



Business Guidelines and Opportunities for Heifer Importation for Dairy Smallholders in Indonesia

July 2018



Australian Government Australian Centre for International Agricultural Research





Ministry of Agriculture Indonesia





Contents

Abbreviations
1. Acknowledgments
2. Project Description
3. Background
4. An overview of Indonesia's dairy industry and the potential to increase productivity through increasing the size of the national dairy herd
4.1. Current supply and demand of dairy products in Indonesia7
4.2. Population of dairy cows in Indonesia7
5. Government of Indonesia (GOI) policies relating to dairy development and heifer importation
5.1. Policies relating dairy development in Indonesia7
5.2. A review of relevant Government of Indonesia policies relating to heifer importation and national herd investment
5.3. Government of Indonesia policies relating to the funding of heifer importation
6. Importing heifers into Indonesia: logistics, quarantine and other regulations
6.1. Animal Quarantine and Biosafety Centre (IAQA)10
6.2. Port of entry to Indonesia
6.3. Heifer importation process
6.4. Agents to assist with heifer importation11
7. An overview of successful examples of Indonesian dairy industry growth from heifer importation
7.1. Ensuring that the imported breed meets the purpose of the milk processing business and the farm11
7.2. In regard to selecting breeds suitable for farming systems, a number of factors should be considered: .12
7.2.1. Is the farm lowland or upland in a cooler environment? Does the farm have infrastructure to keep cows cool?
7.2.2. Does the farm have adequate feed resources to sustain large cows?
7.2.3. What is the ideal age to import heifers?
7.2.4. What is the preferred way to transport heifers – by sea or air?
7.2.5. Is there a better time of the year to buy heifers?
7.2.6. Final comments
8. Potential models of government, private and farmer investment to import dairy heifers into Indonesia13
8.1. Indonesia-Australia Commercial Cattle Breeding
8.2. Loan Disbursement of People's Business Credit
8.3. Partnerships for Indonesia's Sustainable Agriculture (PISAgro)14
8.4. Cow Leasing
8.5. Heifer International "Passing on the Gift"16
9. Key breed attributes that will lead to greater heifer productivity and longevity in Indonesian small holder systems – importing from countries with similar environments

Challenges of dairying in the tropics
High heat loads for <i>Bos taurus</i> (European)16
Greater incidence of disease and pests16
Forage quality
Lack of access to cost-effective, high quality energy and protein supplements
10. Which other tropical dairy industries have similar environmental challenges to Indonesia? Are they a potential source of heifers for Indonesia?
Appendix 1 – Participants of the workshop: " <i>Importing dairy heifers into Indonesia: Opportunities and challenges for growing the national herd</i> " held at the Santika Hotel, Bogor on 28 September 2017

Tables and Figures

Table 1. Transportation options for heifer importation	12
Figure 1. Demand, supply and importation of dairy products in Indonesia: 2011 to 2022.	7
Figure 2. The size of the Indonesia dairy herd: 2009 to 2016	8
Figure 3. Major tropical and subtropical dairying countries and regions.	17
Figure 4. Numbers and values of heifers exported from Australia between 2006 and 2017	17

Publication details

This report was compiled as a deliverable under the Australian Centre for International Agricultural Research (ACIAR) funded research project '*AGB*/2012/099: *Improving Milk Supply, Competitiveness and Livelihoods of Smallholder Dairy Chains in Indonesia*' (IndoDairy).

Published 24 July 2018 by the Centre for Global Food and Resources, The University of Adelaide.

Available online at: www.indodairy.net

Report authors and contributors:

- Dr. Brad Granzin, Australasian Dairy Consultants
- Dr. Erwidodo, The Indonesian Centre for Agricultural Socio-Economic Policy Studies (ICASEPS), The Indonesia Agency for Agricultural Research and Development (IAARD)
- Vyta Hanifah, The Indonesian Centre for Agricultural Technology Assessment and Development (ICATAD), IAARD

For more information about the report or the project, contact Jack Hetherington (jack.hetherington@adelaide.edu.au)

Disclaimer

These guidelines have been completed and compiled by University of Adelaide (UoA) on behalf of project partners. There is no guarantee expressed or implied by UoA as to the information published, nor information provided by third parties. UoA will not accept any liability for any financial loss for the advice provided in these guidelines. Third parties referred to in these guidelines are provided for information only and not endorsed.

Abbreviations

ACIAR	Australian Centre for International Agricultural Research
AMF	Anhydrous milk fat
AUD	Australian dollar
BMF	Butter milk fat
BPD	Regional Development Bank (Bank Pembangunan Daerah)
BSE	Bovine Spongiform Encephalopathy
FMD	Foot and Mouth Diseases
GKSI	Indonesian Dairy Cooperatives Group
GOI	Government of Indonesia
IACCB	Indonesia-Australia Commercial Cattle Program
IAQA	Animal Quarantine and Biosafety Centre
ICARD	Indonesian Centre for Animal Research and Development
ICASEPS	The Indonesian Centre of Agricultural Socio-Economic Policy Studies
IDR (Rp)	Indonesian rupiah
kg	Kilogram
KUD	Dairy village co-operatives (Koperasi unit desa)
KUR	People's Business Credit Scheme and Regulation (Kredit Usaha Rakyat)
MBM	Meat and Bone Meal
PISAgro	Partnerships for Indonesia's Sustainable Agriculture (PISAgro)
RVF	Rift Valley Fever
SB-IPB	Bogor Agricultural University Business School (Sekolah Bisnis Institut Pertanian Bogor)
SMP	Skim milk powder
TMR	Total mixed ration
WMP	Whole milk powder
WOAH/OIE	World Organization for Animal Health/Office International des Epizooties

1. Acknowledgments

The project team would like to acknowledge the major investors of *IndoDairy - Improving milk supply, competitiveness and livelihoods in smallholder dairy chains in Indonesia*: The Government of Indonesia, the Australian Centre of International Agricultural Research (ACIAR), the Centre for Global Food and Resources - University of Adelaide, the Indonesian Centre for Animal Research and Development (ICARD), Bogor Agricultural University and the Indonesian Centre of Agricultural Socio-Economic Policy Studies (ICASEPS).





who contributed to the facilitation and participation in the workshop titled "*Importing dairy heifers into Indonesia: Opportunities and challenges for growing the national herd*" held at the Santika Hotel, on 28 September 2017 at Bogor, West Java. The presentations and minutes from this meeting provided the basis for these guidelines.

Thanks go to Rida Akzar, Vyta Hanifah, Jack Hetherington and Dr Sahara for organising the workshop, Dr Arief Daryanto for facilitating, and those who presented on the day: Ir. Jafi Alzagladi, Deputy Assistant of Livestock and Fisheries in Coordinating Ministry for Economic Affairs; Dr Cahyani Widyastuti (Head of Sub Directorate for Processing – Directorate General of Livestock and Animal Health); Dr. Mujiatun (Head of Sub Division for Imported Animal, Indonesia Agency for Agricultural Quarantine); Heru Prabowo, Greenfield Indonesia; Dr Erwidodo from PSEKP; Mr Jack Hetherington from the University of Adelaide and Dr Brad Granzin from Australasian Dairy Consultants. Special thanks to Vyta Hanifah, Dr Erwidodo and Dr Brad Granzin for writing these guidelines.



2. Project Description

These guidelines, *Business Guidelines and Opportunities for Heifer Importation for small holders in Indonesia*, is a deliverable of the research project *IndoDairy - AGB/2012/099: Improving milk supply, competitiveness and livelihoods in smallholder dairy chains in Indonesia* (2017-2020) funded by the Australian Centre for International Agricultural Research (ACIAR). This project arose due to the high priority the Indonesian government has placed on dairy industry development. This priority aligns closely with ACIAR research priorities related to strengthening livestock management and marketing systems in Indonesia as well as improving smallholder access and competitiveness in rapidly transforming markets.

The dairy farmers in West Java and North Sumatra face a multitude of challenges ranging from economies of scale, limited forage availability and quality, lack of knowledge in animal welfare and health practices, and business management skills. This situation has created a need for identification of whole of chain issues and capacity building exercises for the benefit of dairy farmers to ensure growth and sustainable development of the sector.

The aim of this project is to increase milk supply (quantity and quality) by 25% and net-household incomes by 2020 for at least 3,000 dairy producers in West Java and North Sumatra, Indonesia.

The primary objectives of IndoDairy are:

- 1. Identify and recommend strategies and policies to support development of sustainable, profitable and smallholder-inclusive dairy supply chains in North Sumatra and West Java;
- 2. Identify barriers to adoption of profitable management practices and farm business models and develop strategies to inform development of extension programs in West Java and North Sumatra;
- 3. Develop, pilot and evaluate best-bet dissemination to improve adoption of innovative dairy management practices by smallholder farmers in West Java.

Key investors in the project are: The Government of Indonesia (GOI), ACIAR, the University of Adelaide, the Indonesian Centre for Animal Research and Development (ICARD), Bogor Agricultural University and the Indonesian Centre of Agricultural Socio-Economic Policy Studies (ICASEPS).

For more information about the project, please visit:

www.indodairy.net

3. Background

Increasing the size of the Indonesian dairy herd is fundamental to increasing national milk supply from smallholder dairy farms. Increasing the number of heifers imported annually is one option to achieving this outcome. This guideline covers several topics relating to this:

- An overview of Indonesia's dairy industry and the potential increase in productivity through increasing the size of the national dairy herd;
- Government of Indonesia policies relating to dairy development in Indonesia and heifer importation;
- Heifer importation processes and logistics;
- Critical success factors relating to heifer importation;
- Identification of potential sources and models of government, private and farmer investment to support heifer imports;
- Key breed attributes that will lead to greater heifer productivity and longevity in small holder systems;
- Opportunities to import heifers from other tropical and subtropical dairying regions, such as northern Australia.

Much of the information presented in these guidelines are the outcomes from a workshop held on 28 September 2017 in Bogor, West Java. Contributors to this workshop are shown in Appendix 1. It is also the intention of the IndoDairy project team to review these guidelines annually with the last edition being published in January 2020.

4. An overview of Indonesia's dairy industry and the potential to increase productivity through increasing the size of the national dairy herd

4.1. Current supply and demand of dairy products in Indonesia

Figure 1 shows the historic, current and future demand and domestic supply of dairy products in Indonesia. In late 2017, annual demand for dairy products in Indonesia was estimated at 4.1 million tonnes milk equivalent. Of this demand, 3.1 million tonnes was being imported to supplement domestic milk production of 1.0 million tonnes. Annual growth in demand of dairy products in Indonesia is forecast to grow at 5% with domestic production projected to increase at 4.5% per year. Given these forecasts, the self-sufficiency of the Indonesian dairy industry to meet future consumer demand will reduce from 21% in 2016 to approximately 19% in 2022.

4.2. Population of dairy cows in Indonesia

Figure 2 shows the historic population of the Indonesian dairy herd over the eight years between 2009 and 2016. 98% of Indonesia's milk production is concentrated in Java. Data shows little change in the size of the national herd when the population in 2009 is compared to 2016. There has been however significant variations in the national herd size over these eight years. A major factor causing a reduction in the size of the Indonesian dairy herd in 2013 were high beef prices. This lead to the slaugther of approximately 28% of the nation's herd. Between 2013 and 2016, there was steady growth in the size of the nation's herd.

5. Government of Indonesia (GOI) policies relating to dairy development and heifer importation

5.1. Policies relating dairy development in Indonesia

As noted earlier, Indonesia is not self-sufficent in meeting the local demand for dairy products. The majority of dairy products are manufactured from imported anhydrous ingredients such as skim milk powder (SMP), whole milk powder (WMP), anhydrous milk fat (AMF) and butter milk powder (BMP). Countries exporting to Indonesia includes New Zealand, Australia, Thailand, USA and Europe.

There are 66 companies in Indonesia involved in the manufacture of dairy products. Within these companies, data from GKSI (Indonesian Dairy Cooperatives Group) shows that only 14 utilise domestic fresh milk. These companies are shown below with their annual domestic milk intake shown in brackets.



Figure 1. Demand, supply and importation of dairy products in Indonesia: 2011 to 2022.



Figure 2. The size of the Indonesia dairy herd: 2009 to 2016.

- 1. PT Nestle Indonesia (398.5 ton)
- 2. PT Indolakto (Indofood group) (254 ton)
- 3. PT Frisian Flag Indonesia (194 ton)
- 4. PT Ultrajaya Milk Industry Tbk (191 ton)
- 5. PT Greenfields Indonesia (120 ton)
- 6. PT Diamond Cold Storage (100 ton)
- 7. PT So Good Food Manufacturing (36 ton)
- 8. PT Cisarua Mountain Dairy (13 ton)
- 9. PT Sarihusada Generasi Mahardika (Danone Group) (7 ton)
- 10. PT Garudafood Putra Putri Jaya (5 ton)
- 11. CV Cita Nasional (1.5 ton)
- 12. PT Yummy Food Utama
- 13. PT Bukit Baros Cempaka
- 14. PT Industri Susu Alam Murni (ISAM) (7 ton)

There are various models in place regarding how these companies access their milk supply. Some have their owns farms, others source milk from co-operatives (KUDs), while others source milk directly from farms.

A major GOI policy regarding dairy development in Indonesia is the Blue Print of Indonesia Dairy Industry 2013-2025. Key to this policy was the development of dairy regions outside of Java. Some potential provinces proposed for development are: North Sumatra (Karo, Deli Serdang), Riau (Kampar), West Sumatra (Padang Panjang), South Sumatra (Pagar Alam, Muara Enim), Bengkulu (Rejang Lebong, Kepahian), Jambi (Kerinci), South Kalimantan (Banjarbaru), South Sulawesi (Enrekang, Sinjai), North Sulawesi (Minahasa, Tomohon), Bali (Bangli) and West Kalimantan (Kota Pontianak).

In order to create an enabling environment for the development of milk processing businesses, the GOI has set a number of regulations. These policies generally relate to an integration between the factory and independent dairy farm, or a partnership between a cooperative and/or dairy farmers. The list below is a summary of regulations relating to dairy farming, milk processors and industry partnerships:

- 1. Government Regulation (PP) Number 6/2013: in Chapter 5, cites that "Partnerships should improve the synergy among actors in milk processing industries";
- 2. Law (UU) Number 41/2014: in Article 31 stated that "Smallholders could build a business partnership in raising cattle based on a mutual agreement, strengthen each other, profitable, respect each other, responsible, interdependence and fairness";

- 3. Government Regulation (PP) Number 9/2016: regarding incentive in the form of a tax allowance facility for business actors in infant food processing, fresh milk and cream milk processors industry and powder and sweetened condensed milk processors;
- 4. Decree of Minister of Agriculture Number 13/2017: regarding livestock business partnerships, covering: types of business; business actors, pattern of business partnership; terms and conditions; guidance and monitoring;
- 5. Decree of Minister of Agriculture No. 26/2017: regarding milk supply and distribution, covering: supply and distribution of Domestic Fresh Milk (DFM) partnerships guidance and monitoring. Supply refers to productivity, dairy cattle population, and milk quality.

For more information, please refer to the following links:

- <u>http://gksi-jawabarat.co.id</u>
- www.kemenperin.go.id/statistik/exim.php
- Ditjenpkh 2017, Livestock and Animal Health Statistics 2017, (ebook)

5.2. A review of relevant Government of Indonesia policies relating to heifer importation and national herd investment

There are various Indonesian government regulations that relate to the importation of dairy heifers. Business's intending to import heifers are advised to check for updates or changes to these policies and regulations before proceeding.

The list of policies relating to large ruminant importation (including dairy heifers) is as follows:

- 1. Government Regulation (PP) Number 82/2000, regarding animal quarantine;
- 2. Minister of Agriculture's Decree Number 113/ 2013, covering animal quarantine policies regarding the importation of breeding cattle, heifers, and cattle destined for slaughter;
- Minister of Agriculture's Decree Number 44/2014 regarding place of entry and exit of animal disease carrier and plant disease quarantine (this decree is amending Decree of the Minister of Agriculture No. 94/2011);
- 4. Minister of Agriculture's Decree Number 70/2015, regarding animal quarantine installations;
- 5. Minister of Agriculture's Decree Number 49/2016, regarding importation of large ruminants into the territory of the Republic of Indonesia;
- 6. Minister of Trade's Decree Number 37/2016 regarding provisions on export and import of animal and animal products (this decree is amending Minister of Trade's Decree Number 5/2016);
- 7. Minister of Trade's Decree Number 59/2016 regarding the provisions on the export and import of animals and animal products;
- 8. Minister of Trade's Decree Number 13/2017 regarding the amendment to the Minister of Trade's Decree Number 59/2016 on provisions on the export and import of animals and animal products;
- 9. Minister of Agriculture's Decree Number 13/2017 regarding Partnerships in Livestock Farming;
- 10. Minister of Agriculture's Decree Number 26/2017 regarding supply and distribution of milk that also addresses multi-stakeholder partnerships;
- 11. Minister of Agriculture's Decree Number 02/2018 on the Amendment of Minister of Agriculture's Decree Number 49/2016 on the importation of large ruminants into the territory of the Republic of Indonesia;
- 12. Minister of Trade's Decree Number 20/2018 on the second amendment to the Minister of Trade's Decree Number 59/2016 on provisions on the export and import of animals and animal products.

5.3. Government of Indonesia policies relating to the funding of heifer importation

At the time of writing these guidelines, there are no specific GOI government funding schemes supporting heifer importation. However, there was a decree from the Coordinating Minister of Economic Affairs

(Permenko) No 9/2016, administering the People's Business Credit scheme (Kredit Usaha Rakyat-KUR) to support and facilitate heifer importation, as well as developing dairy farming businesses. This decree was recently amended in November 2017 to become a new Permenko No 11/2017 and effectively implemented in January 1, 2018. The People's Business Credit scheme is discussed further in section 8.2.

For more information, please visit the following websites:

- <u>www.karantina.pertanian.go.id</u>
- http://karantina.pertanian.go.id/page-72-pedoman-karantina-hewan.html
- http://karantina.pertanian.go.id/page-12-impor-hewan-dan-produk-hewan.html
- <u>http://karantina.pertanian.go.id/page-92-daftar-perusahaan-teregistrasi-karantina-hewan.html</u>

6. Importing heifers into Indonesia: logistics, quarantine and other regulations

Importing dairy heifers into Indonesia falls under several government agencies and their respective regulations.

6.1. Animal Quarantine and Biosafety Centre (IAQA)

The IAQA operates under Ministry decree No. 43/2015. It has the key responsibility to implement technical protocols regarding live animal quarantine. This includes the preparation of technical policy, provision of technical guidance, monitoring and evaluation.

IAQA has 50 operational units across Indonesia. With respect to heifer importation, it has specialised Animal Quarantine Installations and a Quarantine Island. The Animal Quarantine Installations are placed in the same city with ports of entries, but some are located in other cities near the port. Currently, Quarantine Island is under assessment.

6.2. Port of entry to Indonesia.

IAQA has several ports of entries to Indonesia: 29 airports, 87 sea port/river port and 13 cross border checking posts.

Heifers arriving from Australia are imported through one of these ports depending on the country of origin and the final destination in Indonesia. Heifers have to meet the requirements at the pre-border, border and postborder criteria during the initial inspection process in the Animal Quarantine Installations assigned to ports of entry.

There are eight decision points within the importation process. These are referred to as the 8-P in Bahasa. They are:

- P1: Pemeriksaan (examination/inspection)
- P2: Pengasingan (isolation)
- P3: Pengamatan (observation)
- P4: Perlakuan (treatment)
- P5: Penahanan (detention)
- P6: Penolakan (rejection)
- P7: Pemusnahan (destruction)
- P8: Pembebasan (release)

6.3. Heifer importation process

Under Indonesian regulations, the exporting country must be free from Foot and Mouth Diseases (FMD), Rift Valley Fever (RVF) and Contagious Bovine Pleuropneumonia. This status is certified by a Peste des Petit Ruminant base on World Organization for Animal Health/Office International des Epizooties (WOAH/OIE) declaration.

The exporting country must also have negligible or controlled Bovine Spongiform Encephalopathy (BSE) risk based on a WOAH/OIE declaration. This includes having no cases of BSE over the last seven years and not allowing ruminant feeds containing Meat and Bone Meal (MBM).

The exporting country must also have a surveillance programme for antibiotic and hormone residues as well as other substances that may be dangerous to animal and human health. Any imported heifers must go through withdrawal protocols for antibiotics and growth hormone.

Exporting farms must be Registered Premises/Approved Premises and follow animal welfare principles and good farming practices.

Further information regarding procedures for importing heifers to Indonesia can be found at the following websites:

- Agency for Agriculture Quarantine: <u>http://karantina.pertanian.go.id/</u>
- MICOR Manual of Importing Country Requirements: <u>https://micor.agriculture.gov.au</u>

6.4. Agents to assist with heifer importation.

Within Indonesia and Australia, there are various agents that will facilitate the importation of livestock into Indonesia. The list below has the details for Indonesian and Australian agents involved in international dairy heifer trading. Please check their websites for their latest status regarding facilitating heifer trade to Indonesia.

Indonesian agents:

- PT Greenfields Indonesia: <u>http://greenfieldsindonesia.web.indotrading.com/contact</u>
- PT Raffles Pacific Harvest: Sukawangi, Jalan Rafflesia Blok Pari, Rancabango, Tarogong Kaler, Garut Regency, West Java 44151; Phone: (0262) 2804531.

Australia agents:

- Australasian Global Exports: <u>www.globalexp.com.au</u>
- Australian Rural Exports (Austrex): <u>www.austrex.com.au</u>
- Austock Rural Pty Ltd: <u>www.austockrural.com.au</u>
- Breedex Australia Pty Ltd: <u>www.haafco.com</u>
- Dairy Livestock Exports Pty Ltd: email: <u>adam@dairylivestockexports.com.au</u>
- Frontier International Agri Pty Ltd: <u>www.frontierinternational.com.au</u>
- Integrity Australia Pty Ltd : <u>www.integrityaustralia.com.au</u>
- Landmark International : <u>www.landmarkinternational.com.au</u>
- Lembiru Livestock P/L: <u>www.lembiru.com</u>
- Nasna International Pty Ltd: <u>www.nasna.com.au</u>
- Total Livestock Genetics: <u>www.tlg.com.au</u>
- Wellard Rural Exports Pty Ltd: <u>www.wellardgroup.com.au</u>

7. An overview of successful examples of Indonesian dairy industry growth from heifer importation

PT Greenfields is a progressive large-scale dairy business. Its farm facilities are located in East Java.

Over the last twenty years, it has successfully imported dairy heifers from Australia and New Zealand and integrated these into their dairy farm of approximately 6,000 cows. Greenfields has achieved this outcome by focussing on the following aspects of heifer importation.



7.1. Ensuring that the imported breed meets the purpose of the milk processing business and the farm.

For a liquid milk processing business, Holstein Friesians are preferred due to their high yields and lower milk concentrations of fat and protein. For dairy businesses in the manufacturing of more concentrated products

such as butter and condensed milk, Jersey's or crossbreds are preferred due to their higher milk concentrations of fat and protein and consequently lower extraction costs per litre. Consideration should be given to crossbreds when a farm is supplying a processor with multiple markets.

7.2. In regard to selecting breeds suitable for farming systems, a number of factors should be considered:

7.2.1. Is the farm lowland or upland in a cooler environment? Does the farm have infrastructure to keep cows cool?

Jerseys are naturally more heat tolerant than Friesians and should be considered when heat stress may be an issue.



7.2.2. Does the farm have adequate feed resources to sustain large cows?

For every 100 kilogram (kg) in liveweight, a dairy cow requires an extra 1 - 2 kg of feed (dry basis, depending on feed quality) just to maintain herself. For a small holder herd with eight milking cows, this would equate to an additional four tonnes of dry feed over a year or another 12 kg of dry feed per day just to maintain a herd of larger frame size. While bigger frame cows may have the potential to give more milk, they will only do so if the feed is available and of suitable quality.

7.2.3. What is the ideal age to import heifers?

Importing heifers that are four to five months pregnant is desirable. Importing at this stage allows the heifer to acclimatise to her new environment before giving calf.

7.2.4. What is the preferred way to transport heifers - by sea or air?

Table 1 below highlights some of the differences between transporting heifers by air or sea.

Sea freight offers the advantages of larger consignment size and cheaper cost. Air freight offers the advantages of more flexibility in terms of timing and shorter transit time.

Considerations	Sea freight	Air freight
Size of consignment	Up to 2,000	Up to 200
Cost	Less than 300 AUD or 3 million IDR per heifer	More than 300 AUD or 3 million IDR per heifer
Flexibility In numbers and timing	Less	More
Travel time	8 – 12 days	1 day

Table 1. Transportation options for heifer importation.

7.2.5. Is there a better time of the year to buy heifers?

If heifers are being imported from countries that seasonally calve, such as New Zealand and Southern Australia, it is easier to find them after the main calving period. This is typically from August to October.

7.2.6. Final comments

It has been Greenfield's experience that to gain maximum return on investment it is important to get heifers back into calf and ensure they have a long and productive life. Importing heifers to have them calve only one time is a poor investment.

8. Potential models of government, private and farmer investment to import dairy heifers into Indonesia.

At the time of publication, the project team could not find any specific funding scheme or regulation that could provide direct funding to support the importation of dairy heifers into Indonesia. There are however GOI regulations, projects, schemes and other international business models which are related to this topic.

- Indonesia-Australia Commercial Cattle (IACCB) Program
- Regulation on People's Business Credit Scheme and Regulation (Kredit Usaha Rakyat-KUR)
- Stakeholder's Partnership in the Dairy sector (PISAgro-Dairy Working Group, ongoing IPS-Dairy Cooperatives partnerships)

8.1. Indonesia-Australia Commercial Cattle Breeding

The Indonesia Australia Commercial Cattle Breeding Program (IACCB) commenced in February 2016. It is a program established under the auspices of the Indonesia-Australia Partnership on Food Security in the Red Meat and Cattle Sector. The three-year, \$8 million IACCB project aims to pilot a range of different breeding partnership models and investment opportunities with the private sector to assess commercially sustainable approaches that can be upscaled to facilitate investment, innovation and expansion of beef cattle breeding in Indonesia into the future.



Key outcomes from IACCB are:

- To support the commercialization of cattle breeding in Indonesia.
- To provide financial assistance to selected partners and their breeding enterprises. This support comes in the form of business partnerships, resulting in an improvement in the partner's capacity and capability (knowledge, skills and physical capacity) across all aspects of commercially sustainable production and business practices. An outcome from this investment is that Indonesian farmers will be encouraged to expand their breeding programmes. In some instances, infrastructure such as electric fencing and cattle handling equipment is provided. The IACCB Program will also provide field staff for an initial period to assist partners with the implementation of new initiatives, to provide timely feedback to the IACCB team to keep new initiatives and processes on track, and to manage key risks such as those associated with animal welfare.
- Breeding enterprises are supported by a commercial partner. Commercial partners must co-invest in the pilot to received IACCB program support. Investments may include contributions of land, staff, infrastructure and other resources in-kind.

The IACCB has several indicators for success:

- Demonstrated commercially viable the cattle breeding business models
- Demonstrate increase in interest/investment in the sector; and
- Delivers a minimum target of 2,000 heifers and 100 bulls from Australian sourced cattle.

For more information, please visit:

The Indonesia Australia Commercial Cattle Breeding Programme: http://www.iaccbp.org

8.2. Loan Disbursement of People's Business Credit

As is common in developing countries, the availability and accessibility of business and investment credit are significant obstacles to the development of small and medium enterprises in the production and distribution sectors in Indonesia, including businesses in the general agricultural sector and dairy farming in particular.

Over the last 20 years, the GOI has issued several business credit policies that apply across sectors and business sectors, including the last one called people's business credit, which was first issued by the government through the Regulation (Decree) of the Coordinating Minister for Economic Affairs (Permenko) No. 9 of 2016. This Permenko Decree was amended to become the new Permenko No 11/2017 and was effectively implemented on January 1, 2018.

It is important to note that there are 12 new provisions on KUR in Permenko No 11/2017, as follows: (i) KUR interest rate reduction from 9% to 7% effective per annum, (ii) business group as potential KUR recipients, (iii) special scheme of KUR, (iv) multisector KUR scheme, (v) minimum regulation of KUR distribution to the production sector, (vi) credit payment mechanism after harvest and grace period provisions, (vii) the change of retail KUR to micro KUR, (viii) ceiling of micro-KUR of production and outside production sector, (ix) distribution of KUR along with other credit, (x) KUR's cost structure for Indonesian labour movement/placement, (xi) KUR for communities in the border areas, and (xii) KUR for optimization of joint business group (Kelompok Usaha Bersama-KUBE).

The government is targeting KUR distribution in 2018 amounting to 120 trillion IDR, an increase from 2017 of 106.6 trillion IDR. The number of beneficiaries receiving KUR in 2018 is targeted to reach 4 million beneficiaries. Distribution of KUR in 2018 is carried out by 15 commercial and private banks, 19 Regional Development Banks (BPD), four non-bank financial institutions and two cooperatives.

For more information, please visit:

- Website: <u>www.ekon.go.id</u>
- Twitter: @perekonomianRI
- Email: <u>humas.ekon@gmail.com</u>

8.3. Partnerships for Indonesia's Sustainable Agriculture (PISAgro)

The Partnership for Indonesia's Sustainable Agriculture (PISAgro) is a collaborative platform between the Indonesian government, public and private sector to support the Government of Indonesia's ambition to increase agriculture productivity sustainably as part of the effort to improve food security. PISAgro was founded in June 2011 at the World



Economic Forum on East Asia in Jakarta and was officially operational in 2012. The partnership is fully supported by the Coordinating Ministry for Economy, Ministry of Agriculture and Ministry of Trade.

PIS Agro 2020 goals are:

- A 20% increase in the production of selected commodities (rice, soybean, corn, palm oil, coffee, cocoa, potatoes, horticulture, dairy, rubber, beef cattle);
- A 20% increase in the welfare of farmers;
- A 20% reduction in greenhouse gas emissions.

PIS Agro-Dairy Working Group

Embedded in the PISAgro-Dairy Working Group is the PISAgro-Dairy Working Group. Its targets (by 2020) are:

- There will be an increase in skill level of 5,000 graduates from un-professional to "progressive farmers". Measures of this target are an improvement in cow ownership from five to eight cows and productivity improvements of 40%;
- There are 1,000 farmers managing profitable medium size farms of 20 cows producing an average of 18 litres per cow per day (over 5,000 litres per lactation);
- There are 100 "agripreneur" dairy farms with over 50 cows per farm, with total mixed ration (TMR) as the primary feeding system;
- A total of 200 ha of profitable fodder agriculture models across East Java;
- To achieve these targets, the PISAgro-Dairy Group has facilitated and invested in several activities:

- Access to more productive fodder varieties through nurseries;
- An on-farm corn silage program;
- A feeding / animal nutrition improvement program;
- A farm demonstrating feeding a total mixed ration;
- Demonstration farms practicing high levels of productivity and hygiene;
- A biogas implementation program;
- Farms demonstrating feeding water ad-libitum.

What have been the results to date?

To date, the PISAgro programme has engaged 20,000 farmers through 25 co-operatives.

PISAgro-Dairy Working Group Partners

The PISAgro project has some key partners:

- Nestlé Indonesia;
- Cargill Indonesia;
- Brawijaya University;
- Applied Research and Innovation Systems in Agriculture (ARISA);
- Balai Inseminasi Buatan Singosari;
- Invivo Indonesia;
- Dairy/milk cooperatives.

For more information, please visit:

www.pisagro.org

8.4. Cow Leasing

Cow leasing is a method of purchasing livestock which allows a farmer to access new livestock without the upfront capital. Cow leasing is common to many international dairy industries such as Australia and New Zealand.

What are the steps in cow leasing?

- The finance company purchases the livestock retaining ownership.
- The farmer leases the cow for a fee, keeping any offspring and milk harvested.
- The farmer can choose to buy the livestock from the finance company at some point in time.
- The farmer repays the finance company the Purchase Price + Financing Cost.
- The farmer receives any sales generated, minus the financer's margins.
- Depending on the agreement, some lessors may cover the costs for replacement cows, others require the farmer to cover these.

For more information regarding cow leasing, please see the following websites:

- CowBank: <u>www.cowbank.com.au</u>
- Westpac: www.westpac.com.au/business-banking/business-loans/agrifinance/livestock-lease/
- StockCo: <u>www.stockco.com.au</u>



8.5. Heifer International "Passing on the Gift"

Heifer International "Passing the Gift" is a project model which has the dual outcomes of the dissemination of improved cattle genetics to a large numbers of farmers (over time).



It has the following steps:

- An organisation/company purchases one pregnant cow and gives it to a farmer;
- The farmer owns the cow, but the farmer agrees that the first female calf will be "gifted" to another farmer;
- The farmer gets to keep all the milk sales and other offspring;
- This cycle is repeated.

For more information, please visit:

Heifer International: www.heifer.org

9. Key breed attributes that will lead to greater heifer productivity and longevity in Indonesian small holder systems – importing from countries with similar environments.

Dairy farming in the tropics is challenging. High cow heat loads, poor quality forages, increased animal health challenges from bacteria and parasites are all potential limitations to productivity. Historically, many high genotype cows imported into tropical small holder systems have only utilised one third of their genetic potential under typical management. Often reproduction failure and disease are key reasons why heifers are culled. The section below describes the challenges of dairying in the tropics and lists many of the reasons for the underperformance of *Bos taurus* (European) cows in this environment.

Challenges of dairying in the tropics

High heat loads for *Bos taurus* (European)

Ideally *Bos Taurus* cows prefer 5 – 20°C and low to moderate humidity:

- High heat loads leads to reduced intake, less energy for milk production and problems with reproduction;
- To overcome high heat loads for high producing dairy cows requires significant investment in infrastructure such as shading, sprinklers and fans.

Greater incidence of disease and pests

- Warm humid environments provide a suitable environment for disease causing bacteria e.g. mastitis
- More detrimental pests are often found in tropical regions e.g. parasites such as ticks, buffalo fly and their associated diseases such as tick fever and ephemeral fever;

Forage quality

- Tropical grasses such as Elephant grass have lower nutritional quality than temperate pasture such as ryegrass. This is due to their high concentrations of structural carbohydrates.
- As is the case in West Java, forage availability may also be limiting for some small holders.

Lack of access to cost-effective, high quality energy and protein supplements

• High energy supplements, such as grains, and high-quality protein supplements, such as vegetable protein meals, can be hard to access in some tropical regions.



Figure 3. Major tropical and subtropical dairying countries and regions.

10. Which other tropical dairy industries have similar environmental challenges to Indonesia? Are they a potential source of heifers for Indonesia?

Figure 3 above shows the major dairying countries located in the tropics.

Historically, Indonesia has imported heifers from New Zealand and from Victoria in southern Australia.

A potential strategy forward may be to import heifers from tropical countries such as Mexico, USA and northern Australia which are more genetically predisposed to the challenges of dairying in the tropics.

Are there heifers available internationally?

Figure 4 above shows the number of dairy heifers exported from Australia over the last decade and their average price. There is a relationship between the price Australian farmers have received for heifers and the amount supplied, with increased availability with increased prices.

The advent of technologies such as sexed semen and heat detection devices has meant an increase in the supply of heifers from the Australian dairy herd, despite the total national herd declining slightly over the last decade.



Figure 4. Numbers and values of heifers exported from Australia between 2006 and 2017.

For more information regarding heifer importation, please visit the following websites:

- Indonesian Agency for Agricultural Quarantine: <u>http://karantina.pertanian.go.id/</u>
- Department of Agriculture and Water Resources: <u>www.agriculture.gov.au</u>
- The Australian Livestock Export Corporation Ltd (LiveCorp): <u>www.livecorp.com.au</u>
- Stockair Global Livestock Transport: www.stockair.com.au



Appendix 1 – Participants of the workshop: "*Importing dairy heifers into Indonesia: Opportunities and challenges for growing the national herd*" held at the Santika Hotel, Bogor on 28 September 2017.

Name	Institutions/Organisations
Speakers	
Dr. Arief Daryanto	Business School IPB (SB IPB)
Dr. Tjahjani W	Directorate General of Livestock and Animal Health Indonesia
Dr. Erwidodo	Indonesian Center for Agricultural Socio Economic and Policy Studies (ICASEPS)
Dr. Mujiatun, Msi	Indonesian Agricultural Quarantine Agency, Ministry of Agriculture
Heru Prabowo	Greenfield Indonesia
Jafi Alzagladi	Coordinating Ministry of Economic Affairs
Jack Hetherington	University of Adelaide
Dr Brad Granzin	Australasian Dairy Consultants Pty Ltd
Participants	
Eno Suana	Cimory
Bambang Sutantio	Cimory
Budwi B	Fonterra
Efi L	Friesland Campina
Indra Wisudaputra	Neovia
Nia Pertiwi	Greenfield Indonesia
Helen	Meat and Livestock Australia
Umar	Meat and Livestock Australia
Toif Hidayatullah	Dinas Livestock and Fisheries Kab. Bogor
Shofia	Directorate General of Livestock and Animal Health Indonesia
Kunto Nugroho	Coordinating Ministry of Economic Affairs
Hadi Yanto	Coordinating Ministry of Economic Affairs
Nuraini	PPSNAk
Suherman	KPGS Cikajang
Ade Hikmat	KPGS Cikajang
Edi Djunaedi	KPS Cianjur
Adang S	KPBS Pangalengan
Nanang	KPS Bogor
Aan Supendi	GKSI Jabar
Ajat Sudrajat	GKSI Jabar
Ludwina Maria	ACIAR Country Office, Australian Embassy, Jakarta
Lisa Timmins	Department of Agriculture and Water Resources, Australian Embassy, Jakarta
Adhitya Rahmana	Business School IPB (SB IPB)
Indhy Aidha	Business School IPB (SB IPB)
Dr Wisri P	Indonesian Center for Animal Research and Development (ICARD)
Dr Endang R	Indonesian Center for Animal Research and Development (ICARD)
Dr Chalid Thalib	Indonesian Center for Animal Research and Development (ICARD)
Hasanatun	Indonesian Center for Animal Research and Development (ICARD)
Ir. Tati H	Indonesian Center for Animal Research and Development (ICARD)
Tessa Magrianti	Indonesian Center for Animal Research and Development (ICARD)
Ir Tri Bastuti	Indonesian Center for Agricultural Socio Economic and Policy Studies (ICASEPS)
Dr Ening A	Indonesian Center for Agricultural Socio Economic and Policy Studies (ICASEPS)
Dr Iwan S	Indonesian Center for Agricultural Socio Economic and Policy Studies (ICASEPS)
Dr. Sahara	Business School IPB (SB IPB)
Dr. Heti Mulyati	Business School IPB (SB IPB)
Vyta W. Hanifah	Indonesian Center for Agric. Technology Assessment and Development (ICATAD)
Rida Akzar	Business School IPB (SB IPB)
Bulan	Interpreter