

Final Report

Time in Motion Efficiency and Innovation Seed
Program (Cost of Absenteeism and Breakeven
Understanding)

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1.0 Executive Summary

Red meat processors face many challenges when processing cattle. A representation of these challenges varies from labour, cattle, plant, market condition and locations in a broad sense and vary in degree from one site to the next. The overall effect of these challenges influences the processors bottom line ability to remain profitable therefore, it is essential that all costs and the drivers associated in processing are understood within these organization.

To gain an insight into the challenges, an establishment, a Queensland Processing Plant was assessed with the main objective of investigating the driving factors that affected breakeven and sustainability with a focus on revenue sources and cost from production derived from sales, staff, process, and factory equipment with an underlying aim to benefits the site by creating greater efficiency and understanding of current operations.

To accomplish these objectives the facility was divided into three main processing operations, the Slaughter, Boning and Loadout Operations. For all operations, the following process was followed with specific outcomes to accomplish:

- Establish and documented Overview of Plant Operations, Processes and Plan for Evaluation
- Evaluate in detail all Main Operations to include all sub-areas its staffing, processes, and capabilities, historical & present to include upgrades to facilities.
- Evaluate Organic Transport Operation to include capabilities, historical & present and relationship with the establishment.
- Evaluate staffing with focus on absenteeism and recruitment and its effects on capabilities.
- Evaluate and Analyse Yield of various breeds of cattle on offal, red meat and by-products and investigate for benchmarks for KPI and income projections based on available recovery and capabilities.
- Analyse revenues and costs against production based on operators and establishment production based on cattle type and specified contract terms to project income and costs of production.
- Aid in the establishment of daily reporting for Boning, Kill Floor and Loadout Operations
- Provide improvement opportunities from findings.

Once complete the information can be used to create a framework of tools to enable management to assess breakeven requirements in addition to providing the ability to track performance and create a KPI program based on benchmarks and meaningful performance indicators derived from the overall evaluations of the main operations and all the sub processing areas involved.

The establishment process product for export and domestic markets currently for more than 10 different contract operators composed of numerous brands derived from various Bos Taurus, Bos Indicus and their cross bred cattle

sourced from properties from across Australia. The main products produced are red meat and offal products, with secondary products of body fat and other various by-products.

This diversity of factor is where the challenge arises from, because all these factors tied together affect speed of processing, yields of product, staff requirements and equipment use which leads to the necessity to have the ability set up production conditions to meet or exceed break-even operations...

In this report most of the factors are generalised to referring to process flow and thru put in terms of operators, head of cattle, bodies / sides per hours, kilograms processed, cut per head, bags per carton, pieces per bags and cartons per minute/ per head ... which only covers measured unit in the processing through only some of the processing area.

In short, this report will discuss the operations and processing in an abattoir and the factors that need to be addressed that affects costs of processing and revenues generated that will provide these benefits to the industry:

- details on different work area and process factors processors should consider through normal operations and when implementing change that effect overall outcomes and capacities.
- bases for processors to identify methods for analysing current processes as well as based data for comparison for production outputs.
- Information of the factors that influence processing areas and operations when processing a variety of product for different operators.
- Information of the contributing factors that drive and impact costs and revenues when processing for multiple contract operators and how they affect breakeven.
- bases for the methodology for addressing variability, limitations and constrains along different process areas when dealing with extremely variable product.
- information for the elements to consider when assessing or implementing KPI programs.

There are short comings in the ability of this report to truly assess breakeven calculation for industry operators. This report covers processing at the abattoir which is only one of the factors that ties into the cost for operators and does make reference to other outside factors when relevant and information was present.

To truly get a real idea of what the industry needs, several different research studies would be required to assess the effects of the numerous other factors that add cost to operations.

In broad terms research into these areas should be undertaken to tie all the pieces together:

- Breeds and Yields
- Markets, accessibility, and price trends
- Transport and Export
- Finance and true cost of investment.
- Feed lotting

Information and a greater understanding of these exterior factor would enhance operators' ability to compete in an incredibly challenging markets and aid them in industry sustainability.

2.0 Introduction

The establishment processes high quality beef for export and domestic market. The facility processes meat for privates' business and other contract operators.

The purpose of this report is to conduct an evaluation of the plant operations and sources of revenue and costs associated in production, for determining breakeven and recognizing contributing factors that affect this aim.

To determine costs and revenue observations and analysis of individual work areas and terms for operators of contract processing were assessed to determine revenues received for the work and the factors affecting costs, were conducted to assess individual area costs and revenue recoveries.

Revenues are generated for processing primarily red meat primal, trims, offal products and secondary products like body fat, bones and various by products to include tallow, meat meal, blood meal and hides.

To achieve this the plant runs a five-day operation. The operations are broken up into three main processing operations with complimentary process areas that work together over a 24-hour period to ensure products is ready for follow-on process. The operations are the Slaughter, Boning and Loadout which represent a 3–4-day process. (Refer Chart 1 Plant Process Flow)

Day 1 process begins at the Slaughter Operation with lairage when cattle are delivered, followed by the Kill floor, the main area in the operation. They start operations at 6 am Monday-Friday and runs in conjunction with Offal Room and Carcass Chiller operations. The Kill Floor Runs one shift a day and can process up to 570 head per day which are chilled for up to 72 hours prior to boning. Body sizes range from 300 Kgs to 500 Kgs.

In conjunction with Kill Floor, the Offal Room runs and can produce and package upwards of 12000 Kgs of product processing approximately 1200 Cartons of products per day. (Refer Chart 2 Kill Floor and Offal Process Flow)

Once processed through Kill floor carcasses are loaded in batch run order into chillers to undergo a 24-hour chilling process and grading in preparation for boning. This represents the end of Day 1 processing.

The Chillers operate 2 shifts daily, a day shift which inducts carcasses in from kill floor on Day 1 and out for boning room on Day 2 as part of the boning process. Currently the plant has 7 carcass chillers with the capacity to store 800 carcasses.

The Boning Room Operations starts operations at 5 am Monday-Friday and is Day 2 Processing. The Boning room runs 2 shifts a day and night, each staffing a main Boning area, a Process line, a Central Pack Area, and Lidding Area.

The Boning Room can process up to 220,000 Cold Kgs per day (Composed of up to 570 head processed per day with weights ranging from 280 to 460 kgs per carcass (Avg 400kgs CCW). This results in a capacity to produce up to 9000 cartons of product per-day.

Product is then transferred from Boning Room to Central Pack where all saleable items are vacuum sealed, with all cartons of fat and trim product being lidded. All product is inducted into inventory system, then conveyed to Lidding Area for appropriate blast chilling or freezing. Central pack runs 2 shifts with the capability to process up to 11500 cartons a day.

Once stock arrive in lidding area stock is automatically sorted to appropriate chilling or freezing blast for time required based on customer instructions. Stock requiring only chilling will be chilled for 24 hours then exited out of blast refrigeration and lidded then conveyed straight to Load Out for storage. Stock requiring Freezing is lidded if required then held for 48 hours total in area, then conveyed out of area to cold store for storage. The area has a total capacity to chill 6075 cartons per day, with a capacity to freeze 5258 cartons. Additional Freezing capacity is available in manual blast at load out Freezer Store of 1386 cartons, but this is used for offal cartons. (Refer Chart 3 Boning Operations Process Flow)

Loadout Operations is Day 3 for Chilled & Day 4 processing for Frozen product. The Loadout Runs 3 shift (24-hour operation), a Day shift, Night Shift, and a Graveyard Shift. Day and Night Shift are responsible for despatching and placing stock into storage. Graveyard Shift is the first shift of the day and is responsible for consolidation of stock for loading and setup storage areas to ensure space is available for storing frozen stock for following days' work and organising work priorities for the rest of the day.

Loadouts primary functions are to store and dispatch stock. Cartons are received at loadout via two different methods. All offal is trucked in racks from offal freezers then separated into stock requiring chilled or freezer storage. Offal stock requiring chilling is stored in the ASRS (Automated Sorting and Retrieval System) and offal requiring freezing is stored in Manual Blast Freezer until required for orders or pushed out by next day's production into normal freezer storage area.

Cartons from Lidding Area are conveyed to the ASRS where they are stored until required for orders. When retrieved for orders cartons are either be palletised for despatch or loaded directly into export container dependant on customers' requirements.

The load out has a working storage capacity of up to 60000 cartons in the freezer and a working storage capacity of up to 40000 cartons in the chillers.

Stock is dispatched from the factory via two methods pallets or container across the Day and Night shifts. Load Out has the despatch capability to process up to 14000 cartons a day with an average Turnover Time of stock of 8.6 Days from time stock hits storage with frozen stock averaging 10.5 days and Chiller stock averaging 3.3 days. (Refer Chart 4 Loadout Operations Process Flow)

In total any cattle entering the meat works are fully process through and despatch as product on average 5.3 days if chilled or 13.5 day if frozen. (Refer Table 1 Comparative Production)

Table 1 Comparative Production

Area	Year 1	Rate (Daily)	Year 2	Rate (Daily)	Range/ Capacity
Kill Floor					
Head	116198	478	121362	491	460 - 570
Hot Weight	-----	-----	-----	208000	232000 Max
Cold Weight	47198724	191088	48606376	196787	180000-220000
Chiller Operations					
Head Processed	116198	478	121362	491	400-600
Offal Room					
KGs Processed	2929490	8859	3101676	12557	7500-13500
Cartons	-----	-----	271467	1103	700-1300
Boning Room					
Cold KGs Processed	47198724	191088	48606376	196787	180000-220000
Head	116198	478	121362	491	460 - 580
Cartons Produced	-----	-----	2047655	8300	7500 - 9000
Central Pack					
Cartons Processed	-----	-----	2047655	8300	7500-11000
Lidding Area					
Cartons Processed	-----	-----	2047655	8300	7500-8500 current
Frozen	-----	-----	942000	3824	3600 Max
Chilled	-----	-----	1105665	4476	6100 Max
Load Out					
Cartons Stored	-----	-----	2319122	9389	12000 Max
Despatched	-----	-----	2332319	9442	14000 Max
Total Turn Over	-----	-----	8.6 Days	61500	Base 9400 ctns production daily
Freezer Turn Over	-----	-----	10.5 Days	16500	Base 4325 ctns production daily
Chiller Turn Over	-----	-----	3.2 Days	45000	Base 5075 ctns production daily

**Illustrative example of two production years.*

The plant operation is representative of the main cost the establishment has when processing operator cattle and additionally the costs of cattle, freight, and cost of sale when processing establishment cattle.

There are two sources of revenue, service charges, and recoveries. The service charge revenue is any revenue generated by charges incurred by operators when their cattle are processed. Recovery revenue is based on value from products the factory collects as fall items for itself in relation to agreements with operators for processing cattle. This includes various offal, bones, fat, and by-products (tallow, meat meal, blood meal).

Chart 1 (Production Process Flow)

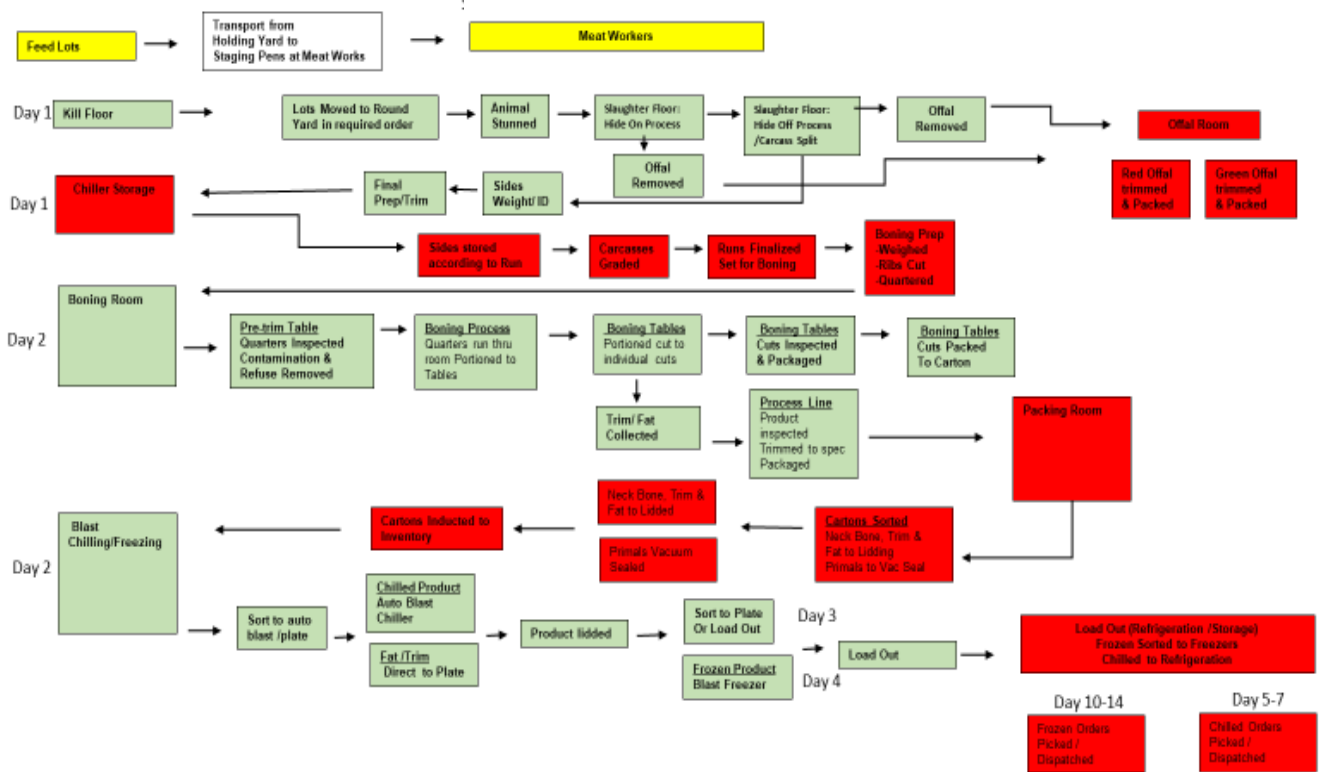


Chart 2 (Kill Floor and Offal Process Flow)



Chart 3 (Boning Operations Process Flow)

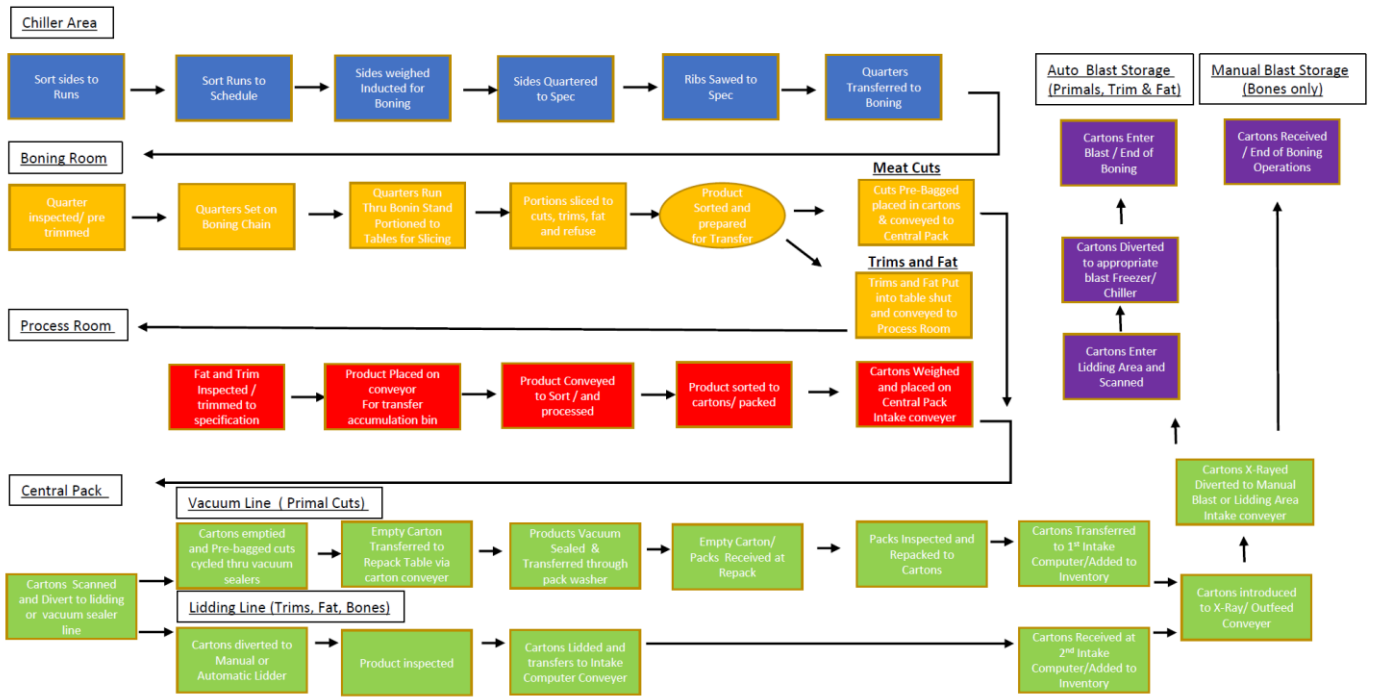
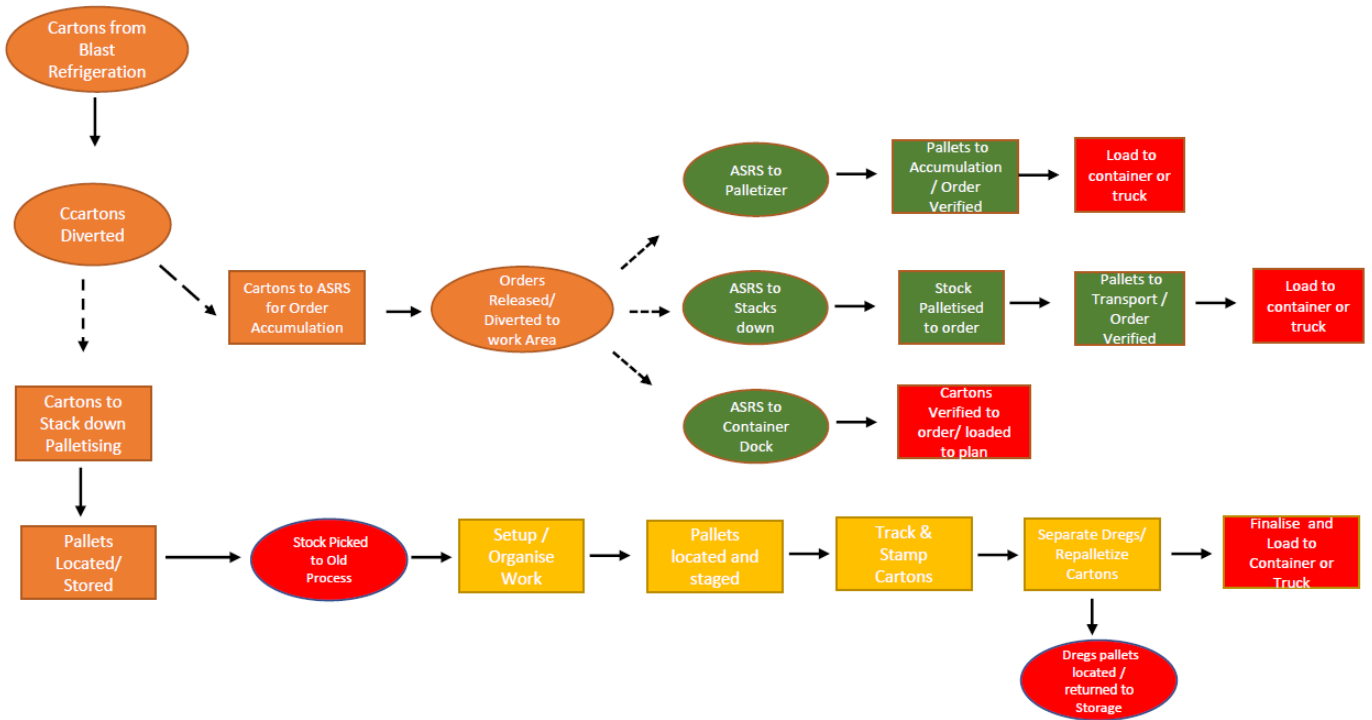


Chart 4 (Loadout Operations Process Flow)



3.0 Project Objectives

To Conduct an evaluation of the full operations through analysing work areas and its inputs to identify cost drivers and generated revenues for determining breakeven and to identify contributing factors that affect this aim, by

- Documenting overview of plant, processes, and plan for evaluation through quarterly reporting.
- Evaluate operation to include all sub-areas its staffing, processes, and capabilities, historical & present to include upgrades to facilities.
- Provide recommendations for improvement.

4.0 Methodology

To evaluate the operations, it was necessary to conduct an overall review of all relevant process area and, document the process involved. From the initial review the plan was established to analyse the operation base on function to assess staffing, processes, equipment, and support functions required to determine capabilities.

The operation for evaluative purposes was divided into the three main operation of Slaughter, Boning and Loadout. Each main area was further separated into all sub-area required to work in conjunction to accomplish its production goals.

Main Operations Goals

Slaughter Operations – To slaughter cattle, QA, collect offal, prepare body for grading and boning and induct as sides into inventory.

Boning Operations – To breakdown sides to product, package, and process into inventory as cartons of product and moved into blast refrigeration.

Load Out Operations - To receive stock from blast refrigeration and induct into stores and dispatch stock.

Once capabilities were assessed, the main aim was then to identify the Costs and Revenues directly attributed to each operation and to identify the factors that influence them.

Costs were identified and defined as:

Labour(L)- Staff required to process and Support process.

Overheads(O)- Plant, Equipment, Utilities, Maintenance, Support Staff.

Materials(M)- Packaging, Cattle Costs

Revenues were identified and defined as:

Operator Service Charges(C) – revenue generated by charges incurred by operators based on agreements with operator when processing cattle.

Recoveries (R)- revenue is based on value from products the factory collects for itself in relation to agreements with operators for processing cattle. This includes various offal, bones, fat, and by-products (tallow, meat meal, blood meal) from operators and all collections from establishment. (Refer Chart 5 Lot Yield Report)

Chart 5 (Lot Yield Report)

Finance Week		21		Slaughter Date		Saturday, 20 May 2023	
Operator	Group	Head	CCW	HCV	Shrink		
		60	21693.4	22437	3.31%		
Lot	BN897	AVG	362	374		Per Kg	
HGP	Y	Days On Feed	100+	Lot/ Run Cost	\$ 154,079.48	\$	6.87
Male	60	Female	0	Packaging	\$ 4,039.17	\$	0.24
VENDOR(s)	0			Labor Estimate	\$ 18,138.85	\$	1.10
	0			Service Fee	\$ 6,600.00	\$	110.00

Running Avg		Yield Bench Mark	
Head Processed	16948		
Avg Shrink	2.54%		
% @ HCW	% of STD Recovery	Projected KGs	
5.42%	7.34%		1216
5.67%	7.67%		1271
3.50%	4.74%		785
3.54%	4.80%		795
2.98%	4.04%		670
1.43%	1.94%		321
1.99%	2.70%		447
3.41%	4.62%		766
2.78%	3.77%		624
3.36%	4.56%		755
8.50%	11.52%		1908
5.27%	7.14%		1182
0.75%	1.02%		169
4.50%	6.09%		1009
0.00%	0.00%		0
53.11%	71.95%		11917

GROUP	KGS	% @HCW	% of STD Recovery	Total \$	Sell Per KG \$	Factor vs 50CL
Item1	1273	5.68%	7.72%	\$ 11,721.22	\$ 9.21	2.4
Item2	1316	5.86%	7.98%	\$ 11,775.72	\$ 8.95	2.4
Item3	809	3.60%	4.90%	\$ 7,242.84	\$ 8.96	2.4
Item4	716	3.19%	4.34%	\$ 9,527.29	\$ 13.31	3.5
Item5	648	2.89%	3.93%	\$ 10,401.00	\$ 16.06	4.2
Item6	335	1.49%	2.03%	\$ 12,155.15	\$ 36.28	9.5
Item7	461	2.05%	2.79%	\$ 6,407.81	\$ 13.91	3.7
Item8	760	3.39%	4.61%	\$ 7,001.68	\$ 9.21	2.4
Item9	734	3.27%	4.45%	\$ 4,796.72	\$ 6.54	1.7
Item10	710	3.17%	4.31%	\$ 16,044.89	\$ 22.58	5.9
Item11	1952	8.70%	11.84%	\$ 19,396.86	\$ 9.94	2.6
Item12	1044	4.65%	6.33%	\$ 11,533.76	\$ 11.04	2.9
Item13	152	0.68%	0.92%	\$ 1,444.26	\$ 9.53	2.5
Item14	1077	4.80%	6.53%	\$ 10,174.96	\$ 9.45	2.5
Item15	0	0.00%	0.00%	\$ -	\$ -	-
Primal Total	11986	53.42%	72.69%	\$ 139,624.16	\$ 11.65	3.1

TRIM GROUP	KGS	% @ HCW	% of STD Recovery	Total \$	Sell Per KG \$
TRIM A	0	0.00%	0.00%	\$ -	\$ -
TRIM B	1600	7.13%	9.70%	\$ 6,080.00	\$ 3.80
TRIM C	2067	9.21%	12.54%	\$ 10,356.67	\$ 5.01
TRIM D	517	2.30%	3.13%	\$ 3,126.64	\$ 6.05
TRIM E	0	0.00%	0.00%	\$ -	\$ -
TRIM F	0	0.00%	0.00%	\$ -	\$ -
TRIM G	0	0.00%	0.00%	\$ -	\$ -
Trim Total	4184	18.65%	25.37%	\$ 19,563.31	\$ 4.68

% @ HCW	%	Projected KGs
0.00%	0.00%	0
4.99%	6.75%	1119
9.66%	13.09%	2168
3.30%	4.48%	741
1.00%	1.35%	224
0.20%	0.27%	44
0.00%	0.00%	0
19.15%	25.94%	4296
72.26%	97.89%	16213

Red Meat Total	16170	72.07%		\$ 159,187.47	\$ 9.84
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OFFAL GROUP	KGS	% @HCW	% of STD Recovery	Total \$	Sell Per KG \$
Item 1	73	0.33%	0.45%	\$ 1,033.42	\$ 14.07
Item 2	55	0.24%	0.33%	\$ 912.61	\$ 16.69
Item 3	95	0.42%	0.58%	\$ 1,782.70	\$ 18.72
Item 4	52	0.23%	0.32%	\$ 1,472.04	\$ 28.21
Item 5	44	0.20%	0.27%	\$ 619.92	\$ 14.00
Red Offal Total	320	1.47%	1.94%	\$ 5,820.70	\$ 18.20

% @HCW	%	Projected KGs
0.38%	0.52%	86
0.26%	0.35%	58
0.42%	0.58%	95
0.28%	0.38%	63
0.21%	0.29%	48
1.56%	2.11%	349

Standard Recovery	16490
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Projected Recovery	16563
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(In this case the recovered product was 16490 was achieve @ a 72.07% red meat yield & 1.47% for offal)

Once revenues and costs are defined, breakeven requirement can be calculated. E.G.

Costs (L+O+M) = Break-even point

And Break Result can be calculated by finding comparing the difference E.G

Revenue(C+R) -Cost(L+O+M) = Break-Even Results

For each operating area factors that affect cost when processing was analysed for production for different operators and how their specific requirements affect them. The drivers, like operator product specification, size, and breed of cattle influence cost value because they impact processing speed, utilities and materials used.

For Example:

In Kill Floor Operations breed of cattle, not size and weight is a determining factor for speed of processing and labour applied.

In Boning cost determining factors are product specification, size, and yield because they affect speed, time, materials, and labour used.

In Loadout none of the above affect cost, the driving factors are cartons produced, their refrigeration type, time on hand, size of orders and dispatch destination.

Therefore, cost will be evaluated using relevant cost drivers. (Refer Chart 6 Observation Summary Boning Operations)

Chart 6 Observation Summary Boning Operations

Chillers	Planned	Recommended KPI	Verified Rate
Sides Quartered	524	524	524 @ 436 minute
Rate Per Hour	72	72	72
Comment:	<i>Planned Rates Vary based on workload as capacity is measure at 120 sides per hour further observations would be required to establish a proposed staffing structure based on varying rates to ensure staff are not under or over utilised since weight or size is not a factor. Due to set up and current IT system limitations this measure should be a group KPI to include team leaders*</i>		
Boning Stand			
KGs Process Per Hour	13760@ 436 Minutes	14000-14500	14421@418 Minutes
Yield Total Recovery	85%	85% (84224 KG)	85.33% (84659 Kgs)
Comment	<i>* 18 minutes none process time for changeovers</i>		
Slicers			
KGs Process Per Hour	13760@ 436 Minutes	14200-14500	14421@418 Minutes
Red Meat Yield	71-72%	70400-71400	71.42 (70856.20)
Cut (pieces) per hour	15,681.00 @ 2158 per hour	2000-2300	2257@ 418 Minutes
Comment	<i>Proposed rates were based on 3 different runs and anticipated outcome based on historical data. Due to current system limitations currently, this measure should be a group KPI, until individual tables can be assessed. *</i>		
Packers			
Cuts (Pieces)Packed	15,681.00 @ 2158 per hour	2000-2300 Pcs	2257@ 418 Minutes
Tubs packed (KGs)	22343Kgs @3075 per hour	3000-3200Kgs	22284@3198 per hour

Packs Rejects %	Should be set as % of packs anything less deducted from 100% rate		
Comment	<i>Proposed rates were based on 3 different runs and anticipated outcome based on historical data. Due to current IT system limitations currently, this measure should be a group KPI, until individual tables can be assessed. *</i>		
Boning Room Leads	& Support		
KGs processed	99212	98000-101000	99212@14421
Yields- Boning Room	85%	85% (84224 KG)	85.33% (84659 Kgs)
KG Rate per Hour	13760@436	14200-14500	14421@418 Minutes
Red Meat	71-72%	70400-71400	71.42 % (70856.20)
Fat	4.3%	4250	3.1% @ 3077.14
Bones	10.5%	10400	10.8% @10726
Lost Time	0	0	0
Process Room			
Packers/ Trimmers			
KGs process %	22.5%	22320 Kgs	22.46@22285
Per Hour		3000-3100	3066
Yield Trims	18.24%	18100	19.36 % @19205
Yield Fat	4.28%	4250	3.1% @3080
CL Rate	65CL, 75CL,	+/- 5%	62CL, 72.5CL
Leads & Support	All above Plus lost time due to process halts (none on date)		
Central Pack	Planned	Recommended KPI	Verified Rate
Repack			
Packs per hour	12974@1785 per hour (436 Min)	1920	1862 Per Hour
Error Rate	0%	0%	10%
8600 Vac			

Packs per hour&	1728	1630-1730	1600 per hour
-% Utilisation	85%	85%-90%	83%
Multivac			
Packs per hour	250	215-225	261***
-% Utilisation	15%	10-15%	17%
Strapper/Lidding			
Cartons per Hour	1496@206 per hr	220- 240 Per hour	215 Per Hour
Intake Computer	4470 cartons @ 10.25 per minute	7 per min Computer 1 4 per min Computer 2	10.69 Cartons per min CP1 (7.11) CP2 (3.56)
Leads & Support	All above Plus Lost Time due to process halts		
Comment	Multivac & 8600 utilizations based on anticipated product requiring it (Bone -in, high volume Cartons)		
<p>*Recommended Rates calculate only on actual run time and assigned staff as staff should not be penalized if not responsible for process halt in this case only none process time were change overs</p> <p>*Rates should be adjusted based on staff present at job</p>			

Revenue for the plant comes from two sources, service charges, and recovery.

The service charge revenue is any revenue generated by charges incurred by operators. Dependant on operator, charges tend to vary, some are charged by kilograms processed and others per head.

Recovery revenue is based on value from products the factory collects as fall in relation to agreements with operators for processing cattle. This includes various offal, bones, fat, and by-products (tallow, meat meal, blood meal) from operators and all collections from establishment cattle.

For establishment cattle all products recovered, and their sale value is considered revenue. (*e.g., red meat, bones, offal, and by-product*)

Based on known yields for recovered products (i.e., red meat, offal's, bones, and body fat) it is possible to project total revenue and evaluate best value for certain items if collected or processed as by products based on sell value as each, to maximise revenues. (*Refer Chart 5 Lot Yield Report*)

For evaluative purposes to assess process areas, the various revenue scenarios will be used to illustrate different outcomes that can happen based on contract terms, which influence revenue generations due amount fall products kept and ability to process operators' cattle numbers.

Three scenarios are:

Operator Charges Based Per Head:

(Service Charges Per Head X head to process) + (Fall Recoveries per head X Value) = Revenue

This charging model assumes that one large services charge per head will cover all production costs and fall recoveries of bones, fat, offal and by products will provide enough extra revenue to cover overheads and any variations that may occur... *(Refer Table 2 Operator Income Estimate Per Head)*

Refer Table 2 Operator Income Estimate Per Head

Operator Service and Available Recovery Income (Kill Floor, Boning and Offal Room)						
Price as Of: 10/07/2023						Total Head
Offal Recovery Targets						1
	Code	Per Head %	X	AVG Kgs Best	Per HD	Pack QTY
				Sell		
TRIPE ROOM						
ITEM 1	102824	0.11%	1	0.45	\$ 9.58	\$ 4.32 KGS
ITEM 2	102820	0.15%	1	0.62	\$ 9.37	\$ 3.76 KGS
ITEM 3	102779	0.80%	1	3.28	\$ 2.45	\$ 8.04 KGS
ITEM 4	102844	0.09%	1	0.37	\$ 10.83	\$ 4.00 KGS
INTESTINE ROOM						
ITEM 1	102780	0.23%	1	0.94	\$ 8.88	\$ 8.37 KGS
ITEM 2	102772	0.97%	1	3.98	\$ 8.77	\$ 34.88 KGS
RED ROOM (Operator must collect)						
ITEM 1		0.00%	1	0.00	-	2.00
ITEM 2		0.00%	1	0.00	-	2.00
ITEM 3	106000	0.32%	1	1.31	\$ 7.50	\$ 9.84 1.00
ITEM 4		0.00%	1	0.00	-	1.00
ITEM 5		0.00%	1	0.00	-	2.00
ITEM 6		0.00%	1	0.00	-	1.00
ITEM 7		0.00%	1	0.00	-	1.00
ITEM 8		0.00%	1	0.00	-	1.00
ITEM 9		0.00%	0	0.00	-	3.00
RED ROOM (available Fall for collection)						
ITEM 1	102811	0.02%	1	0.08	\$ 6.12	\$ 0.50 KGS
ITEM 2	102745	0.38%	1	1.56	\$ 3.22	\$ 3.02 KGS
ITEM 3	102768	0.32%	1	1.31	\$ 1.20	\$ 1.57 KGS
ITEM 4	102144	0.10%	1	0.43	\$ 2.52	\$ 1.07 KGS
ITEM 5	102763	1.58%	1	6.48	\$ 2.23	\$ 14.43 1.00
ITEM 6	102740	0.07%	1	0.29	\$ 4.12	\$ 1.18 KGS
ITEM 7	102725	0.08%	1	0.33	\$ 6.00	\$ 1.97 1.00
ITEM 8	102807	0.02%	1	0.08	\$ 6.77	\$ 0.56 KGS
ITEM 9	102810	0.02%	1	0.06	\$ 6.45	\$ 0.40 KGS
ITEM 10	102729	0.78%	1	3.20	\$ 2.84	\$ 9.08 KGS
ITEM 11	102808	0.03%	1	0.14	\$ 6.12	\$ 0.82 KGS
ITEM 12	102288	0.04%	1	0.16	\$ 9.08	\$ 1.49 KGS
ITEM 13	102758	0.07%	1	0.29	\$ 10.74	\$ 3.08 KGS
ITEM 14	102762	0.07%	1	0.29	\$ 10.74	\$ 3.08 KGS
Grand Total		6.25%	0	25.64		\$ 119.51
Fall Product Always Available		5.93%		24.33		\$ 109.67
Operator Collected		0.32%		1.31		\$ 9.84
Total Per Best		6.25%		25.64		\$ 119.51
Offal Room Available Recovery Value						
Boning Room Target Recovery						
	Code	Per Head %	X	AVG Kgs Best	Per HD	Pack QTY
				Sell		
396						
ITEM 1	267001	1.78%	1	7.05	\$ 3.82	\$ 26.95 KGS
ITEM 2	100188	1.47%	1	5.83	\$ 1.22	\$ 7.14 KGS
ITEM 3	100182	3.29%	1	13.04	\$ 1.22	\$ 15.91 KGS
ITEM 4	100185	5.50%	1	21.80	\$ 1.12	\$ 24.41 1.00
ITEM 5	102203	5.28%	1	20.93	\$ 2.86	\$ 59.83 KGS
ITEM 6	100186	0.09%	1	0.36	\$ 2.17	\$ 0.77 1.00
ITEM 7	100187	0.12%	1	0.48	\$ 1.42	\$ 0.68 KGS
ITEM 8	100189	0.15%	1	0.59	\$ 2.62	\$ 1.56 KGS
LEG BONES (To Order)						
ITEM 1A	100199	5.50%		0.00	\$ -	\$ - KGS
ITEM 1B	109546	0.00%		0.00	\$ -	\$ - KGS
ITEM 1C	101897	0.00%		0.00	\$ -	\$ - KGS
Grand Total		17.68%		70.07		\$ 137.24
Boning Room Available Recovery Value						
Total Available Recovery Value						
Service Charge					\$	396.79
PACKED KGS Rate	\$ -					Packed Service Value
RED MEAT KGS PACKED	0.00	\$				-
OFFAL KGS PACKED	5.45	\$				-
Total Operator Service Value						
Total Value Per Head from Slaughter to Boning						
By Products	Per Head	KGS	Sell	Per Head	Sell QTY	
ITEM 1	27.80%	1	113.88	\$ 1.70	\$ 193.42	KGS
ITEM 2	8.08%	1	33.13	\$ 0.80	\$ 26.50	KGS
ITEM 3	0.80%	1	3.28	\$ 1.35	\$ 4.43	KGS
INDISSIBLE FAT & BONE REBATE		0		\$	\$ 30.00	Per Head
Knock Bone Rebate Per KG	1.78%		7.05	\$ 1.30	\$ 9.17	
Total By Products Value less Rebates						
Total Value of Recovery Per Head from Slaughter, Boning and By Product						

Operator Charges Based on Kilos Packed:

(Service Charges Per Head X head to process) + (KGs packed X per KGs packed charge) (Fall Recoveries per head X sale value) = Revenue

This charging models assumes that a moderate service charge per head plus volume of KGs packed will cover all direct production costs and fall recoveries of bones, fat, offal and by products will provide margin and cover overheads and any variations... (Refer Table 3 Operator Income Estimate Per Kilo Packed)

Table 3 Operator Income Estimate Per Kilo Packed

Operator Service and Available Recovery Income (Kiln Floor, Boning and Offal Room)						
Price as Of: 10/07/2023						
						Total Head 1
Offal Recovery Targets						
			Per Head	%	AVG Kg± Beest	345
	Code	%	KG	KG	Sell	Per HD
						Pack QTY
TRIPE ROOM						
ITEM 1	100216	0.11%	1	0.38	\$ 8.72	\$ 3.31 KGs
ITEM 2	100223	0.18%	1	0.63	\$ 8.88	\$ 5.64 KGs
ITEM 3	100779	0.90%	1	3.11	\$ 2.45	\$ 7.61 KGs
ITEM 4	100244	0.10%	1	0.35	\$ 10.83	\$ 3.74 KGs
INTESTINE ROOM						
ITEM 1	100767	0.23%	1	0.79	\$ 7.10	\$ 5.63 KGs
ITEM 2	100781	0.97%	1	3.35	\$ 6.55	\$ 21.92 KGs
RED ROOM (Operator must collect)						
ITEM 1		0.00%	1	0.00	-	2.00
ITEM 2		0.23%	1	0.79	-	2.00
ITEM 3		0.43%	1	1.48	-	1.00
ITEM 4		0.27%	1	0.93	-	1.00
ITEM 5		0.35%	1	1.21	-	2.00
ITEM 6		0.33%	1	1.14	-	1.00
ITEM 7		0.00%	1	0.00	-	1.00
ITEM 8		0.00%	1	0.00	-	1.00
ITEM 9		0.00%	1	0.00	-	1.00
ITEM 10		0.00%	1	0.00	-	3.00
RED ROOM (available Fall for collection)						
ITEM 1	100211	0.03%	1	0.10	\$ 6.12	\$ 0.63 KGs
ITEM 2	100745	0.42%	1	1.45	\$ 3.22	\$ 4.67 KGs
ITEM 3	100766	0.32%	1	1.10	\$ 1.20	\$ 1.32 KGs
ITEM 4	100144	0.10%	1	0.36	\$ 2.52	\$ 0.90 KGs
ITEM 5	100763	1.95%	1	6.73	\$ 2.23	\$ 15.00 1.00
ITEM 6	100740	0.10%	1	0.35	\$ 4.12	\$ 1.42 KGs
ITEM 7	100725	0.08%	1	0.28	\$ 6.00	\$ 1.66 1.00
ITEM 8	100807	0.02%	1	0.07	\$ 6.77	\$ 0.47 KGs
ITEM 9	100210	0.02%	1	0.07	\$ 6.45	\$ 0.45 KGs
ITEM 10	100729	0.78%	1	2.69	\$ 2.84	\$ 7.64 KGs
ITEM 11	100260	0.03%	1	0.12	\$ 6.12	\$ 0.72 KGs
ITEM 12	100268	0.04%	1	0.14	\$ 9.08	\$ 1.25 KGs
ITEM 13	100758	0.07%	1	0.24	\$ 10.74	\$ 2.59 KGs
ITEM 14	100762	0.07%	1	0.24	\$ 10.74	\$ 2.59 KGs
Grand Total		8.14%	0	28.09		\$ 89.16
Fall Product Always Available		6.53%		22.54		\$ 89.16
Operator Collected		1.61%		5.55		\$ -
Total Per beast		8.14%		28.09		\$ 89.16
Offal Room Available Recovery Value						
Boning Room Target Recovery						
			Per Head	%	AVG Kg± Beest	340
	Code	%	KG	KG	Sell	Per HD
						Pack QTY
ITEM 1	300265	1.99%	1	6.76	\$ 2.40	\$ 16.22 KGs
ITEM 2	100168	1.56%	1	5.30	\$ 1.22	\$ 6.46 KGs
ITEM 3	100182	0.00%	1	0.00	\$ 1.22	\$ - KGs
ITEM 4	100185	6.00%	1	20.38	\$ 1.12	\$ 22.83 1.00
ITEM 5	100199	0.41%	1	1.39	\$ 2.12	\$ 2.95 KGs
ITEM 6	100186	0.11%	1	0.37	\$ 2.17	\$ 0.81 1.00
ITEM 7	100187	0.13%	1	0.44	\$ 1.42	\$ 0.63 KGs
ITEM 8	100189	0.16%	1	0.54	\$ 2.62	\$ 1.42 KGs
LEG BONES (To Order)						
ITEM 1A	100199	6.00%	1	0.00	\$ -	\$ - KGs
ITEM 1B	100546	0.00%	1	0.00	\$ -	\$ - KGs
ITEM 1C	100197	0.00%	1	0.00	\$ -	\$ - KGs
Grand Total		10.36%		35.19		\$ 51.33
Boning Room Available Recovery Value						
Total Available Recovery Value						
Service Charge						
				\$		90.00
PACKED KGS RATE		\$ 0.90				Packed Service Value
RED MEAT KGS PACKED		267.71	\$			240.94
OFFAL KGS PACKED		5.55	\$			5.00
Total Operator Service Value						
Total Value Per Head from Slaughter to Boning						
By Products						
		Per Head	KGs	Sell	Per Head	Sell QTY
ITEM 1		26.27%	1	90.63	\$ 1.70	\$ 153.80 KGs
ITEM 2		7.93%	1	27.36	\$ 0.80	\$ 21.89 KGs
ITEM 3		0.80%	1	2.76	\$ 1.35	\$ 3.73 KGs
INEDIBLE FAT & BONE REBATE		0			\$ -	Per Head
Knock Bone Rebate Per KG		1.99%		6.76	\$ 2.00	\$ 13.52
Total By Products Value less Rebates						
Total Value of Recovery Per Head from Slaughter, Boning and By Product						

Establishment Owned processed Cattle.

Recovered (Red Meat X Sales Value) + (Bones, Fat X Sales Value) + (Offal X Sales Value) + (By Products X Sales Vale) = Total Revenue

This model assumes that all products collected will attain the best possible monetary value when sold and revenues will cover production, cattle, and related costs. Refer Table 4 Lot By-Products and Income Estimate & Table 5 Offal & Boning Room Income Recovery Summary

Table 4 Lot By-Products and Income Estimate

Finance Week		21		Slaughter Date		Saturday, 20 May 2023	
Operator	Group	Head	CCW	HCW	Shrink		
		60	21693.4	22437	3.31%		
Lot	BN897	AVG	362	374			Per Kg
HGP	Y	Days On Feed	100+	Lot/ Run Cost	\$ 154,079.48	\$	6.87
Male	60	Female	0	Packaging	\$ 4,039.17	\$	0.24
VENDOR(s)	0			Labor Estimate	\$ 18,138.85	\$	1.10
				Service Fee	\$ 6,600.00	\$	110.00

Running Avg
Yield Bench Mark
Head Processed 16948
Avg Shrink 2.54%

GROUP	KGS	% @HCW	% of STD Recovery	Total \$	Sell Per KG \$	Factor vs 50CL
Item1	1273	5.68%	7.72%	\$ 11,721.22	\$ 9.21	2.4
Item2	1316	5.86%	7.98%	\$ 11,775.72	\$ 8.95	2.4
Item3	809	3.60%	4.90%	\$ 7,242.84	\$ 8.96	2.4
Item4	716	3.19%	4.34%	\$ 9,527.29	\$ 13.31	3.5
Item5	648	2.89%	3.93%	\$ 10,401.00	\$ 16.06	4.2
Item6	335	1.49%	2.03%	\$ 12,155.15	\$ 36.28	9.5
Item7	461	2.05%	2.79%	\$ 6,407.81	\$ 13.91	3.7
Item8	760	3.39%	4.61%	\$ 7,001.68	\$ 9.21	2.4
Item9	734	3.27%	4.45%	\$ 4,796.72	\$ 6.54	1.7
Item10	710	3.17%	4.31%	\$ 16,044.89	\$ 22.58	5.9
Item11	1952	8.70%	11.84%	\$ 19,396.86	\$ 9.94	2.6
Item12	1044	4.65%	6.33%	\$ 11,533.76	\$ 11.04	2.9
Item13	152	0.68%	0.92%	\$ 1,444.26	\$ 9.53	2.5
Item14	1077	4.80%	6.53%	\$ 10,174.96	\$ 9.45	2.5
Item15	0	0.00%	0.00%	\$ -	\$ -	-
Primal Total	11986	53.42%	72.69%	\$ 139,624.16	\$ 11.65	3.1

% @ HCW	% of STD Recovery	Projected KGS
5.42%	7.34%	1216
5.67%	7.67%	1271
3.50%	4.74%	785
3.54%	4.80%	795
2.98%	4.04%	670
1.43%	1.94%	321
1.99%	2.70%	447
3.41%	4.62%	766
2.78%	3.77%	624
3.36%	4.56%	755
8.50%	11.52%	1908
5.27%	7.14%	1182
0.75%	1.02%	169
4.50%	6.09%	1009
0.00%	0.00%	0
53.11%	71.95%	11917

TRIM GROUP	KGS	% @ HCW	% of STD Recovery	Total \$	Sell Per KG \$
TRIM A	0	0.00%	0.00%	\$ -	\$ -
TRIM B	1600	7.13%	9.70%	\$ 6,080.00	\$ 3.80
TRIM C	2067	9.21%	12.54%	\$ 10,356.67	\$ 5.01
TRIM D	517	2.30%	3.13%	\$ 3,126.64	\$ 6.05
TRIM E	0	0.00%	0.00%	\$ -	\$ -
TRIM F	0	0.00%	0.00%	\$ -	\$ -
TRIM G	0	0.00%	0.00%	\$ -	\$ -
Trim Total	4184	18.65%	25.37%	\$ 19,563.31	\$ 4.68

% @ HCW	%	Projected KGS
0.00%	0.00%	0
4.99%	6.75%	1119
9.66%	13.09%	2168
3.30%	4.48%	741
1.00%	1.35%	224
0.20%	0.27%	44
0.00%	0.00%	0
19.15%	25.94%	4296

Red Meat Total	16170	72.07%		\$ 159,187.47	\$ 9.84
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72.26%	97.89%	16213
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OFFAL GROUP	KGS	% @HCW	% of STD Recovery	Total \$	Sell Per KG \$
Item 1	73	0.33%	0.45%	\$ 1,033.42	\$ 14.07
Item 2	55	0.24%	0.33%	\$ 912.61	\$ 16.69
Item 3	95	0.42%	0.58%	\$ 1,782.70	\$ 18.72
Item 4	52	0.23%	0.32%	\$ 1,472.04	\$ 28.21
Item 5	44	0.20%	0.27%	\$ 619.92	\$ 14.00
Red Offal Total	320	1.47%	1.94%	\$ 5,820.70	\$ 18.20

% @HCW	%	Projected KGS
0.38%	0.52%	86
0.26%	0.35%	58
0.42%	0.58%	95
0.28%	0.38%	63
0.21%	0.29%	48
1.56%	2.11%	349

Table 5 Offal & Boning Room Income Recovery Summary

Lot BO069,084 Head 123 Slaughter Date
 HCW 47,777.50 CCW 46617.00 XXXX
 AVG Pr HD 388.43 379.00

OFFAL RECOVERY			
Group ID	Income	Avg Sell Per KG	Nominal KGs
ITEM 1	\$ -	0	0.00
ITEM 2	\$ 91.80	\$ 6.12	15.00
ITEM 3	\$ -	0	0.00
ITEM 4	\$ 1,807.29	\$ 15.81	114.32
ITEM 5	\$ 569.30	\$ 3.22	176.80
ITEM 6	\$ -	0	0.00
ITEM 7	\$ -	0	0.00
ITEM 8	\$ -	0	0.00
ITEM 9	\$ -	0	0.00
ITEM 10	\$ 1,175.20	\$ 1.82	646.74
ITEM 11	\$ -	0	0.00
ITEM 12	\$ 562.50	\$ 7.50	75.00
ITEM 13	\$ 197.76	\$ 4.12	48.00
ITEM 14	\$ 2,153.84	\$ 12.60	170.94
ITEM 15	\$ -	0	0.00
ITEM 16	\$ 2,090.88	\$ 16.94	123.40
ITEM 17	\$ 3,423.29	\$ 17.97	190.46
ITEM 18	\$ -	0	0.00
ITEM 19	\$ 3,821.21	\$ 31.21	122.42
ITEM 20	\$ 85.68	\$ 6.12	14.00
ITEM 21	\$ 94.78	\$ 6.77	14.00
ITEM 22	\$ 646.80	\$ 2.45	264.00
ITEM 23	\$ 541.50	\$ 10.83	50.00
ITEM 24	\$ -	0	0.00
	\$ 17,261.83	\$ 8.52	2,025.08

	Target	Collected	Variance
ITEM 3-4	292	256	-36
ITEM 10	146	100	-46
ITEM 14	146	123	-23
ITEM 16	292	304	12
ITEM 17	146	140	-6
ITEM 19	146	144	-2

BONING RECOVERY			
Group ID	Income	Avg Sell Per KG	Nominal KGs
ITEM 1	\$ 4,199.79	\$ 10.50	400.0
ITEM 2	\$ -	0	0.0
ITEM 3	\$ 11,958.95	\$ 8.97	1,333.1
ITEM 4	\$ 10,610.90	\$ 11.22	945.9
ITEM 5	\$ 2,820.79	\$ 7.42	380.2
ITEM 6	\$ 12,557.38	\$ 8.80	1,426.5
ITEM 7	\$ 6,066.65	\$ 8.02	756.5
ITEM 8	\$ 3,465.72	\$ 11.44	302.9
ITEM 9	\$ 5,810.81	\$ 10.43	557.2
ITEM 10	\$ 7,269.27	\$ 9.71	748.4
ITEM 11	\$ 9,807.44	\$ 10.27	954.9
ITEM 12	\$ 4,859.59	\$ 11.91	408.1
ITEM 13	\$ 3,511.61	\$ 14.50	242.2
ITEM 14	\$ 10,712.70	\$ 14.72	727.9
ITEM 15	\$ 1,986.52	\$ 16.59	119.8
ITEM 16	\$ 2,072.49	\$ 10.50	197.4
ITEM 17	\$ -	0	0.0
ITEM 18	\$ 22,936.23	\$ 16.47	1,392.4
ITEM 19	\$ -	0	0.0
ITEM 20	\$ -	0	0.0
ITEM 21	\$ 468.95	\$ 38.44	12.2
ITEM 22	\$ -	0	0.0
ITEM 23	\$ 873.22	\$ 9.60	91.0
ITEM 24	\$ 23,495.96	\$ 38.89	604.2
ITEM 25	\$ 5,982.32	\$ 14.82	403.6
ITEM 26	\$ 3,265.42	\$ 15.04	217.1
ITEM 27	\$ 4,278.80	\$ 11.97	357.5
ITEM 28	\$ 1,684.89	\$ 12.46	135.2
ITEM 29	\$ -	0	0.0
ITEM 30	\$ -	0	0.0
ITEM 31	\$ 13,846.14	\$ 8.68	1,594.3
ITEM 32	\$ -	0	0.0
ITEM 33	\$ -	0	0.0
ITEM 34	\$ 3,622.20	\$ 5.62	644.5
ITEM 35	\$ 4,768.01	\$ 6.18	772.0
ITEM 36	\$ -	0	0.0
ITEM 37	\$ -	0	0.0
ITEM 38	\$ 30,581.91	\$ 27.73	1,102.8
ITEM 39	\$ -	0	0.0
ITEM 40	\$ -	0	0.0
ITEM 41	\$ 5,457.98	\$ 14.56	374.8
ITEM 42	\$ 1,727.38	\$ 28.09	61.5
ITEM 43	\$ -	0	0.0
ITEM 44	\$ 3,232.87	\$ 8.53	379.0
ITEM 45	\$ 8,748.30	\$ 10.26	852.6
ITEM 46	\$ 2,518.84	\$ 9.67	260.5
ITEM 47	\$ -	0	0.0
ITEM 48	\$ 14,589.80	\$ 9.81	1,486.7
ITEM 49	\$ 810.73	\$ 12.55	64.6
ITEM 50	\$ 803.08	\$ 8.50	94.5
ITEM 51	\$ 7,346.35	\$ 7.56	971.7
ITEM 52	\$ 4,406.13	\$ 18.10	243.4
ITEM 53	\$ 1,336.23	\$ 19.04	70.2
ITEM 54	\$ 6,028.00	\$ 8.00	753.5
ITEM 55	\$ -	0	0.0
ITEM 56	\$ 12,056.09	\$ 8.62	1,397.9
ITEM 57	\$ 4,786.45	\$ 17.21	278.1
ITEM 58	\$ -	0	0.0
ITEM 59	\$ 3,341.81	\$ 9.11	367.0
ITEM 60	\$ 10,998.06	\$ 8.81	1,248.5
ITEM 61	\$ -	0	0.0
ITEM 62	\$ -	0	0.0
ITEM 63	\$ -	0	0.0
ITEM 64	\$ -	0	0.0
ITEM 65	\$ -	0	0.0
ITEM 66	\$ -	0	0.0
ITEM 67	\$ -	0	0.0
ITEM 68	\$ -	0	0.0
ITEM 69	\$ 9,726.56	\$ 1.55	6,294.7
ITEM 70	\$ -	0	0.0
ITEM 71	\$ -	0	0.0
ITEM 72	\$ 993.13	\$ 2.36	420.3
ITEM 73	\$ 302.40	\$ 2.52	120.0
ITEM 74	\$ 408.60	\$ 9.08	45.0
ITEM 75	\$ -	0	0.0
ITEM 76	\$ 4,902.52	\$ 4.28	1,144.6
ITEM 77	\$ 27,990.32	\$ 4.02	6,960.9
ITEM 78	\$ 2,488.80	\$ 6.10	408.0
ITEM 79	\$ 3,258.93	\$ 7.05	462.3
ITEM 80	\$ -	0	0.0
ITEM 81	\$ -	0	0.0
Total	\$ 351,774.03	\$ 8.46	41,587.82

5.0 Project Outcomes

The project achieved multiple outcomes which aided in understanding of current operations and how to achieve break even by:

- Producing base document to identify plant areas, capacity, layout, process flows and staffing to include staffing job description and aided in the development of process management tools to forecast production outcomes and aid with planning.
- Produce area-based documents to identifying specific area, layout, process flows, staffing requirements and job description to include measure of historical and current performance.
- Identified relevant drivers of costs and sources of income to provided base data for break-even analyst for the plant to include the development of reporting for outcomes and projecting income.
- Identified opportunities for efficiency and process improvement in addition to aiding in the establishment of Continuous Improvement Program
- identify and document-based data key performance data on different areas for the implementation of a KPI program.
- Developed Tools for planning operations that can be used to cost jobs and predict income and aid in maximising income generation.

6.0 Discussion

6.1 Slaughter Operations Evaluation

To understand how the Slaughter Operations influences break-even revenue and cost in for this area need to be assessed. When considering revenue and cost in this area the major influence on both is the speed of production. Revenues are generated from the fall recoveries from offal & by products and service charges for products packed.

So ideally the more head processed, product packed and by products produced the more revenue generated. Intuition would suggest the great the number of head processed and the heavier the better the revenue.

There are three limitations that impede the ability to maximize revenue:

First is that breed of animal and not size can affect the speed of the process. Second is, Boning Operations is not capable of processing the amount of cattle weight in a day that the slaughter operation can process, and priority of work when short staffed.

For Example:

Certain smaller and lighter breeds require slower rates to process, due to attributes of body.

Max rate has been timed at 65 head per hour. This means that at max rate less revenue would be generated in comparison to a larger and heavier animal. For Example

Smaller Animal (Weight Range 300-380Kgs)

(Process Rate 65 Head Per hour X Average Weight 340) X Work Hours 7.6= 494 Head @ 167960 Kgs Processed)

Offal Yield Recovery is 6.2% of Weight or

$167960 \times 6.2\% = 10414 \text{ Kgs Offal Recovered @ } 3.23 \text{ Per KG} = \underline{\$33637}$

By-Products Recovery is 36% of Weight or

$167960 \times 36\% = 60465 \text{ Kgs By-Products Recovered @ } \$1.98 \text{ Per KG} = \underline{\$120042}$

$\$33637 + \$120042 = \$153679$ total Revenue /494 head= \$311 Revenue per Head

Estimate is based on Ideal conditions without change overs or process halts and full product recovery realized.

Larger and heavier animals can be run at faster rates.

Max rate has been timed at 75 head per hour. This means that at even at a rate of 65 which is the smaller animal rate gives extra weight for recovery and greater revenue. For Example:

Larger Animal (Weight Range 380-460 Kgs)

(Process Rate 65 Head Per hour X Average Weight 420) X Work Hours 7.6= 494 Head @ 207480 Kgs Processed)

Offal Yield Recovery is 5.9% of Weight or

$207480 \times 5.9\% = 12241 \text{ Kgs Offal Recovered @ } 3.23 \text{ Per KG} = \underline{\$39539}$

By-Products Recovery is 33.5% of Weight or

$207480 \times 33.5\% = 69506 \text{ Kgs By-Products Recovered @ } \$1.98 \text{ Per KG} = \underline{\$137622}$

$\$39539 + \$137622 = \$177161$ total Revenue /494 head= \$359 Revenue per Head

Estimate is based on Ideal conditions without change overs or process halts and full product recovery realized.

The second limiting factor, the boning operations capacity, affects revenue also because it restricts the ability to create more revenues to offset certain cost by scheduling to capacity every day.

Third limiting factor that affects revenue is available labour. To run kill process requires a set number of staff regardless of cattle numbers scheduled to process, when staff are not available staff from offal room are taken therefore recovery of offal is reduced resulting in less revenue.

The cost of production in slaughter operations is separated into variable cost which is packaging of product, utilities and fixed which is labour and other overheads.

Utilities, and overhead and how they are accounted for will vary based on usages or how long process is run.

(e.g., on a short production day less, water used therefore less cost, but for overheads this means less revenue to offset this cost is available therefore for its cost against a measurable work unit would be higher)

Under the ideal conditions with no absentees, no lost time occurs, and overtime is not required, labour is fixed due to several factors:

Under contractual agreements, employees are paid for a full day regardless of amount of work scheduled or unless they are advised a couple of days prior to workday.

Also, the number of staff used to process due to automation is the same regardless of number of head schedules essentially fixing the daily cost.

therefore, the greatest benefit is always realized in terms of labour when a full day of production is done. But when ideal conditions are not present or lost time in production occurs, labour becomes a variable because overtime must be paid, and certain utility cost do go up because their use goes up.

When considering total income or break even from this operation. (Revenue-Cost=Income), several things are evident

- Avoid scheduling only one type of head for a day. A mix of smaller to larger beast scheduled to process the weight in kilograms the boning operation can process to improve labour utilisation in both operations and allows for better income generation with large beast recovery and gain in speed offsetting inefficiencies in processing smaller cattle.
- Over or under scheduling reduces income because regardless of contract terms and expected yields for product, revenue amount does not change but the time used to process was not considered when terms were set. A short day has the effect of not maximising revenue to offset costs and underutilising staff. A long day has the effect of adding cost that reduces income.
- Operator offal collected product specifics and requirements are not accounted for some operators other than generic charge that does not consider extra labour and packaging requirements, causing variation in required labour, packaging, and some overheads.

6.2 Boning Operations Evaluation

When considering revenue and cost in this area the biggest factor that affects both is the speed of production, not of individual head but of KGs processed. Revenues are generated from recoveries of bones, body fat and results of by-products and service charges from operators.

So ideally the more KGs processed results in more head, establishment products packed, and by-products produced resulting in more revenue generated, because all these products are a direct result of the weight processed.

For Example:

A larger animal of 420 Kgs is broken up in more cuts requiring a slower speed of processing, while a smaller animal of 350 Kgs is broken up into less cuts meaning it can be run at a faster rate:

Large Animal processing speed = 34 head @ 420kgs per hour = 14280 KGs per hour

Or

Smaller Animal processing speed= 40 head@350KGs head per hour = 14000 KGs per Hour

There are two factors that can affect the ability to maximize revenue due to rate of production being regulated by KGs Processed:

First factor is the variable contract terms for cattle processed for operators.

For Example:

Smaller Animal (Weight Range 300-380Kgs) AVG 340

Cattle processed based on Per Head Service Charge

(Process Rate 40 Head Per hour X Work Hours 14.6= 584 Head @ 198563 Kgs Processed)

If paid on head processed @ \$180 service fee = **\$116800 Revenue**

Total Service Revenue= 105120+ By-Product/ Other Recovery \$46166 = Total Revenue \$151286

VS

Processed on KGs Pack, then income changes.

198563kgs X 69% Average Yield =137008 KGs Packed X \$0.45 per KG =\$61654 Plus

Service Charge of \$45 per head X 584 head = \$26280

Total Service Revenue= \$87934 + By-Product/ Other Recovery \$46166 = Total Revenue \$134100

By-Products and other recoveries for establishment of Bones and Fat KG recoveries remain the same regardless of contract terms @ 31% Yield X198563=61554 KGs X \$.65 AVG sell = **\$46166 Revenue**

Revenue variance is about \$17,000 per day based on two different models for same work.

Estimate is based on Ideal conditions without change overs or process halts and full product recovery realized.

Larger Animal (Weight Range 380-450Kgs) AVG 420

Cattle processed based on Per Head Service Charge

(Process Rate 34 Head Per hour X Work Hours 14.6= 496 Head @ 208488 Kgs Processed)

If paid on head processed @ \$ 200 service fee = **\$99200 Revenue**

Boning Revenue 99200 + By Products 47431 = Total Revenue \$146631

VS

If paid on KGs Pack, then income changes.

208488kgs X 65% Average Yield =135517 KGs Packed X \$0.45 per KG =\$60983 Plus

Service Charge of \$45 per head X 496 head = \$22320

Revenue from Boning = \$83303

*By-Products and other recoveries for establishment of Bones and Fat KG recoveries remain the same regardless of contract terms @ 35% Yield X208488=72971 KGs X \$.65 AVG sell = **\$47431 Revenue***

Boning Revenue \$83303 + By Products 47431 = Total Revenue \$130,734

Total Revenue variance is about \$16,000 per day based on two different models for same work.

Estimate is based on Ideal conditions without change overs or process halts, and full product recovery realized.

As illustrated by different scenarios the different revenue results are due to the contract not the available work or activities which is driven by the KGs which in-turn regulates time to process. Weight in the job does not change, Only the value of the job based on terms. So to get even revenue results any production runs with Pay per KG packed terms would require a faster processing speed which is not possible. Due to Existing limitations in boning room.

Another limiting factor is variation of specification for product packed from one operator to the next, there is no standard product specification to set cost basis for. These variations add cost due to changing labour requirements, added packaging costs and slower process rates resulting in reduced revenues consequently diminishing the offset to costs which often results in required overtime which incurs added costs without receiving any increase in revenues because they are set in contract terms and don't take time, materials and added labour to process into account.

For example:

Operator A separates Shins and individually bags and packs as different products. Requires 2 extra staff to pack, slow processing thru Central pack, requires extra packaging.

Operator B chops them up adds to trimmings. Reduces Need for packing, meat goes straight to processing line, increase rate of processing thru central pack.

Operator C separates shins and packs into separate items and bag as hind and forequarter chins mixed.

This is most common specification doesn't require additional staff or slows process.

These examples only highlight one instance of many different variations to specification of products that are run through the boning process.

Regardless of specification, due to the contract terms, revenue remains the same, only the costs vary because they are not based on actual activities and materials used.

Third limiting factor that affects revenue is available labour. To run boning process requires a set number of staff regardless of cattle numbers scheduled to process, when staff aren't available two steps are taken, first process is slowed to enable available staff to work multiple stations and second, the collection of establishment collected secondary products (bones, body fat) are eliminated, resulting in less KGS of product and revenue generated.

The cost of production is separated into variable cost which is packaging of product, utilities and fixed which is labour and other overheads.

Packaging charges are based on contract terms regardless of type of agreement, operators pay for their branded packaging, but generic packaging is charged based on a fixed charge instead of usage. What this means that any

increase in packaging costs do not get passed on but are absorbed by the establishment as well as any usage due to different specification.

Utilities, and overhead and how they are accounted for will vary based on usages or how lengthy process is run.

(e.g., on a short production day less, water used therefore less cost, but for overheads this means less revenue to offset overhead cost is available therefore for its cost against a measurable work unit would be higher)

Under normal operations without lost time and no overtime not required, labour is fixed due to several factors:

Under contractual agreements, employees are paid for a full day regardless of amount of work scheduled or unless they are advised a couple of days prior to workday.

Also, the number of staff used to process due to the static set up in most of the areas is set. E.G Boning Room Requires 16 Boners to run at full rate, if not available, process must be slowed to allow available staff to do multiple jobs, this often results in support staff being underutilised as the position are required to be staffed therefore cost per KGS processed is up and revenues are down.

therefore, the greatest revenue benefit is always realized when a full day of production is done. But when ideal conditions are not present or lost time in production occurs, all costs become variable because overtime must be paid, and utility cost do go up.

When considering total income from this operation. (Revenue-Cost=Income), Several things are evident

- When Scheduling, product specification needs to be accounted for. Operator collected product specifics and requirement are not accounted for other than generic charge that does not consider extra labour and packaging requirements, causing variation in required labour, packaging, and some overheads.
- Over or under scheduling reduces income because regardless of contract terms and expected yields for product, revenue amount does not change but the time used to process was not considered when terms where set. A short day has the effect of not maximising revenue to offset costs and underutilising staff. A long day has the effect of adding cost that reduces income.

6.3 Load Out Operations Evaluation

When evaluating revenue and cost in this area, revenue generation is based as inclusive as part of service charges that is set in contract terms with the assumption that any cost related to loadout are covered. This model presents several limitations for costs because there is no provision for dealing with storage of stock and picking of order to any standard.

Once cartons are received into loadout, there is currently no standard for how long it can remain. The establishment from the point of production absorbs all cost activity relate to storage of that carton, from overheads, administration, and handling until it is dispatched to a customer. For example:

A carton can sit in storage for unlimited time, stay refrigerated, move numerous times, and dispatched without any extra cost passed on to operator.

Dependant on destination and transport method, cost to process can vary greatly.

A 40 Foot Container of frozen trimming with 1 order gets loaded in pallet quantities, requires 2 staff, and takes 2 hours to load. (1200 Cartons) a total of 4 labour

A 40 Foot Container of chilled primal with 1 order gets loaded by carton, requires 4 staff, and takes 4 hours to load. (1200 Cartons) a total of 16 labour hours

A truck load of palletised stock requires 5 staff 4 hours (900 Cartons) a total of 20 labour hours.

These situations are the simplest example of the variation of activity for dispatching orders which costs to process are dramatically different.

The challenge for revenues and cost based on this model is further complicated based daily available work and no accountability to which operators stock is worked.

E.g., Some days can have 8 containers to load with only 10 pallets of road freight to process that can take all day to despatch, the next could have 4 containers and 10 pallets of road freight.

In both situations all staff are present, and overhead will be the same, and again revenue recovered will be dramatically different due to the charge models and the fact that multiple operator's stock from various production days is despatched and none of the activity is attributed directly to any specific measurable work unit or specific cattle lot. Refer Table 6 Road Freight Workload 2 Day Comparison Summary

Table 6 Road Freight Workload 2 Day Summary

Deliveries to Process 23/5/23

STATUS	BSM	DEST	PALLETS	CUST	ORDER NO.	CTNS
HAL	56269	CAROLE PARK	3	Operator1	CEM0523124-1	86
HAL	56270	CAROLE PARK	9	Operator1	CEM0523123-1	294
DOM	56276	BRISBANE	4	Operator 10	CDM0523187-1	145
DOM	56288	ORMEAU	2	Operator 2	CDM0523188-1	48
DOM	56301	MURRARRIE	1	JD	DMT0523058-1	42
HAL	56307	PIKENBA	3	Operator1	CEM0523133-1	97
HAL	56309	FISHERMANS ISLAND	2	Operator 4	CEM0523134-1	73
DOM	56320	PIKENBA	2	Operator 5	CDM0523191-1	75
HAL	56323	PIKENBA	2	Operator 5	CEM0523136-1	62
DOM	56326	MANSFIELD	1	Operator 5	CDM0523194-1	48
HAL	56327	EAGLE FARM	8	Operator 4	CEM0523137-1	301
DOM	56340	MANSFIELD	4	Operator 5	CDM0523200-1	167
DOM	56341	GOLD COAST	1	Operator 5	CDM0523202-1	10
HAL	56342	PIKENBA	3	Operator1	CEM0523138-1	85
DOM	56343	PIKENBA	1	Operator 5	CDM0523203-1	16
HAL	56344	PIKENBA	2	Operator 6	CEM0523139-1	76
MTC	56164	HEMMANT	16	Operator 7	CEM0523110-1	520
			64			2145

Deliveries to Process For 22/5/23

STATUS	BSM	DEST	PALLETS	CUST	ORDER NO.	CTNS
HAL	55599	PIKENBA	2	Establishment	EMT0523022-1	75
MTC	56169	PIKENBA	4	Operator 3	CEM0523112-1	134
HAL	56172	FISHERMANS ISLAND	2	Operator 4	CEM0523113-1	62
HAL	56216	PIKENBA	2	Operator 2	CEM0523118-1	66
HAL	56220	PIKENBA	2	Operator 2	CEM0523119-1	91
DOM	56228	BRISBANE AIRPORT	1	Operator1	CDM0523174-1	54
HAL	56230	PIKENBA	1	Operator1	CEM0523120-1	41
DOM	56231	BRISBANE AIRPORT	1	Operator1	CDM0523175-1	54
DOM	56235	BRISBANE AIRPORT	1	Operator1	CDM0523176-1	54
HAL	56238	PIKENBA	2	Operator1	CEM0523121-1	104
MTC	56164	HEMMANT	16	Operator 7	CEM0523110-1	520
			34			1255

To ensure costs are covered and to mitigate inefficiency a different service model should be considered that accounts for different activities that are undertaken to include:

- Implementing proper stock control principles that addressed applying limits to days on hand. This will ensure those associated costs are reduced and do not affect productivity. This would aid with planning operations reduce variation in the most efficient way possible thus reducing costs.

- For despatching orders, a more focused charge model based on actual activity needs to be considers ensuring all cost for processing are covered.

6.4 Overhead and Transport Costs

When evaluating cost previous section have addressed how different areas affect the labour and materials, but overhead due to how they are accounted for and monitored cannot be distinctly attributed to each individual processing area, therefore when they are applied against a measurable work unit it is allocated as part of total production for a period. For Example:

If total overhead cost was \$250,000 in a week and 1000 head @ 400Tons HCW were processed cost are accounted for at:

$$\$250000/1000= \$250 \text{ per HD}$$

And

$$\$250000/400000=\$0.625 \text{ per KG}$$

These costs are categorised as:

Support & Administration Staff- Payroll, Shipping, Maintenance, OH&S, Quality Assurance, Production Support, Sales, and Purchasing Staff.

Plant and Equipment - Area Equipment, Spare Parts, Oils, Insurances, Rates, Licences, Internet Phone Services, Computers, Cleaning, Workshops, Vehicles, By-Products Factory & Equipment.

Utilities- Water, Coal, Electricity.

Due to the way they are identified also means there was never any true measurement of how any of these assorted items are affected by processing and stock despatch requirements even though there are indicator that they can be attributed to activities. For example:

Stock for export requires preparation of documentation, dependant on destination type of paperwork can vary, depending on shipping dates stock will sit in storage, Dependent on destination carton require special security seals & monitoring etc....

Utility prices do increase, and coal prices fluctuate, but usage can be attributed to processing.

Generic Packaging prices increase regularly, but usage can be attributed to operator packaged product.

Transport, storage, and management of operator branded packaging is managed by establishment, all cost can be attribute based on pallets picked-up, stored and by material issued to production.

These examples just highlight, the inaccuracy of attributing these cost against a standard work unit like head or KGs, because each of these examples is affected by a driver that can be attributed in another manner.

Transport of despatched product is managed and organized thru the establishment as they have a transport operation on site that manages the yard, container transport and all state delivery. The actual transport delivery and port fees are charged back to operators.

Other cost like administration, container handling, empty pickup and on yard, movement, storage, and demurrage fees are absorbed by establishment as part of overhead. Again, due to the way they are identified also means there was never any true measurement of how any of these various items are affected by despatch requirements even though there are indicator that they can be attributed to activities. For example:

Loading and unloading of containers from trucks requires 3 staff and can take 30 to 40 minutes to accomplish when staging and when put into storage which requires unloading and reloading, plus power. None of these extra moves and time on site is charge back to operator.

Containers pick-ups are scheduled by the establishment transport. It is common for operators to not lease containers or to mis-schedule to pick-up requirements. This often results in non-pickups and extra work for transport admin to reschedule, resulting in trucks running empty and container deliveries missing boats and having to be stored.

For all these costs other than the transport fees upon despatch of product, there is no attributable portion that is placed against the service charge models.

To ensure costs are covered on the transport and overhead item a different service model should be considered that accounts for different activities that are undertaken to include:

Admin Service fee known activities like processing export documentation, purchase order, booking in cattle for slaughter, booking deliveries...etc.

Terms for applying change of consumable items when prices change for packaging, utilities.

7.0 Conclusions / Recommendations

7.1 Observations and Conclusions

Daily Operations could be described as challenging, due to the varying work areas and diverse staff skills requirements to process for all the different operators and their brands. In general, from one different work area to the next, plant leadership and staff regularly show the ability to adjust and get the job done.

From one area to the next, staff are all very capable and knowledgeable of their own areas. Plant leadership consistently demonstrate their ability to adapt and manage their staff and process area to finish the days' work.

Though the job is getting done, it is still evident that there is a lack of understand of maintaining continual process flow. For staff this can be attributed to limited understand of other areas, how their work affects the process, capacities and no KPI or daily goals communicated by leadership. In general, work from one process flow from one area to the next within the three main operations can be described as inconsistent with a general stop, start flow.

Due to the set-up of many of the work areas that have static positions that must be staffed regardless of rate means that staff activity and utilising can vary greatly. The result in most case means a bottleneck is created in a single area and the rest of the plant thru put slows to accommodate. For Example:

Operator specification requires Boning Room to process Bone-in Short Loins and Bone-in Spencer Rolls. For the Boning Room the process does not change the staff requirement but does add the requirement to pack 2.5 more cartons per head.

But this creates requirement for extra staff and to slow process at the Central Pack to maintain flow.

In most cases this change is not communicates or understood. Processing thru central pack slows or stops. Due to slow down and lost production time results in most case in production being pushed back and underutilisation of non-central pack staff.

For loadout, if too much production is pushed back, means no orders requiring product from production can be processed, resulting in sitting in storage longer, staff underutilisation and change in loadout schedules.

For Kill Floor this situation means chillers filling and schedules slaughter operations need to be reduced and rescheduled.

This example is just one of the many considerations that must be addressed when dealing with extremely variable product from various operators, which only supports the urgency for the need of a KPI program and need training on continuous production and how each area affects each other.

The other shortcoming that is demonstrated from this example is of the miss-utilisation of staff specifically in Boning Operation and Kill Floor Operations. These two processing areas represent over 75% of the staff and in the case of the plant, cost of staff accounts for over 50% of the plant costs. *Table 7 Production Staffing*

Most of the utilisation issue stems from the design of these plant areas, requiring positions to be staffed without the ability to mutually support each other, For example:

In Killfloor if a stop or issue occurs at any floor positions entire Kill Floor, Yards and Offal Room either stop or process is slowed.

In Boning Operations when central pack slows or stops entire process slows with some staff being overworked while others are underutilised, or process stops.

Table 7 Production Staffing

Update15-6-23 Staffing		
Area	Current	Required
Process Total	409	478
Support	35	43
Total	444	521
Direct Support		
Area 1	5	9
Area 2	24	24
Area 3	16	20
Area 4	4	
Area 5	21	28
Area 6	4	5
Total	74	86
Slaughter		
Area 1	62	69
Total	62	69
Boning Day Process		
Area 1	19	22
Area 2	24	32
Area 3	43	47
Area 4	20	22
Area 5	17	19
Area 6	17	17
Area 7	8	10
Total	148	169
Boning Night Process		
Area 1	16	23
Area 2	28	32
Area 3	31	35
Area 4	15	21
Area 5	6	8
Area 6	13	18
Area 7	16	17
Total	125	154
Support		
Area 1	16	16
Area 2	16	23
Area 3	3	4
Total	35	43

In both situations cost of labour and overheads are fully realised and revenues from production are reduced. Plant design and lack of a KPI program only accounts for a couple of factors that influence the understanding and the achievement of breakeven, for plant operations

But above recommendations only address the part of the breakeven formula which involve creating efficiency and reducing cost per measured unit (Per Head or Kilo gram Processed) . The next part is tied to contract terms and yield results that create revenue.

Revenue from production has a relationship to contract terms which makes revenue outcomes predictable from the service charges and yield of fall products kept by the establishment. (By-Products, Offal, Offal and Bones)
Refer Table 2 Operator Income Estimate Per Head, Table 4 Lot By-Products, and Income Estimate & Table 5 Offal & Boning Room Income Recovery Summary

This is because the service charges value will always remain the same based on its charge model Per Hd or Per KG packed. For example: *(Refer Table 2 Operator Income Estimate Per Head*

400 Head Processed X \$520 Per head Service Charge + offal & boning recovery revenue \$245 + By-Products \$145 = \$3640000 for day

From this example for greater revenue logically the more cattle processed the more revenue to pay factory costs.

To optimise this fact is the challenge for the establishment because the goal would be to process to capacity....

The second portion of revenue undoubtedly is the hardest to manage, which is the recovery of fall products. Ideally like the charges, the more recovered the better the revenue result.

The main challenge for these collected products is driven by sales price which is a factor outside the factories control and labour to recover. In these cases, cost to process vs collect value will always need to be assessed, with added complexity of having to analyse to answer the following questions:

Does collection with available labour slow the process?

How much does slowing cost in lost service charge revenue?

Is fall collections and recovery value greater than lost service charges?

These questions should always be answered when scheduling production and managing production.

For example:

Value of Boning Room & Offal collected products value drops from \$245 to \$200.

$\$245 - \$200 = -\$45 \times 400 = \-18000

To offset if products are not collected rate of production could be raised by 2 extra head per hour or 28 per day

$(\$520 \text{ per head} + \$200) \times 28 = \$20160$

Variance = 20160 - 18000 = \$2160

Based on assessment of how revenues are generated, and costs are accounted for, it appears the model for income is based on revenue which can vary based on market conditions to covered costs of production which can vary due to numerous differences in processing for different operator which can be accounted for but aren't charged for based on current terms.

The greatest negative effect on the organisation occurs when revenues are down due to exterior factor.

For example:

cattle prices increase, by-products sell price drop, but your cost remain the same per work unit, which means Income is down. To increase income extra production must increase to boost income.

Problem is extra production requires overtime, pushes maintenance schedules out and results in weekend work scheduled as an example of costs just increasing per measured unit produced.

Also, current model applies production services and loadout as all-encompassing job charge which does not take into account whether a job is efficiency exist in the total processing of a job.

For example:

Larger Cattle creates 21-23 cartons per head vs Smaller which creates 14-17. The difference in cartons and there handling is not accounted for.

7.2 Recommendation

Based on overall analysis of all the different operations areas it is possible to identify the different costs attributed to each area when processing for different operators

Further investigation needs to be done on the relationship between the contract terms and how it effects operational costs, fixed and variable.

Contract terms need to be re-evaluated for the development of costing for variable services and products the operators want, or Activity Based Costing (ABC) that covers all directed costs to production and apply service charge for overhead as a standard, with applied provisions to adjust charges as they change i.e., labour costs, materials etc...

The three work areas need to be further assessed for cost drivers as they are all different and current model applies them all in a combine's approach which doesn't take into account each operations inequality when it comes to covering costs from revenues.

This type of charging does currently exist for other services the plant offers that aren't directly related to manufacturing, but same approach should be used, these are:

Production Levy

Transport Toll Charges

Port Charges

Transport Fuel Surcharges

Ideally each Ares Operations should have its own contract terms and produce a revenue from its activities that can offset its costs.

For example:

Kill Floors.

Service Charge+ Direct Production Charge + Overheads= Revenue

Service Charges= Production Levies, Hide Handling charges, Grading, lots change over, Yard and Unloading, Admin Fees

Direct Production = Labour from Kill Floor, By Products, Offal Room, Packaging, Material, Lot Change Over and Variation Charges

Overheads = Utilities, Direct Support, Maintenance.....should be a set charge that could be added to service charge based on time to process

This approach would aid in management of areas to help drive operations, improve service offering and helps in the management of performance in areas against true profitability.

For establishment production, the same principle needs to be used to assess cost for standard production, for this purpose treating their own production like an operator, then add price of cattle per kg processed. This method means they always have an actual cost of production. Once this is established, management can use the Cost-Plus Approach to price setting for certain lots. This principle ensures all costs are considered before prices for product are set and can be better managed.

7.2.1 Slaughter Operation Recommendations

Kill Floor:

Even though kill floor operation represents overcapacity in the plant, further investigation needs to be done to take advantage of the set-up of the process to further utilize staff.

Since tasks are station specific, very little ability for staff from one position to the next is available to job share or mutually support each other when speed is required or if a worker is struggling to accomplish their job. In these situations the floor either stops until that job is caught up or rate is slowed to accommodate that position work.

E.G. If front hoof clipper process is too slow, the platform only supports one staff member, also if it were possible to add a second staff member only 1 hoof clipper is available.

Or

In addition, hoof clipping only takes 20 seconds. Even at fastest process rate of 75 head per hour this only requires operator to perform clipping once every 48 seconds. This leaves 28 seconds of available time. Or 42% utilisation.

There are several areas where this situation is present.

There is also no redundancy in process for several stations, which if machinery is down process cannot proceed.

E.G. Acid Station, Scales, Knocking Box, Splitting Saw, Viscera Table

These are just examples of processes that require machinery, which would stop the area if they did not work.

Offal Room:

The offal recovery process does not present a bottle neck or limitation to total processing, as all areas involved in the process do not exhibit any limitation and can sustain the kill floor rate or flow. All observations were measured against full collection of available offal against the regulating process, the kill floor.

All collecting and processing process when staffed according to layout present an overcapacity with the ability for staff to perform multiple tasks and aid in multiple positions due to the inline layout creating the ability to maximise staff utilisation with minimal effect to the collection.

The only exception is the small intestine process where positions are static and requires all positions to be filled to process product.

The major issue to recovery more often is the lack of staff to fill positions, which resulted in eliminating collection of certain products, without regard for the value if collected against value as by- products Which does not promote best value for applied labour. For Example

1 kg offal on average nets \$7.5 per kg, the segregation of 1 kg of offal as by- products processing results is:

32% per KG of offal converts to Tallow or 320 Grams of product at 78% recovery after Reduction = 250 Grams Tallow @ \$2.45 sell per KG = 61 cents value

68% per KG of offal converts to Meat Meal or 680 Grams of product at 21% recovery after Reduction= 143 Grams Meat Meal @ .81 cents sell per KG = 11.5 cents

For a total recovery value of 72.5 Cents as by products vs \$7.5 as Offal Products

This represents a \$6.77 reduction in value per Kilogram collect vs By Products.

This example is based on current market, but this type of analysis needs to be conducted regularly to provide a hierarchy of collection when staff are not available to mitigate value loss.

Based on current kill floor being the limiting factor and the observations showing a result of overcapacity in the offal room, further analyse should be conducted to establish a staff requirement per area based on rates to establish a tool for better utilisation of staff.

For intestine room, intestine processing layout needs to be investigated for redesign it to promote inline processing where full process can be run with varying staff based on rate. Traditionally this product is the first to be dropped from collection when staff shortages are present due to number of staff required. Based on volume available to process and sell value, intestine production represents an enormous potential for income and would benefit the company.

Further investigations need to be made into the development of tools and training on process flows and yields as well as RE (Reasonable Expectancy) targets based expected yields and core capacities to help improve process management, utilization of staff, reduce process inefficiencies and process lost time.

Due to the numerous requirements to setting up KPI program, a staged approach need to be taken starting from the top management by

- Map specific business goals to content of KPIs & Metrics for all operations.
- Set up program of implementation to ensure all operations progress without diminishing others performance
- Training leadership to understand their piece of the process and capabilities
- Set leadership KPI's and establish regular production meetings for the purpose of progress review and training
- Analyse IT system for development of actionable timely reporting tools.
- Establish ownership of KPI's as a routine by requiring leadership to report on daily progress
- Create action plan to move towards educating teams and individuals on their individual KPI expectations.
- Attach Incentive to the attainment of KPI's

7.2.2 Boning Operations:

Of the three operations, Kill, Loadout and Boning the slowest process or bottle neck is the boning. Based on historical and measured rates the boning rooms itself has limited output capacity compared to other two operation. Refers_(Table 8 Operational Capacity Comparisons)

Table 8 Operational Capacity Comparisons

Operations	Sub-Areas	Process Capacity Daily in KGS	Area Bottle Neck
Kill	Yards, Kill Floor, Offal Room, Chiller intake	570 Head @450Kgs (Not weight dependant) 256,5000 cold kgs	Kill Floor 570 head per day
Boning	Chillers, Boning Room, Process Line, Central Pack, Lidding/Refrigeration	449 Head @ 450 Kgs 202000 cold Kgs	Boning Room 449 head per day 2 shifts @ 79% Yield
Loadout	Storage, Container Despatch, Road Fright Despatch	90000 Cartons 3500 Head @450 1,575,2000Kgs Storage	Dispatch capacity of 500 Head@450 head of product per Day 10500

*Based on no overtime

Within all the area in the boning operations areas, the boning room is the slowest process, more specifically the work conducted on the tables. There are numerous variables observed that affect process rate:

<u>Product</u>	<u>Staff</u>	<u>Equipment</u>
Yield Requirements	Training levels	No rate control on tables
Number Cuts	Physical ability	Lack of workspace
Types of Cuts	Stature	Table Setup
Number of Packs	Staff over and under utilization	
Cuts per Packs	Staff to supervisor ratio	
Product Specification		
Size & Weight of cut		

All variables combined contribute to process flow, since work on tables is manual, when adding more labour to increase speed is necessary, option is not viable due to limited workspace. Lay out due to separation of table tends to diminish the use of underutilised labour effectiveness due to require travel/ transition time and the multi-tasking involved in working multiple positions. Essentially, this layout has the effect of lock in positions and work, which makes job sharing difficult.

Further investigation needs to be done to investigate room layouts or automation that aids in better utilization of staff.

The other area that can contribute to limiting capacity is the Central Pack due to points of manual processing more specifically the regulation of inward flow of cartons to Vacuum Seal Machine Lines. Due to requirements of certain cartons of product to be processed by certain machine, if done incorrectly, it has a knock on affects to room infeed and outfeed that does impact entire area if not controlled. Flow and machine used to seal product is currently done manually.

Infeed of cartons from boning room needs to be regulated to get correct flow, if outfeed flow which is manually regulated from boning room contains to many cartons of a certain type for a certain lane, flow will stop, so

it is important for boning room and process room staff to inject cartons into intake conveyers regularly so mix of cartons are distributed to correct lanes evenly with no process halts due to limited accumulation room on lanes.

Some observations are people management issues that can be improved but need to be investigated further for automated solutions.

Management for individual areas, in general do have positive control of their processes, but there are no tools or reporting used or available to manage process flows that ties all areas together. There is a lack of awareness of the transitional work units from one area process to next, which leaves a gap in understanding and controlling total workflow which would aid in reducing process halts and utilization issue for staff.

In addition, there is limited knowledge of yields of bodies and how it affects works capacities and required goal setting. This lack of awareness leads to unilateral planning for work areas. This means management will tend to plan for only to their capacities not ultimate end goal, resulting in unbalanced workflow.

E.G. Heaviest cattle at 420 KGs Plus create the same number of primal cartons as Medium 380 KGs Beast but based on yields a heavier beast translate to 21% Trim/ Fat 88Kgs of works for process room at a medium yield it is 19% or 72kgs. A difference of 16 kgs at 36 bodies per hour (50 second chain speed) which results in 576kgs or 20 cartons extra to pack with no extra labour for trim process area.

Further investigations need to be made into the development of tools and training on process flows and yields as well as RE (Reasonable Expectancy) targets based on expected yields and core capacities to help improve process management, utilization of staff, reduce process inefficiencies and process lost time.

Due to the numerous requirements to setting up KPI program, a staged approach need to be taken starting from the top management by

- Map specific business goals to content of KPIs & Metrics for all operations not just Boning Operation
- Set up program of implementation to ensure all operations progress without diminishing others performance
- Training leadership to understand their piece of the process and capabilities
- Set leadership KPI's and establish regular production meetings for the purpose of progress review and training
- Analyse IT system for development of actionable timely reporting tools.
- Establish ownership of KPI's as a routine by requiring leadership to report on daily progress
- Create action plan to move towards educating teams and individuals on their individual KPI expectations.
- Attach Incentive to the attainment of KPI's

7.2.3 Loadout Operation Recommendations:

Given the number of innovations presented to the loadout, the operation has greatly improved its loadout operational capacity. But several areas still require further improvement and investigation

Establishment of Rotational Staff Roster to Cross train at Loadout

To deal with absentees and staff shortages. A rotational roster for current staff should be set up due to large variations in workload. Current practice to replace staff shortages is virtually non-existent as staff from other areas

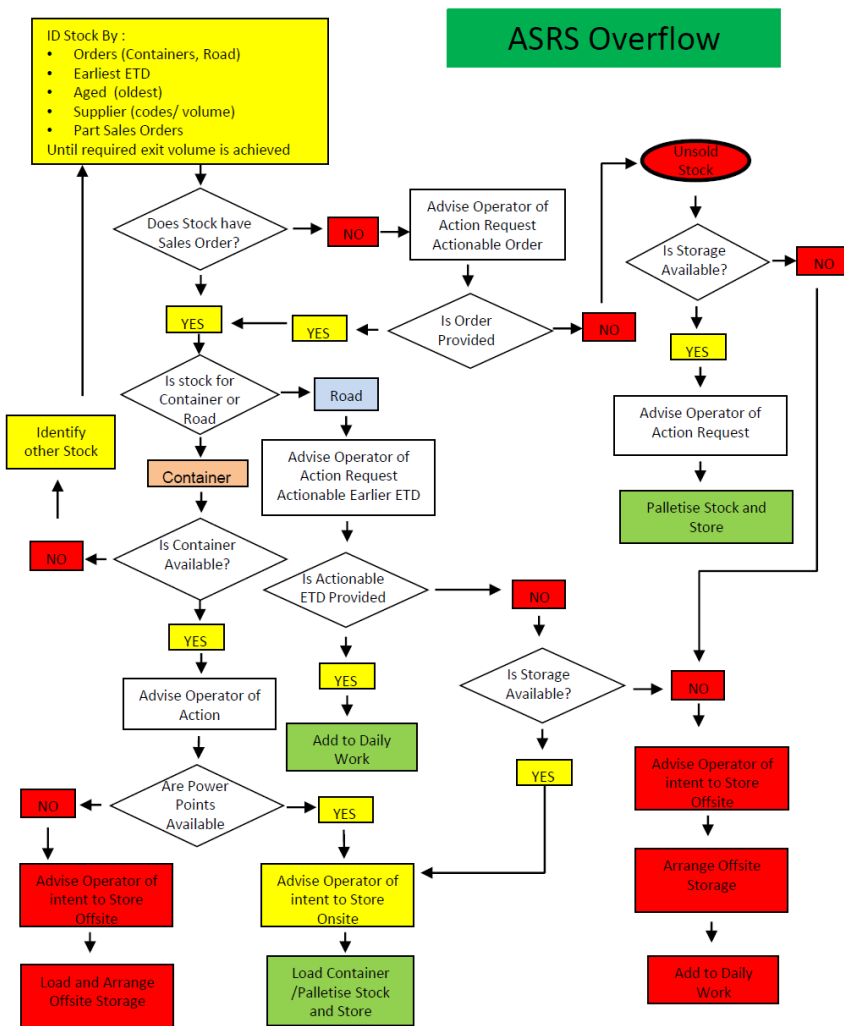
are unsuitably trained to be productive at loadout, therefore, often absentees are not replaced and adds extra work and required overtime for present staff.

By running a rotational roster staff requirements can be planned and adjusted based on workdays workload and staff changes due to absentees. No required staff should be cross trained in other areas with similar functions like Packing Room or Lidding area. This will in turn minimise the impact of absentees on loadout as well as other areas, ensure staff are readily available and trained.

Stock Control Rules

Implementing proper stock control principles that addressed applying limits to how many days operator stock can be stored on site. This will ensure those associated costs are reduced and do not affect productivity. This would aid with planning operations reduce variation in the most efficient way possible thus reducing costs. Refer (Chart 6 ASRS Overflow Process)

Chart 6 ASRS Overflow Process



ASRS Purging

Purging of Stock is to be conducted when ASRS Section (Chilled or Frozen) has reach it working capacity Stock purging process should be done by prioritising stock for retrieval base on following criteria once amount of stock required to purge has been determined

1. Stock with full sales orders initially priorities Containers then Road Freight
2. Orders with earliest ETD dates to be priorities with request for ETD to be moved forward when possible, to minimize storage cost to operators
3. Age stock will also be assessed initially based on time on hand, operator % stock in storage and codes. but will only be purged if retrieved orders don't create required space. Cost will apply for excess time on hand IAW Trading Guidelines
4. As a final solution if storage space allows part orders can be purged and containers part packed.
5. Operator will be advised of stock retrieved to create room in ASRS as required
6. Whether stock is stored on or off site is at the discretion of John Dee Management
7. If stock is aged & not on an order or will become aged & on an order based on ETD dates appropriate charges and costs for the handling, storage on or off site will be applied IAW Trading Guidelines
8. If stock was on order no changes will be allowed upon stock being set for retrieval and storage

Chart is a illustration of the process used by Loadout leadership to manage stocklevels, even though it helps create room to aliviate issues currently such procedures are regularly used because no rules are established in contracts for operator to manage this issue. This process is purely reactive and doesn't proactively solve issue or recover cost associated with overstock conditions and handling of stock

Set Up KPI/ RE based Workload Management and Evaluative Measures

Currently there is no capabilities or evaluative management system for the loadout. Due to the variability of work and limitations the evaluation of performance is extremely difficult.

With the upgrades the complexity and variable of work has been reduced and the ability to program the rate of work are available. Given these factors it should be possible to establish performance based evaluation against work(RE or KPIs), and establish planning process and measurable daily goals for operations.

Due to the numerous requirements to setting up KPI program, a staged approach need to be taken starting from the top management by

- Map specific business goals to content of KPIs & Metrics for all operations not just Boning Operation
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8.0 Bibliography

N/A

9.0 Appendices

N/A