbicide use in the plantation (savings of up to 60% of herbicide costs may be achievable). Reduction in the use of chemicals also supports the sustainability of the model by allowing the development of a pasture base between palm trees. This base permits a higher stocking density; and cattle faeces distributed on the land contribute to improved soil fertility (see **Annex 7** for more detail)

3.7 Risk Management

The main risks and accompanying mitigation activities for the program include:

a) Availability/interest and viability of local partners

Whilst a number of potential partners have been identified during the design and pre-design period none are currently confirmed or have been evaluated formally under the proposed program selection criteria. Further investigation of their suitability, skills, capacity and interest will be required before any partnerships can be agreed to. It therefore remains to be seen if there will be any partnerships that can be formed and if upon execution any of the partnerships will deliver results. Given the marginal nature of much of the commercial breeding activity in Indonesia so far, the program may struggle to deliver many successful investments to scale.

This will be mitigated through a diversified portfolio approach that responds quickly to opportunities that arise to partner with potentially successful businesses, provide close mentoring and focused technical assistance to support businesses to meet deliver on viable business plans.

b) Animal Welfare

As the Exporter Supply Chain Assurance System (ESCAS) does not apply to export of breeder livestock, there are considerable risks around animal handling and slaughter in Indonesia. Whilst the process for delivery from Australia to major international Indonesian ports is strongly regulated and from discharge to project site is managed under exporters due diligence requirements there are still considerable welfare concerns relating to inter-island transfer of cattle which will need to be managed.

Mitigating this issue will involve recognising in every partnership that animal welfare, and access to and understanding of veterinary care is an essential part of any significant livestock logistical exercise and should be addressed in planning each pilot to ensure funding, training and resources are made available to allow the necessary care and management. The capacity to deliver small shipments for the first arrivals will be a major contribution to reducing welfare issues.

Partner funding will be contingent on acceptance of animal welfare guidelines set out in the context of each individual deal. There will be specific requirements regarding the slaughter of stock imported from Australia in accordance with World Organisation for Animal Health (OIE) animal welfare guidelines; training delivered to all participants pre and post livestock delivery will include appropriate information on delivery and care of livestock; and as part of the role of the field unit, regular field monitoring of animal welfare issues will be carried out in the course of day to day activities (see **Annex 8** for more detail).

In addition, recognising the concerns of Australian industry, all partnership agreements will clearly define the 'citizenship' of seed stock breeder cows purchased through the program. Whilst the progeny of breeders will be defined as Indonesian, imported heifers will remain Australian throughout their lives and therefore it will be of vital importance that partners have received significant training and demonstrate capacity to fully meet welfare requirements before any cattle are purchased by the program for pilots.

c) Adherence to agreements

One key risk for the program is that businesses will break their agreements with the program, either for short term financial gain or will breach DFAT rules and policies by engaging in corrupt or fraudulent practices.

In order to mitigate this risk the Breeding Program will need to structure their agreements in a way in which businesses have a significant amount of commercial 'skin in the game' related to the success or failure of the contracted activities. Aligned incentives in this regard are the best way to avoid renegeing on commitments by owners.

Continual monitoring of pilots and stringent financial management will also mitigate this risk.

d) Political

Political risk is a potentially major issue for the project. In recent years there has been considerable tension within Australia and Indonesia in the cattle import/export sector that extends beyond the more public animal welfare issues.

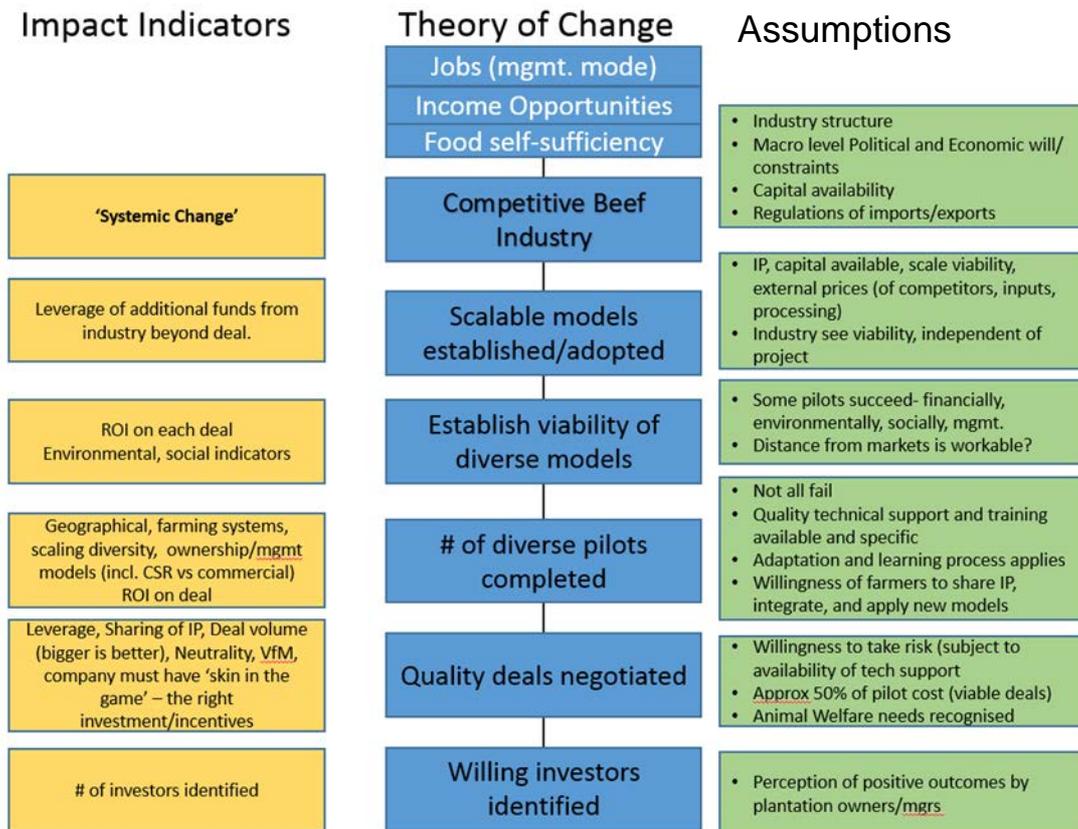
Australia has faced criticism in the past for providing 'barren' cattle, although the problem was demonstrably management of the cattle on the ground, particularly by smallholders. Nevertheless there is no guarantee that any particular business model will be proven commercially viable.

It will be important to manage stakeholder expectations of what the program can achieve ensuring clear messages around commercial viability and to use the M&E system to pinpoint reasons for business successes and failures.

The Managing Contractor must ensure that any potential political risks are quickly brought to the attention of DFAT.

A Risk Matrix is included in **Annex 9**. It further expands on risks, the impact and likelihood of occurrence (risk rating) and the control measures currently in place. The Partnership and Program Board through their links to industry and government will be an important resource in anticipating and advising on the mitigation of risk.

Annex 1: Theory of Change



Annex 2: Proposed Model for Beef Breeding Under Oil Palm

There is no single 'best' model as every activity needs to be designed with the specific plantation and location in mind. It would also be desirable to consider different ownership/management approaches potentially including corporate social responsibility (CSR) models.

There are however, a number of essential elements that should be included in every model to ensure a reasonable chance of success, including:

- a. From an estate management perspective there must be confidence that the core business of oil production is not compromised or they will view the project as a constant threat. The key management and technical issues include:
 - the potential spread of fungus in the damp conditions associated with the model;
 - physical damage to young trees and fruit bunches which reduces palm production;
 - root growth damage and soil compaction;
 - excessive consumption of ground cover crops;
 - damage to drainage channels; and
 - operational collision of oil palm/cattle management objectives.
- b. From a cattle management perspective the key issues include:
 - disease outbreaks such as foot and mouth, brucellosis and Hemorrhagic septicemia;
 - screw worm infestation, the danger of urea poisoning from fertilizer dumps;
 - frond thorn injuries; and
 - gut impaction from consumption of plastic fertilizer bags.
- c. The cattle grazing schedule must be designed to merge seamlessly into the normal daily estate management to prevent any disruption to the essential operations of the plantation. The general theme is to use the cows as biological lawn mowers by intensively grazing the areas which are due to be harvested in the next few days or weeks to reduce the under palm herbage to a very short lawn effect. In this way when fruit is harvested from the trees there is minimal chance of any of the valuable loose fresh fruit being lost.
- d. A cell grazing method where cattle are managed at high densities while being moved from area to area daily is essential to prevent soil compaction, ensure efficient utilization of pasture resources and reduce the costs of weed control. After each cell grazing day, the only "uneaten" plants in the grazing area are inedible weeds. Small teams of workers with backpacks enter the grazing area the following day/s and spot spray the remaining weeds leaving the low-cropped herbage untreated. After 3 or 4 grazing cycles all that remains in the plantation is edible forage species.
- e. Given seasonal variations, breeding cycles and changes in pasture growth and composition over time, portable electric fencing is the most efficient method available to provide the necessary flexibility to allow grazing areas to be constantly varied to suit the grazing needs on a day to day basis.
- f. Typically the grazing cycle would be around 40 to 90 days.
- g. A permanent central yard facility should be established and located to allow the cattle easy access to it during the grazing cycle. The yard needs to

- include handling facilities to allow for all the basic husbandry tasks such as segregation, health treatments, reproductive examinations etc.
- h. Some feedlot and/or paddock areas that allow for short or long term holding of weaners or other stock awaiting transfer, special management or sale should be established.
 - i. Mobile water supplies that can deliver drinking water to cattle in the event that their daily grazing area does not contain a suitable natural water supply should be provided for. This needs to be in the form of a tractor, tanker and portable water troughs.
 - j. Portable feed troughs in the event that feed and mineral supplementation such as PKC is required.
 - k. A mobile caravan or similar device is required for accommodation of stockmen who will remain in the plantation near the cattle on a 24-hour basis. This unit can be quite simple but must include sleeping, cooking and ablution functions when the cattle are located far from the village or headquarters.
 - l. A vehicle will be required to move the caravan accommodation and equipment such as electric fencing gear efficiently.
 - m. Access to veterinary care as required.
 - n. Training of stockmen ensure they understand the needs of the cattle and their integration with the activities of the estate and recognize and report problems as they occur.
 - o. An effective communications, recording and reporting system.

While not all models assisted under the proposal may prove to be commercially viable or able to be brought to sufficient scale, failures will still provide invaluable lessons for the broader sector.

Research to Support SSKA

The model for management of the cattle is quite simple with the principles of cell grazing being well understood. The areas which may benefit from further research are those issues that may be improved by innovation or novel approaches. Some examples include:

- a. Development of remote communications including video connection for project management advice and veterinary consultations.
- b. Novel identification of animals (especially calves) without the need for ear tags which are a major fly-strike initiator during the wet season.
- c. Application of medication delivery systems suited to animals that only pass by a yard every few months such as Westerguns.
- d. Investigation of potential application of experience in Malaysia of use of nutritional value of palm fruit factory waste products.
- e. Investigation of potential application of experience in Malaysia of the potential for inexpensive propagation of favoured grazing species.
- f. Survey of causes of abortion and other reproductive losses such as poor nutrition with analysis of the value of appropriate management tools.

Support Required (Years 1-2)

Financial support is required for 'pioneers' to kick-start the industry for the benefit of other investors and the nation. This is still essentially an untried industry for Indonesian plantation owners and they won't join enthusiastically until they see that a number of 'pioneers' are successful with large, commercial scale projects. This will require

- Management training and technical support.
- Development of Standard Operating Procedures specifically targeted for each

- project.
- Establishment of essential equipment supply chains to allow for timely delivery of hardware such as portable panels, crushes, electric fencing materials, veterinary chemicals and husbandry tools. It is extremely difficult to identify and import critical materials such as cattle crushes unless they are supplied on initial shipments of cattle. There is a real role for the Partnership to play in facilitating the sourcing and stockpiling of these critical pieces of hardware and having them available for immediate sale in a convenient location. This includes products that are already available within Indonesia but can be very hard to locate. Materials such as portable yard panels can be manufactured locally but it would be best if they were available “in-stock”. Hopefully this service could be handed over to commercial entities once a number of projects are up and running.
 - Establishment of some form of cattle trading service where suitable stock can be identified within Indonesia ready for prospective plantation buyers who, in most cases, won't know where to start searching.
 - Veterinary training and support, development of SOPs.
 - Stockman training in animal handling, problem solving.

On-going Support (Years 5-10)

- Produce detailed training packages for all levels of activities.
- Establish suitably located and resourced training facilities where new participants can attend and have the training packages delivered for all the skills necessary to successfully establish and manage cattle integration.
- Establish strategically located spelling yards where cattle that are being transported around Kalimantan can be rested if required.
- Supply unloading platforms for discharge of cattle from ships at the various importing ports of Kalimantan or support replication of smaller ships practice of carrying their own unloading platforms.

Provided by Ross Ainsworth.

Annex 3: Potential Partners

The table below provides a list of the larger scale and better known initiatives currently or recently operating in Indonesia identified in preparatory studies. Activities of some larger plantation companies remain confidential essentially to protect intellectual property; also the data does not include cattle managed in plantations by smallholders.

Company	Location	Method	Type	Est. No.
PT Kalteng Andini Prima Lestari (Medco subsidiary)	Pangkalan Bun, Central Kalimantan	Cattle-Palm rotational grazing (SISKA)	Breeding	500
PT Sulung Ranch	Pangkalan Bun, Central Kalimantan	Cattle-Palm semi intensive grazing	Breeding and Fattening	3,000
PT Santori & PT BKB	Satui, South Kalimantan	Cattle-Palm rotational grazing (SISKA)	Breeding	250
PT Berdikari Utama Livestock	Sidrap, South Sulawesi	Improved pasture semi intensive grazing	Breeding	5,000
PT Berdikari Utama Livestock	Padang, West Sumatera	Improved pasture semi intensive grazing	Breeding	900
PTPN III & IV	North Sumatera	Cattle-palm oil intensive feed/confined	Fattening	500
PTPN V	Riau	Cattle-palm oil intensive feed/confined	Fattening	500
PTPN VI	Jambi	Cattle-palm oil intensive feed/confined	Fattening	2,000
PT Rajawali Nusantara Indonesia	Sumatera & Kalimantan	Cattle-palm oil intensive feed/confined	Fattening	2,000
Way Laga	Lampung	Cattle-palm oil intensive feed/confined	Backgrounding & Fattening	100
PT Agrical	Bengkulu	Cattle-palm oil extensive & confined mix	Breeding and draft power	1000
Oil Palm Research Institute	Medan	Cattle-palm oil intensive feed/confined	Breeding and fattening	200
GGL	Lampung	Breedlot integrated with Pineapple	Breeding and fattening	2000
PT Berdikari Utama Livestock	Sidrup	Grazing with supplementary feeding	Breeding	1200
PT Berdikari Utama Livestock	Konsel	Free range fenced paddocks	Breeding	730

Annex 4: Pilot Activity Selection Criteria

Initial partnerships are expected to focus on (established) integrated cattle under palm production enterprises where interest (and some capacity) has already been demonstrated through investment of their own resources; and semi-intensive grazing on tropical pastures, but will not necessarily be limited to these. A diversity of locations and models should be investigated/piloted, including consideration of corporate social responsibility opportunities.

A number of potential partners have been identified, however a final decision on which partners and models to be supported (each pilot design/agreement will be specific to different partners) will be based on an assessment by the project team on the following criteria to be confirmed by the Program Board in the first quarter of year 1.

The following criteria are 'stop/go' filters or deal breakers - all deals that benefit from the program should be defined by/feature:

1. A business model demonstrating potential for commercial viability - internal rate of return in excess of 5%;
2. Commitment to co-investment, including in-kind contributions such as land and potentially other assets (eg vehicles, fuel, fencing), local staff, etc;
3. Willingness to share the business model/lessons learned with other interested investors to ensure the pilots can be replicated and taken to scale;
4. Animal welfare – acceptance of welfare management approaches stipulated by program;

This set of secondary criteria represent a sliding scale of ideal features of potential deals:

5. Additionality- the extent to which the deal would have been possible without program support;
6. Neutrality – absence of bias or preference;
7. Willingness of local partner to participate and awareness of risks; preparedness to manage the cattle in accordance with business models designed to ensure the models can be tested;
8. Management experience and operational capacity (including existing infrastructure, financial management expertise, personnel) to bring breeding operations to sufficient scale to establish commercial viability;
9. Minimum business scale - for cattle under palm model minimum herd size of 500 breeders; and indicative oil palm plantation size of 10-20,000 ha (allow 10 ha per breeding equivalent of livestock usable area) or equivalent evidence of readiness for capital investment for green field sites;
10. Potential for involvement of small-holder farmers either immediately or downstream;

Annex 6: Monitoring & Evaluation Framework and Implementation Principles

Lessons from market development projects around the world show that a consistent focus on results is a key element of program effectiveness. An effective M&E system is critical to operationalising this focus on results, in terms of both accountability and learning.

The Program Design Document highlights the importance of responsiveness in market development programs. This responsiveness is underpinned by “real time learning” in which results on the ground are regularly analysed and the lessons fed back into decision making at all levels of the program. This annex highlights some of the key principles of the M&E system it is expected the Breeding Program will have.

Key principles that will underpin the M&E system for the program include:

- **Thorough:** the M&E system will examine program results at different levels of change including partners, and poor men and women; the M&E system will also provide feedback on the quality of implementation and provide an overview of the progress of the program and its impacts.
- **Integrated:** the M&E system will be integrated with the management and implementation of the program so that information gathering responds to the decision-making needs of field staff and management, and results are used to inform decision making at all levels of the program.
- **Timely:** the M&E system will support real time learning and information-based decision-making; information gathering and analysis will be appropriately timed so that M&E outputs are available when decisions need to be made.
- **Practical:** the M&E system will be manageable within the overall program structure; M&E staff will choose cost-effective methods for information gathering and explicitly identify ways to achieve economies in studies conducted. The M&E system will be streamlined with operating procedures.
- **Credible:** the M&E system will draw on thinking and methodologies developed by other projects and codified by the Donor Committee for Enterprise Development (DCED) in its Results Measurement Standard, which elaborates field-tested and peer-reviewed minimum quality standards for M&E of market development programs.

Annex 7: Environment

Initial Environmental Analysis of Various Cattle Integration Models

DFAT policy on environment

DFAT is obliged to consider whether their projects will, or are likely to cause a significant impact on the environment and take steps to avoid and/or mitigate any negative impacts as per the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). In addition to this legal requirement, DFAT also acknowledges the integral role the environment plays in developing economic prosperity in developing countries. Many of the needs of the poor are resolved from natural resources including livelihoods, food and accommodation. Thus DFAT also recognises the moral and economic obligation to prevent environmental harm by their activities.

Environmental considerations for the program

The possibilities of integrating cattle with other agricultural practices are attractive because of their potential to reduce synthetic inputs such as fertilisers and pesticides and the costs of these inputs. Fertilisers and pesticides used in modern agriculture can improve productivity of crops but if used incorrectly, can damage soils, and reduce productivity. The effects of their run-off can also be damaging. Pesticide use harms native flora and fauna. Excessive fertiliser run-off pollutes waterways causing damaging algal blooms and reducing biodiversity. The loss of these systems in turn affects valuable ecosystem services, for example, ground water systems, protection from storms and landslides, and organic pollination. There is a high level of risk associated with appropriate Cattle under Palm management practices in particular, that may make the overall risk unacceptably high for some plantations. There is also potential for positive environmental externalities to arise from this integration, but only if it is managed carefully.

Grazing cattle under palm oil has the potential to reduce the need for synthetic fertiliser. Fertiliser in some form is integral to palm oil production. However, synthetic fertiliser has a number of possible negative environmental impacts including eutrophication of waterways, associated algal blooms and loss of biodiversity. In contrast, organic fertilisers, such as cattle manure, do not carry the same risks of environmental damage. As such, cattle grazing under palm oil may be able to mitigate negative environmental externalities from single purpose palm oil plantations.

Cattle grazing under palm can reduce other synthetic inputs too. Grazing cattle under palm oil plantations can also reduce the need to use chemical weedicides/herbicides. At certain stages of the palms' life cycle, cattle are able to graze on edible weeds, grass and legumes around palms, but leave palms intact. If cattle are managed carefully, the reduction in chemical weedicides/herbicides use means a reduction of stress on oil palms resulting in improved growth rates. Cattle under palm also reduces pollution from synthetic weedicide/herbicide run-off. Reductions in chemical weedicide/herbicide usage may also reduce risk of contamination of the many oil palm products for human consumption. Grazing cattle under palm oil can reduce the use of chemical pesticides with a number of positive flow-on effects.

Additionally, there are possibilities for cattle to help process bio-waste from plantations. For example prevents roots from water and nutrients absorption- from soil or fertilisers. In Way Laga, in southern Sumatra, cattle are fed off-cuts from palm

leaves. Normally this waste would be burnt or used for mulch, but cattle are able to transform it into a more effective use: fertiliser, thus reducing costs of inputs to plantations. The process also recycles nutrients and helps to replace soil lost to run-off, going some way to prevent erosion. There are also possibilities for cattle to help process local agri-waste from outside the plantations. For example, pineapple skin, coco husk, and soya husk all make good cattle feed. Depending on herd size, dietary requirements and surrounding industries, cattle may be able to absorb waste products from other nearby agri-businesses. Cattle under palm oil have the potential not only to reduce plantation waste but to recycle it into usable fertiliser.

More generally, cattle manure holds potential to reduce the need for synthetic fertiliser inputs but its appropriateness for each crop must be assessed to ensure 1) nutrients can be absorbed 2) there won't be excessive run off with risk of eutrophication of downstream waterways. Cattle integration also holds the potential to reduce waste material on farms, and recycle it into fertiliser.

Soil compaction presents challenges for agricultural managers as it prevents effective transfer of water and nutrients to crops. When soil is compacted, root systems of nearby crops are impaired. Soil can become compacted through use of heavy machinery, but even comparatively light weight activities, like humans use, can contribute. The introduction of cattle will cause soil compaction, but further analysis is needed to assess to what extent the rates of this compaction will impair nutrient and water uptake of palms. If cattle compact soil to a level where crops cannot absorb nutrients and water, and mitigation techniques cannot be found or developed, such an impact would threaten the viability of cattle grazing.

The use of cattle is not a silver bullet to weeding concerns. The positive impacts cattle can have on the reduction of weeding costs is widely lauded but it is not unconditional. Oil palms in particular experience the greatest burden from weeds and grasses during the first 5 years of their being planted. However, it is during this phase that cattle are unable to graze oil plantations, unless well managed, because they damage the small palm plants. Cattle under palm can bring savings on the costs of chemical weedicides/herbicides but they are not the solution to all weeding issues. Poorly managed cattle integration has the potential to cause damage to existing, and otherwise successful plantations, offsetting any savings or profits they may have brought.

The farming of cattle brings together the possibility of two seemingly disparate environmental concerns: soil compaction and run-off. Human traffic has the ability to compact soil in palm oil plantations. The comparative weight of cattle is therefore likely to cause soil compaction. While cattle can be an efficient method to deliver organic fertiliser to crops, the project must consider and assess to what extent such fertiliser can be absorbed by compacted soil. Application of fertiliser to compacted soil can result in surface run-off (including a loss of applied fertiliser) and increase in pollution of nearby waterways. Further assessment, particularly across different topographies, is needed to determine the intersection between compaction and run-off and therefore the viability of changed fertilising methods. Exacerbating this, rates of compaction and associated run-off could then feasibly increase due to a reduction in ground cover, as cattle effectively remove ground weeds. More research is needed to determine to what extent soil compaction will result in surface run-off.

Negative Impact Mitigation

Each location will be required to establish an environmental baseline from which they can ensure that cattle integration does not have negative environmental impacts or

downstream externalities. This baseline will be expected to measure and document the starting point for potential areas of environmental degradation, including soil composition and compaction, and chemical and biological profiles of nearby waterways.

Specific to the cattle integrated with oil palm concept, much of the soil under palm oil plantations in Indonesia is sterile before fertilisers are used. Plantations are reliant on this sterility or low fertility. To ensure the continued productivity of palm oil plantations, managers must be careful not to pollute this 'neutral' environment. Mismanagement of fertilisers and pesticides can damage this neutrality. For this reason cattle, and their ability to reduce synthetic inputs, become an attractive option to reduce the risk of fertiliser and pesticide misuse. But cattle and palm oil integration carries its own risks.

In summary, cattle grazing offers potential to both reduce environmental impacts from agricultural activities and prevent further damage to surrounding areas. But further research is needed to ensure that cattle manure is a sufficient substitute for synthetic fertilisers, given the range of variables that might affect their absorption. Integrating cattle will require careful management and further research to ensure optimal environmental outcomes and reduction in costs.

Finally, it is relevant to note the project is not endorsing expansion of oil palm plantations; rather it is seeking to assess the scope for improved efficiency and additional income generation through diversification.

Annex 8: Animal Welfare Risk Management

Definition

Animal welfare describes the ongoing safety, health, and ethical slaughter of animals. In the investment design, animal welfare is the responsibility not only of farms and plantation staff and management, but also of Australian and Indonesian governments. This design will ensure Australian cattle are treated as per Australian Standards for the Export of Livestock while in Australia and on-voyage. When landed in Indonesia, the program will endeavour to ensure OIE standards for animal welfare are upheld during the transportation from port to final destination.

Any management issues and procedures in this design are considered in light of incidents in 2011 involving Australian cattle being mistreated in Indonesia. In 2011, footage was publically released, showing the violent mistreatment of Australian cattle in Indonesia. An enormous public backlash followed the ABC's airing of the footage. The Australian federal government was forced to suspend live cattle exports to Indonesia at a great cost to both buyers, sellers and the industry more broadly in both Australia and Indonesia. Measures taken in this design aim to safeguard the program from similar incidences.

Why animal welfare is important in this program:

- Economic reasons, production

Low standards of animal welfare include both mistreatment (such as violent handling) and neglect (such as not providing animals enough food or water). Violent handling of cattle results in a stress response, including a higher level of cortisol in the blood stream. Over the long term, high levels of cortisol negatively affect the productivity of cattle in ways such as reduced weight gain, reduced fertility and a higher likelihood of abortion. Stress directly prior to slaughter is proven to decrease the quality of beef. Direct neglect of animals, such as starvation or dehydration, also reduces productivity in the same ways. The link between improved animal welfare and improved productivity and efficiency is clear and provides economic motivation to ensure animal welfare standards are upheld.

- Human health

Maintaining animal health is a key part of upholding animal welfare, and this includes reducing the risk of animals contracting infectious diseases. Not only does disease reduce the productivity of cattle, it may affect human health. It is estimated that 75% of emerging infectious diseases are zoonotic (transferred from animals to humans). Close contact with, or consuming products from diseased cattle may result in human disease, such as Variant Creutzfeldt-Jakob disease or serious infection with *Escherichia coli* strains such as O157:H7. Maintaining high standards of animal welfare, including animal health, is important for reducing the risk of zoonoses.

- Values of DFAT and Australia, including as it relates to social licence

The final, and perhaps the most important reason to ensure animal welfare as far as DFAT is concerned, is the direct relation of animal welfare to the social licence to operate, particularly from the Australian public. Degradation of animal welfare standards has in the recent past, in Indonesia in 2011 in particular, resulted in a huge public pressure to end or ban live exports, and backlash against the government ultimately responsible for the trade. To maintain any program involving Australian

cattle, it is important that DFAT do not lose the social licence to operate their programs which are so important in improving development outcomes in the regions and industries involved.

Management Plan

Animal welfare in the export of live cattle is well regulated in Australia. The risk of animal welfare issues increases as soon as animals disembark the vessel in Indonesia.

The program will consider measures to ensure welfare at all stages of the cattle's journey: (in Australia) from farm to boat, during transport, (in Indonesia) on land transport from port to plantation and should support enterprises where necessary with access to registered slaughterhouses in the advent that pilot schemes are aborted. This is demonstrated in Figure 2.

Possible issues during transport in Indonesia from port to farm:

- Overcrowding in holding pens, trucks, ferries
- Lack of adequate feed/water
- Lack of rest stops
- Lack of access to veterinary care
- Truck/ferry breakdown, lack of emergency plan

Mitigation: The program, during implementation, will look to work with importers who can ensure OIE standards will be upheld during the transportation of cattle from port to final destination. Where necessary the program will work with these importers to ensure that they can undertake small scale deliveries safely and in a commercially viable way in the first instance, before scaling up.

Possible issues on farm:

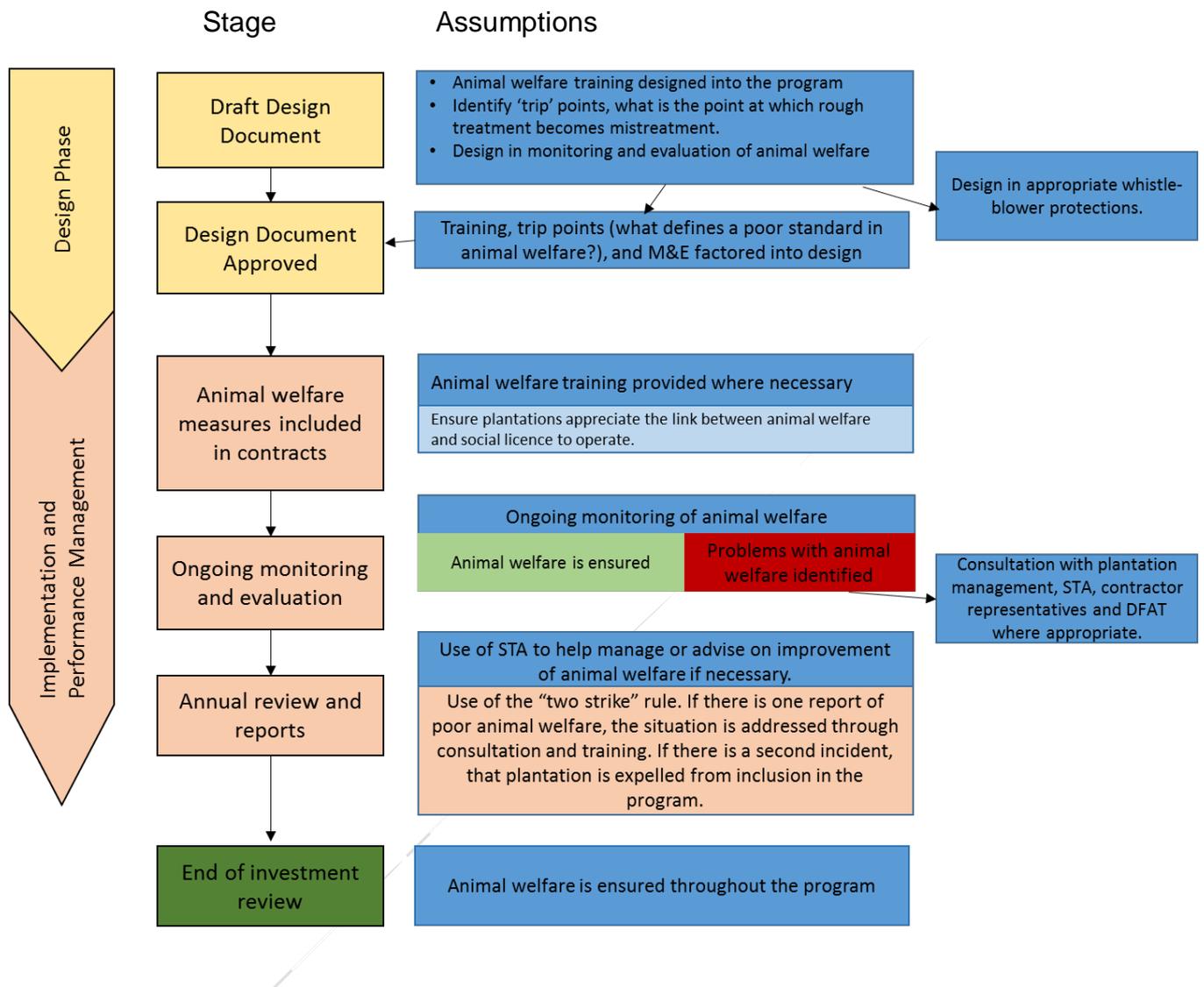
- Lack of adequate feed/water
- Animal health and disease issues
- Violent handling
- Selling cattle to unapproved facilities
- OIE non-compliant slaughter of cattle.

Mitigation: Animal welfare and husbandry training will be provided to all partnerships as a matter of priority. As mentioned above, the happier and healthier the cattle, the more calves they are likely to produce. This will be the centre point of the training to provide an economic motivation to uphold welfare standards.

As part of the M&E plan, the program will constantly monitor all partnerships, including frequent on-site visits by program staff. Animal welfare will be assessed as part of this.

In addition, the program should consider developing a "Whistle-blower" policy. If cattle are being mistreated, the program should encourage staff to contact the contractor via an anonymous email address or phone number. This whistle blower line would go directly to the program Team Leader, who would then investigate the claims, escalate to DFAT and if necessary commence the close out of a pilot.

Figure 2: Animal welfare management plan





Annex 9: Risk Matrix

Risk and Potential Impact	Likelihood	Consequenc	Rating	Management Responses
Lack of successful pilots- Program may find lack of commercially viable proposals, due to low levels of capacity and the marginal nature of potential investments.	Possible	Major	High	Ensuring full engagement with a full range of industry players, models and geographical locations and keeping criteria for site selection inclusive and flexible, should allow for some successful pilots. In addition stakeholder expectations of what this program can achieve will need to be managed through use of the M&E system to pinpoint why businesses failed and clear messaging surrounding economic viability.
Animal Welfare- Potential for poor treatment of animals imported for breeding due to lack of capacity and appropriate technology, undermines reputation of Australian-Indonesian bilateral cattle trade.	Possible	Major	High	Ensure partnership agreements include strict guidelines on animal welfare, provide technical assistance to ensure compliance including veterinary access and primarily target business partners who value their reputations relating to AW. Apply the animal welfare whistleblowing and monitoring system.
Reputational- Working with, and being seen to support, oil-palm plantations may have a reputational risk for the Australian government	Possible	Moderate	High	Have clear messaging that the Australian government is not supporting the expansion of oil-palm plantations, and is focused on assisting Indonesia to build its breeding herd using the land it already has available.
Reputational –Partners do various things which cause reputational damage to Australia. Examples could include animal welfare but also getting involved in court cases, selling on their breeding stock to disreputable owners. If Australia’s reputation is damaged by association, our low tolerance for negative publicity could force the amendment or closure of the program.	Possible	Major	High	Due diligence assessments will be conducted by the program of all potential partners. Where major reputational risks are identified these businesses will be excluded and/or risk mitigation measures will be put in place in agreements. Regular monitoring of partner compliance. Program will not fund projects that involve displacement or resettlement.

Annex 9: Risk Matrix

<p>Fraud and Fiduciary –Partners commit fraud in relation to contracts with program or renege on deals.</p>	Possible	Moderate	High	<p>Due diligence assessments will include examination of fraud and fiduciary risks for individual enterprises.</p> <p>Program contracts with private sector will be limited to business investment.</p> <p>Where possible back end the structure of deals so business assume risk up front.</p>
<p>Business Climate – Regulatory changes by Government on Australian or Indonesian side reduce likelihood of continued breeding investment.</p>	Unlikely	Moderate	Low	<p>Program to proactively manage dialogue with regulators and government actors through the Partnership to gain early understanding of changes that may impact program implementation.</p> <p>Current government bilateral policy is very firmly behind breeding program objectives, so should not be an issue.</p>

Annex 9: Risk Matrix

<p>Environmental – Although grazing cattle under palm holds great potential to both reduce environmental impacts from palm oil plantations, there are still some risks relating to soil compaction and run-off, as well as palm production itself and potential reputational issues.</p>	Unlikely	Minor	Low	<p>Program is obliged to ensure full legal compliance with Australian Environmental Protection and Biodiversity Conservation Act (EPBC), and local environmental laws.</p> <p>Program to develop an Environmental Management System that includes process for assessing environmental risks and mitigation strategies. This may include full Environmental Impact Assessments where a major risk is identified.</p>
<p>Business Failure – Where a business that is a partner in the program fails or withdraws</p>	Possible	Minor	Low	<p>Program to maintain a portfolio of investments which means that the failure of a single partnership would have only a minor impact on testing the range of breeding models.</p> <p>Program to focus on existing producers rather than new entrants to the field, but not to the exclusion of new partners who show the appropriate level of capital investment and capacity to make a new operation viable.</p> <p>Deals to stipulate that continued program support is contingent on demonstrated economic viability. Exit strategies negotiated with the partner at the outset.</p>