

INDONESIA AUSTRALIA
RED MEAT & CATTLE
PARTNERSHIP



PROSPECTUS

BRAHMAN CROSS (BX)
CATTLE BREEDING BUSINESS:
USING CUT AND CARRY MODEL
100 HEIFERS



IACCB

Indonesia-Australia Commercial Cattle Breeding Program

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Disclaimer

This prospectus is prepared for the Indonesia-Australia Partnership on Food Security in the Red Meat and Cattle Sector (Partnership). We have made every effort to ensure the accuracy of information presented in this publication. However, the Partnership does not bear any responsibility for the accuracy or completeness of information or opinions contained in this publication. Readers must rely on their discretion in making decisions relevant to their interests.

BRAHMAN CROSS (BX) CATTLE BREEDING BUSINESS: USING CUT AND CARRY MODEL 100 HEIFERS

To start a Brahman Cross (BX) cattle breeding business using the cut-and-carry model with a herd of 100 heifers and 5 bulls will require an initial investment and working capital of IDR 2.722 billion. The business is projected to be cash flow positive in the third year. Calves are raised until two years old. During the first three years of operation, the business will have additional capital expenditure and operational expenditure of IDR 1.275 billion. Total working capital needed before achieving cash-flow positive condition amounts to IDR 1.825 billion. Considering the terminal value of herd closing stock, the Internal Rate of Return is projected to be 13.46% in year 10 with an NPV of IDR 545 million.

1. Summary of Investment

Business Development	Economic Calculation
Duration of operation 10 (ten) years	Initial investment and working capital required in year 1 IDR 2.722 billion
Herd size <ul style="list-style-type: none"> • 100 (hundred) cows • 5 (five) bulls 	Maximum investment before cash flow positive in year 3 amounts to IDR 3.998 billion (includes investment and operational costs)
Cut-and-carry breeding model with natural mating system	Positive cash flow in year 3
Potentially selling 266 head of progeny age 2 (two) years old with approximate live weight 369 kg	Cumulative surplus cash flow in year 10 IDR 3.719 billion
	Including the terminal value of herd closing stock, IRR (Internal Rate of Return) will reach 13.46% and an Net Present Value of IDR 545 million

This prospectus provides a financial summary for a smallholder breedlot using a cut-and carry cattle breeding production system. The prospectus uses the best-case scenario as experienced by an Indonesia-Australia Commercial Cattle Breeding Program (IACCBP) partner smallholder breedlot and the costings and assumptions are based on applied research conducted by IACCBP between 2016 and 2020. It assumes that cattle will be managed professionally and with a commercial approach to production. Although great results can be achieved many risks remain rearing Brahman Cross cattle at smallholder level. Additional information on commercial cattle breeding in Indonesia is available on www.iaccbp.org and <https://redmeatcattlepartnership.org>

Please scan QR Code to download the spreadsheet's calculation





2. Initial Capital Investment Required

No	Category	Qty	Unit	Price	Total
1	Cattle Purchase:				
	Breeding female	100	hd	IDR 18,500,000	IDR 1,850,000,000
	Breeding bull	5	hd	IDR 25,000,000	IDR 125,000,000
2	Breeding Center Pen	750	m2	IDR 200,000	IDR 150,000,000
3	Pen and Office Equipment				
	Cattle crush, digital weighing scale etc	1	set	IDR 17,500,000	IDR 17,500,000
	Water/electricity Installation	1	set	IDR 1,500,000	IDR 1,500,000
	Other ranch equipment and tools	1	set	IDR 7,500,000	IDR 7,500,000
	Three-wheeler	1	set	IDR 18,000,000	IDR 18,000,000
TOTAL					IDR 2,169,500,000

The initial capital investment ¹ required is IDR 2.169 billion with the following details:

- 100 (hundred) cows with weight around 380-400 kg
- 5 (five) 450-500 kg bulls
- Cost for pens, 750 m2, including 6m2 main pen/head for cows, handling/calving pen, loading/unloading ramp and forage and concentrate storage.
- Buying 1 (one) unit of local brand three-wheeler for transporting feed and manure and other purposes
- Buying 1 (one) set of equipment and supplies including locally made cattle crush, digital scale, buckets, shovels and other equipment as well as electricity/water or well installations.

¹ The initial investment value may vary depending on cattle purchasing price, type of infrastructure materials or quality of equipment. It does not include land purchase/rental cost for pens

3. Monthly Operational Costs

No	Category	Qty	Unit	Price/Unit	Total
1	Labour				
	Stockmen	4	person	IDR 2,000,000	IDR 8,000,000
	Administration staff	1	person	IDR 2,000,000	IDR 2,000,000
2	Utilities (water/electricity) etc	1	month	IDR 250,000	IDR 250,000
3	Pen/Cattle yard repair and maintenance	1	month	IDR 250,000	IDR 250,000
4	Vehicle repair and maintenance	1	month	IDR 250,000	IDR 250,000
5	Transportation and fuel	1	month	IDR 500,000	IDR 500,000
6	Others	1	month	IDR 250,000	IDR 250,000
TOTAL					IDR 11,500,000

- Estimated monthly operational costs² during the first year is IDR 11.5 million with an assumption of 3% yearly increase
- Annual operational costs comprised of:
 - o Labour cost of 4 stockmen³ and 1 administration staff
 - o Overhead cost for pens repair/maintenance, pen utilities, administration, communication, vehicle operations and other costs

4. Other Operational Costs

No	Category	Qty	Unit	Price/unit	Total
1	Animal health services (medicine, vitamins etc)	127	head	IDR 25,000	IDR 3.162.500
TOTAL					IDR 3,162,500

Beside the above monthly operational costs, there is an annual animal health related costs include medicines, vitamins and other health services.

The animal health cost is assumed IDR 25,000/hd/year and increases with 3% annually. This is categorized as a variable cost and calculated based on the average number of the herd stock in the respective year.

² The estimated operational cost may vary depending on animal health costs, number of workers during the initial stage, workers' wages and overhead costs components.

³ From year 2 onwards, the number of stockmen is automatically calculated with a ratio of 1:75 (one stockman can manage 75 head of cattle). Number of workers and the ratio could be adjusted based on the company's need and ability

5. Daily Operational Cost

No	Category	Qty	Unit	Price/unit	Total
1	Feed (intake) of Cows				
	Fresh forage	40.0	kg/hd/day	IDR 150	IDR 6,000
	Fresh concentrate	2.5	kg/hd/day	IDR 1,900	IDR 4,750
	Mineral Supplement	0.15	kg/hd/day	IDR 4,000	IDR 600
2	Feed (intake) of Growers				
	Fresh forage	22.4	kg/hd/day	IDR 150	IDR 3,400
	Fresh concentrate	1.4	kg/hd/day	IDR 1,900	IDR 2,700
	Mineral Supplement	0.10	kg/hd/day	IDR 4,000	IDR 400

Daily operational costs include feed cost⁴ for cows and calves, which consists of forage, concentrate and mineral supplementation⁵.

See the details below:

- Average feed cost of cows is IDR 11,350/head/day⁶.
- Average feed cost of calves after weaning is IDR 6,500/head/day⁷.
- Fresh forage cost IDR 150/kg (IDR 667/kg DM) is an estimation of average production cost⁸.
- It is assumed that feed costs will increase by 0.5% every year.
- Land: 17-23 ha of land will be required to meet forage production⁹.

4 Feed cost may vary depending on the feed composition, percentage of feed material required, percentage of dry matter in the commodities used, and feed materials price.

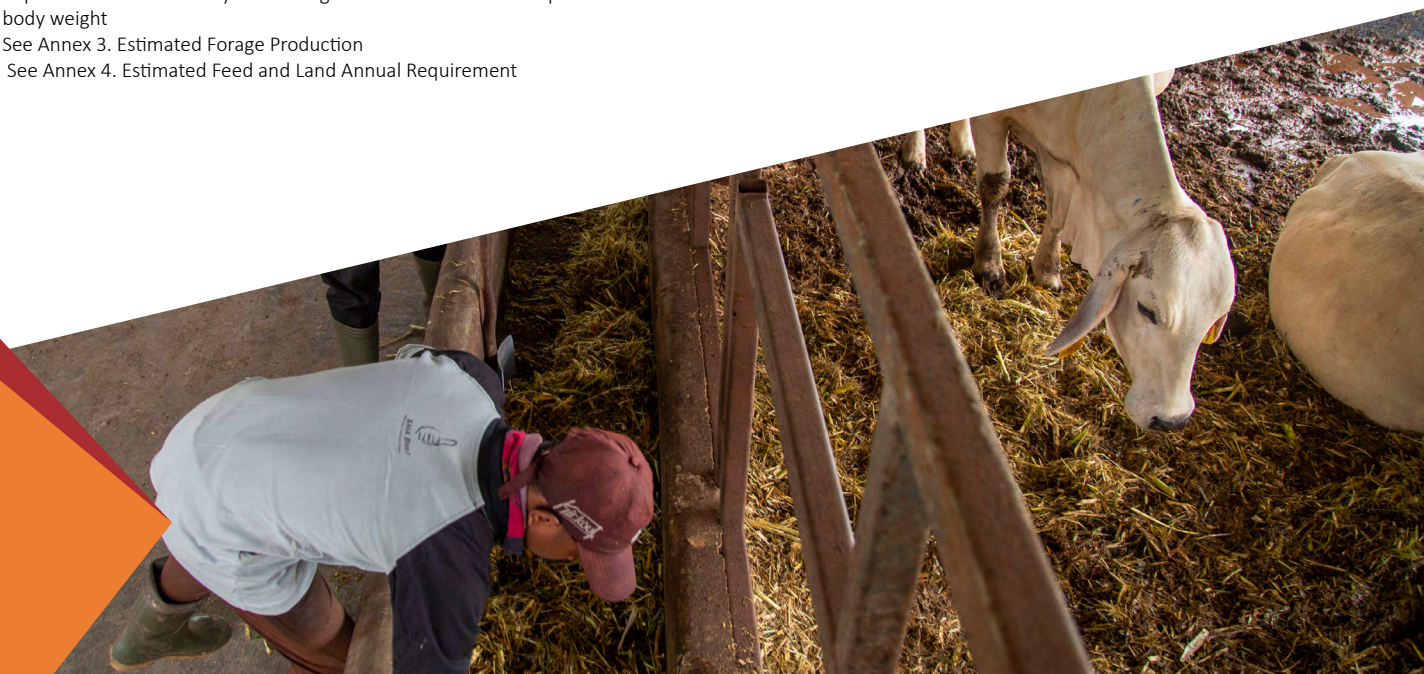
5 Mineral supplementation comprised of DCP (Dicalcium Phosphate or dicalcium phosphate), ZA (zwevelzure ammoniac or ammonium sulphur) and salt.

6 See more details in Annex 1. Feed Composition and Daily Need of cows. Feed commodities composition depends on the availability in each region. Changes in feed composition will affect cows body weight

7 See Annex 2. Feed Composition and Daily Need of Calves. Feed commodities' composition depends on the availability in each region. Variation in feed composition will affect calves body weight

8 See Annex 3. Estimated Forage Production

9 See Annex 4. Estimated Feed and Land Annual Requirement



6. The Assumption of Breeding Business Simulation and Cattle Stock Projection

	Year 1	Year 2	Year 3	Year 4	Year 5
Opening Stock					
Cows	100 hd	99 hd	78 hd	78 hd	81 hd
Bulls	5 hd	5 hd	5 hd	5 hd	5 hd
Female progeny	0 hd	22 hd	48 hd	52 hd	52 hd
Male progeny	0 hd	22 hd	48 hd	52 hd	52 hd
Total Opening Stock	105 hd	148 hd	179 hd	187 hd	190 hd
Female and Male Calves born	46 hd	54 hd	54 hd	54 hd	56 hd
Mortality					
Female and Male progeny	2 hd	2 hd	2 hd	2 hd	2 hd
Cows	1 hd	1 hd	1 hd	1 hd	1 hd
Bulls	0 hd	0 hd	0 hd	0 hd	0 hd
Total Mortality	3 hd	3 hd	3 hd	3 hd	3 hd
Replacement					
Bulls	0 hd	0 hd	0 hd	0 hd	5 hd
Total Replacement	0 hd	0 hd	0 hd	0 hd	5 hd
Cattle Sales					
Female progeny	0 hd	0 hd	6 hd	7 hd	7 hd
Male progeny	0 hd	0 hd	22 hd	26 hd	26 hd
Cull cows	0 hd	20 hd	15 hd	15 hd	16 hd
Cull bulls	0 hd	0 hd	0 hd	0 hd	5 hd
Total Cattle Sales	0 hd	20 hd	43 hd	48 hd	54 hd
Closing Stock					
Cows	99 hd	78 hd	78 hd	81 hd	83 hd
Bulls	5 hd	5 hd	5 hd	5 hd	5 hd
Female progeny	22 hd	48 hd	52 hd	52 hd	53 hd
Male progeny	22 hd	48 hd	52 hd	52 hd	53 hd
Total Closing stock	148 hd	179 hd	187 hd	190 hd	194 hd
Bulls : Cows Ratio	5%	6%	6%	6%	6%

	Year 6	Year 7	Year 8	Year 9	Year 10
Opening Stock					
Cows	83 hd	85 hd	87 hd	90 hd	92 hd
Bulls	5 hd	5 hd	5 hd	5 hd	5 hd
Female progeny	53 hd	55 hd	56 hd	56 hd	58 hd
Male progeny	53 hd	55 hd	56 hd	56 hd	58 hd
Total Opening Stock	194 hd	200 hd	204 hd	207 hd	213 hd
Female and Male Calves born	58 hd	60 hd	60 hd	64 hd	64 hd
Mortality					
Female and Male progeny	2 hd	4 hd	4 hd	4 hd	4 hd
Cows	1 hd	1 hd	1 hd	1 hd	1 hd
Bulls	0 hd	0 hd	0 hd	0 hd	0 hd
Total Mortality	3 hd	5 hd	5 hd	5 hd	5 hd
Replacement					
Bulls	0 hd	0 hd	0 hd	0 hd	0 hd
Total Replacement	0 hd	0 hd	0 hd	0 hd	0 hd
Cattle Sales					
Female progeny	7 hd	7 hd	7 hd	7 hd	7 hd
Male progeny	26 hd	27 hd	28 hd	28 hd	28 hd
Cull cows	16 hd	17 hd	17 hd	18 hd	18 hd
Cull bulls	0 hd	0 hd	0 hd	0 hd	0 hd
Total Cattle Sales	49 hd	51 hd	52 hd	53 hd	53 hd
Closing Stock					
Cows	85 hd	87 hd	90 hd	92 hd	94 hd
Bulls	5 hd	5 hd	5 hd	5 hd	5 hd
Female progeny	55 hd	56 hd	56 hd	58 hd	60 hd
Male progeny	55 hd	56 hd	56 hd	58 hd	60 hd
Total Closing stock	200 hd	204 hd	207 hd	213 hd	219 hd
Bulls : Cows Ratio	6%	6%	6%	5%	5%



- The initial cattle investment is 100 cows and 5 bulls
- The estimated number of calved cows in year 1 is only 45% or 45 head from total 100 head of cows. The progeny is assumed to be 50% (fifty percent) male and 50% (fifty percent) female. In year 2, the estimated calving rate is 55% and from year 3 onwards the estimated calving rate is 70% per year.
- The assumption of calves mortality rate is 5%
- Starting year 2, every year the unproductive cows which are 20% of total cows will be sold
- All breeding bulls are assumed unproductive by year 5 and will be sold in that respective year. To keep the bulls ratio of 5% (1 bull : 20 cows), 5 new productive bulls will be purchased to replace the sold ones.
- The quarter of female progeny (25%) will be sold at age 24 months and the others will be retained, grown up as cows. The sales of female progeny is started in year 3.
- All male progeny is sold at age 24 months and the sales is started in year 3
- Total cattle sales within ten years will be 55 head (fifty-five) of female progeny and 211 (two hundred eleven) of male progeny. The average weight of female and male progeny is 369 kg¹⁰. Besides 152 (one hundred fifty-two) culled cows with average weight of 450 kg and 5 (five) culled bulls of approximately 500 kg live weight will also be sold.
- Closing stock in year 10 will be 219 (two hundred nineteen) head.

¹⁰ Estimated ADG (Average Daily Gain) of cattle after weaning from 4-24 months old is 0.44 kg. The cattle are sold at 24 months old weight 369 kg. See more details in Annex 2.B. Estimated Feed and Weights in each Growth Phase.

7. Cash Flow Projection

	Year 1	Year 2	Year 3	Year 4	Year 5
# Cattle Sales					
Female progeny	0 hd	0 hd	6 hd	7 hd	7 hd
Male progeny	0 hd	0 hd	22 hd	26 hd	26 hd
Cull cows and bulls	0 hd	20 hd	15 hd	15 hd	21 hd
Cash In					
Cattle Sales	IDR -	IDR 352,800,000	IDR 711,271,920	IDR 795,843,480	IDR 921,500,640
Other Revenue	IDR 228,800,250	IDR 209,610,923	IDR 217,008,288	IDR 232,240,338	IDR 245,382,912
Cattle Terminal Value Year 10					
Sub Total Cash In	IDR 228,800,250	IDR 562,410,923	IDR 928,280,208	IDR1,028,083,818	IDR1,166,883,552
<i>deducted by</i>					
CAPITAL EXPENDITURE					
Investment Costs	IDR2,169,500,000	IDR 3,862,500	IDR -	IDR 4,097,726	IDR 127,000,000
Sub Total Capital Expenditure	IDR2,169,500,000	IDR 3,862,500	IDR -	IDR 4,097,726	IDR 127,000,000
Cash Out					
Operational Costs	IDR 553,366,125	IDR 619,670,825	IDR 652,444,860	IDR 674,817,990	IDR 692,606,070
Sub Total Cash Out	IDR 553,366,125	IDR 619,670,825	IDR 652,444,860	IDR 674,817,990	IDR 692,606,070
CASH SURPLUS (DEFICIT)	IDR(2,494,065,875)	IDR (61,122,403)	IDR 275,835,348	IDR 349,168,102	IDR 347,277,482
Cumulative Cash Flow	IDR(2,494,065,875)	IDR(2,555,188,278)	IDR(2,279,352,930)	IDR(1,930,184,828)	IDR(1,582,907,346)

	Year 1	Year 2	Year 3	Year 4	Year 5	Accumulated 10 years
# Cattle Sales						
Female progeny	7 hd	7 hd	7 hd	7 hd	7 hd	55 hd
Male progeny	26 hd	27 hd	28 hd	28 hd	28 hd	211 hd
Cull cows and bulls	16 hd	17 hd	17 hd	18 hd	18 hd	157 hd
Cash In						
Cattle Sales	IDR 823,837,800	IDR 863,519,280	IDR 886,186,800	IDR 910,710,000	IDR 917,008,200	IDR 7,182,678,120
Other Revenue	IDR 257,878,458	IDR 272,373,507	IDR 288,670,595	IDR 304,334,982	IDR 319,271,868	IDR 2,575,572,120
Cattle Terminal Value Year 10					IDR3,304,718,940	IDR 3,304,718,940
Sub Total Cash In	IDR1,081,716,258	IDR1,135,892,787	IDR1,174,857,395	IDR1,215,044,982	IDR4,540,999,008	IDR 13,062,969,180
<i>deducted by</i>						
CAPITAL EXPENDITURE						
Investment Costs	IDR 53,326,607	IDR -	IDR 4,612,027	IDR -	IDR 4,892,899	IDR 2,367,291,760
Sub Total Capital Expenditure	IDR 53,326,607	IDR -	IDR 4,612,027	IDR -	IDR 4,892,899	IDR 2,367,291,760
Cash Out						
Operational Costs	IDR 713,314,525	IDR 736,170,540	IDR 756,526,650	IDR 775,323,600	IDR 802,151,825	IDR 6,976,393,010
Sub Total Cash Out	IDR 713,314,525	IDR 736,170,540	IDR 756,526,650	IDR 775,323,600	IDR 802,151,825	IDR 6,976,393,010
CASH SURPLUS (DEFICIT)	IDR 315,075,126	IDR 399,722,247	IDR 413,718,718	IDR 439,721,382	IDR 3,733,954,284	
Cumulative Cash Flow	IDR(1,267,832,220)	IDR (868,109,973)	IDR (454,391,256)	IDR (14,669,874)	IDR 3,719,284,410	

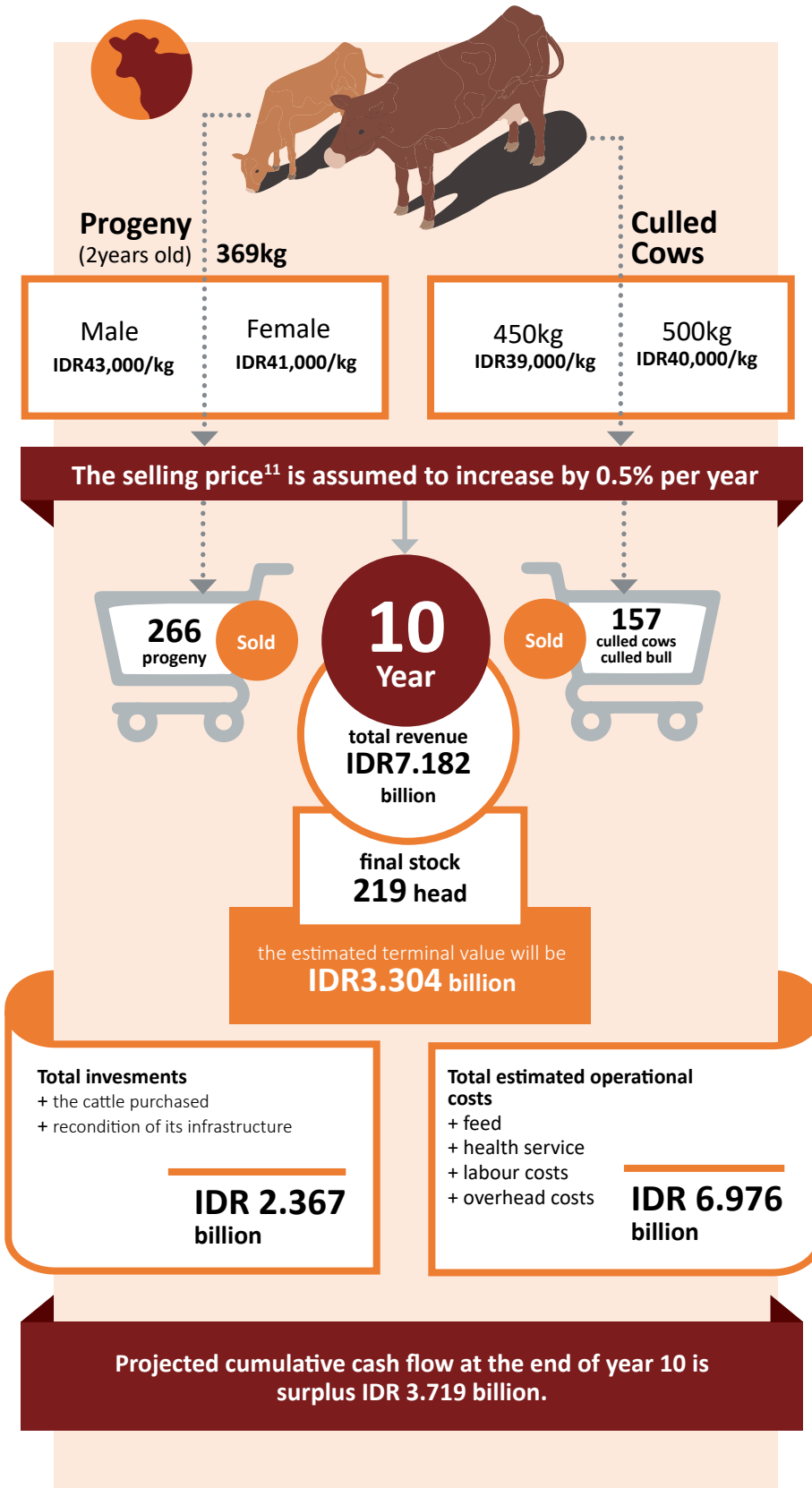
Cash Flow Projection Analysis

ROI (Return on Investment)	149.13%
IRR (Internal Rate of Return)	13.46%
Cumulative Cash Flow	IDR 3,719,284,410
NPV (Net Present Value)	IDR 545,571,742
Net B/C (Net Benefit/Cost)	1.24
Positive Cash Flow	Year 3
PBP (Pay Back Period)	Year 10

8. Cash flow Projection Analysis

Source of revenue:

- (1) All female and male progeny sales at age 24 months old
- (2) Culled cow sales
- (3) Culled bull sales.
- (4) Other revenue, the sales of compost



Beside the cattle sales, the other revenue is coming from the sales of compost. The estimated daily compost's production is 9 kg per head and the net sales price is IDR 700/kg. The compost sales price/kg is assumed 3% increase yearly. In year 10, the total sales of compost reach IDR 2.575 billion.

Based on the analysis, positive cash flow can be achieved in year 3. Payback period will be obtained in year 10.

Taking into account the terminal value of herd closing stock, **IRR (Internal Rate of Return)** in year 10 will reach **13.46%**¹¹ and **ROI (Return on Investment)** **149.13%**.

¹¹ The additional income that the business is able to generate from compost sales results in the IRR of 13.46%. However, the potential loss of revenue from compost sales would leave the financial business performance vulnerable, as 26% of total revenue is generated through compost sales



9. BX Cattle Breeding Business Risks

- In order to run the business as planned, you should always pay attention to and maintain the cattle productivity performance parameters, including:
- Body Condition Score: Always maintain BCS (Body Condition Score) of Cows in ideal condition ≥ 3 . Non-ideal BCS will reduce reproductive ability of the cows.
- Average Daily Gain: Maintain ADG (Average Daily Gain) of weaned calves to meet the targeted weight. Lower ADGs will impact final weight of sales cattle.
- Cattle mortality rate including abortion and still birth. Abortion and still births will affect the number of calves born. Calf death rate will affect the number of growers and finished cattle for sale. Meanwhile, cow and bull deaths will reduce the calving rate and increase the cost of purchasing new cattle for replacement,
- Cull unproductive cows/bulls. All cows that failed to conceive within the targeted period or all unproductive bulls and not immediately culled (sold) can potentially increase feed cost. Delay in culling and replacing unproductive bulls with new productive bulls extend the calving interval and reduce the calving rate.

Annex 1. Feed Composition and Daily Need of Cows

A. Forage and Concentrate Required

Average live weight (Cows)	450 kg
% DM required in feed (of live weight)	2.5%
DM/hd/day required	11.3 kg
Forage	
% forage required	80%
DM required from forage/head/day	9 kg
% DM	22.5%
Forage required /head/day (rounded)	40 kg
Concentrate	
% concentrate required	20%
DM required from concentrate/head/day	2.3 kg
% DM of concentrate	90%
FM concentrate required /head/day (rounded)	2.5 kg

DM=Dry Matter, FM= Fresh Matter

B. Composition of Concentrate for Cows

No	Feed Commodities	Proportion	Price /kg	Ration Cost
1	Dry Onggok	57%	IDR 2,000	IDR 1,140
2	Palm Kernel Cake	37%	IDR 1,800	IDR 666
3	Molasses	4.5%	IDR 1,800	IDR 81
4	Mineral mix	1.5%	IDR 2,500	IDR 38
Total		100%		IDR 1,925
			Rounded	IDR 1,900

Annex 2. Feed Composition and Daily Needs of Calves

A. Concentrate Composition for Calves

No	Feed Commodities	Proportion	Price /kg	Ration Cost
1	Dry Onggok	35%	IDR 2,000	IDR 700
2	Palm Kernel Cake	59%	IDR 1,800	IDR 1,062
3	Molasses	4.5%	IDR 1,800	IDR 81
4	Mineral mix	1.5%	IDR 2,500	IDR 38
Total		100%		IDR 1,881
			Rounded	IDR 1,900

B. Estimation of Calf Weight and Forage and Concentrate Required by Calf in Each Growing Stage

Age	Initial Weight	Estimated ADG	Growing Period	Final Weight
4-6 months	100 kg	0.30 kg	61 days	118 kg
6-9 months	118 kg	0.40 kg	92 days	155 kg
9-12 months	155 kg	0.42 kg	92 days	193 kg
12-15 months	193 kg	0.45 kg	92 days	235 kg
15-18 months	235 kg	0.47 kg	92 days	278 kg
18-24 months	278 kg	0.50 kg	183 days	369 kg
	Average	0.44 kg		

Age	Concentrate Required	Forage Required	DM Required (% of liveweight)	DM Required (kg)	FM Concentrate Required*	FM Forage Required**	Average Feed Cost / Growing Phase
4-6 months	20%	80%	2.5%	3.0 kg	0.7 kg	10.5 kg	IDR 3,300
6-9 months	20%	80%	2.5%	3.9 kg	0.9 kg	12.8 kg	IDR 4,200
9-12 months	20%	80%	2.5%	4.8 kg	1.1 kg	17.2 kg	IDR 5,100
12-15 months	20%	80%	2.5%	5.9 kg	1.3 kg	20.8 kg	IDR 6,100
15-18 months	20%	80%	2.5%	6.9 kg	1.5 kg	24.7 kg	IDR 7,100
18-24 months	20%	80%	2.5%	9.2 kg	2.1 kg	32.8 kg	IDR 9,300
				Average	1.4 kg	22.4 kg	IDR 6,500

Note : DM= Dry Matter : FM = Fresh Matter
 % DM Concentrate : 90%
 % DM Forage : 22.5%

Annex 3. Estimation of Forage Production Cost

PREPARATION COST – ONLY ONCE AT THE BEGINNING	
Costs	
A. Initial Investment Cost	
Land leasing / ha / year	IDR 5,000,000
B. Preparation Package	
1. Land preparation and urea cost	IDR 1,150,000
2. Worker cost for planting	IDR 300,000
3. Forage seeds	IDR 400,000
Sub-total Cost (X)	IDR 6,850,000
ROUTINE ANNUAL COSTS	
Assumed harvest Cycle / year	6 times
Costs	
A. Leasing	
Land leasing (assuming no increase)	IDR 5,000,000
B. Annual Operational Costs	
1. Weed control, manure application and other maintenance, 6 cycles x IDR 300,000	IDR 1,800,000
2. Workers cost for 6 harvest cycles x IDR 300,000	IDR 1,800,000
Sub-total Cost (Y)	IDR 8,600,000
ANNUAL OUTPUT	Fresh weight (kg/ha)
Harvest 1	15,000 kg
Harvest 2	20,000 kg
Harvest 3	20,000 kg
Harvest 4	20,000 kg
Harvest 5	15,000 kg
Harvest 6	10,000 kg
Average of Total Harvest	100,000 kg
	Cost per kg fresh weight
Production Cost in Year 1 (X+Y)/Z	IDR 155
Production Cost year 2 onwards (Y/Z)	IDR 86
Production Costs (Rounded)	IDR 150

Annex 4. Estimated Annual Requirement of Feed and Land

	Year 1	Year 2	Year 3	Year 4	Year 5
Herd Size					
Cows and Bulls	104 hd	83 hd	83 hd	86 hd	88 hd
Calves	44 hd	96 hd	104 hd	104 hd	106 hd
DM Concentrate required for 12 months					
Cows and Bulls	85,410 kg	68,164 kg	68,164 kg	70,628 kg	72,270 kg
Calves	0 kg	20,201 kg	33,542 kg	35,268 kg	35,268 kg
Total	85,410 kg	88,365 kg	101,706 kg	105,896 kg	107,538 kg

DM Forage required for 12 months					
Cows and Bulls	341,640 kg	272,655 kg	272,655 kg	282,510 kg	289,080 kg
Calves	0 kg	80,804 kg	134,167 kg	141,073 kg	141,073 kg
Total	341,640 kg	353,459 kg	406,822 kg	423,583 kg	430,153 kg

Land required	16.1 ha	16.6 ha	19.1 ha	19.9 ha	20.2 ha
Land size (rounded)	17 ha	17 ha	20 ha	20 ha	21 ha

	Year 6	Year 7	Year 8	Year 9	Year 10
Herd Size					
Cows and Bulls	90 hd	92 hd	95 hd	97 hd	99 hd
Calves	110 hd	112 hd	112 hd	116 hd	120 hd
DM Concentrate required for 12 months					
Cows and Bulls	73,913 kg	75,555 kg	78,019 kg	79,661 kg	81,304 kg
Calves	36,186 kg	37,450 kg	37,795 kg	37,795 kg	39,632 kg
Total	110,099 kg	113,005 kg	115,814 kg	117,456 kg	120,935 kg

DM Forage required for 12 months					
Cows and Bulls	295,650 kg	302,220 kg	312,075 kg	318,645 kg	325,215 kg
Calves	144,746 kg	149,800 kg	151,181 kg	151,181 kg	158,527 kg
Total	440,396 kg	452,020 kg	463,256 kg	469,826 kg	483,742 kg

Land required	20.7 ha	21.3 ha	21.8 ha	22.1 ha	22.8 ha
Land size (rounded)	17 ha	17 ha	20 ha	20 ha	21 ha



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