Appendix 5

Country Profile - The Vanuatu beef industry

The following report was prepared within the ACIAR funded Small Research Activity, *Research opportunities for smallholder beef cattle systems in Pacific island countries* (LS-2018-102). The report was co-authored by two members of the LPS-2014-037 project research team (Waldron and Quigley). The report draws on research findings from the current project and builds on previously available information to provide the most comprehensive recent review of the Vanuatu beef sector. It is included as an Appendix to the current report to provide a description of the broader operating environment and context within which the LPS-2014-037 research activities were undertaken.

The Vanuatu Beef Industry

Country report for ACIAR Project LS/2018/102

Research opportunities for smallholder beef cattle systems in Pacific island countries

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Acronyms

ACIAR - Australian Centre for International Agricultural Research

AI - Artificial Insemination

AU$ - Australian Dollar

AUSAID - Australian Aid

BSE - Bovine Spongiform Encephalitis

BVD - Bovine Venereal Disease

EDF - European Development Fund

ET - Embryo Transfer

EU – European Union

EUR - Euros

FOA – Food and Agriculture Organisation, United Nations

FAO Stat - Food and Agricultural Organisation Statistics

FJD - Fiji Dollar

FMD - Foot and Mouth Disease

GDP - Gross Domestic Product

Ha - Hectare

J Export - Japanese Export

JICA - Japanese International Co-operation Agency

JTWC - Joint Technical Working Group

kg - Kilogram

LDC - Least Developed Country

LIWG - Livestock Industry Working Group

LSU – Livestock Unit

MAB - Meat Advisory Board

MALFFB - Ministry of Agriculture Livestock Fisheries Forests and Bio Security

MLC - Meat and Livestock Corporation

MTSP – Medium Term Strategic Plan

MTTCINVB - Ministry of Tourism, Trade, IndustryCommerce and ni-Vanuatu Business

NBV - National Bank on Vanuatu

NDS – National Development Strategy

NIP – National Indicative Programme

NLF – National Livestock Framework

NTDC - National Trade Development Committee

NZ - New Zealand

NZMFAT - New Zealand Ministry of Foreign Affairs and Trade

ODA - Overseas Development Aid

OIE - World Organisation for Animal Health

OPSP - Overarching Productive Sector Policy

PACER - Pacific Agreement for Closer Economic Relations

PHAMA - Pacific Horticultural & Agricultural Market Access

PIC – Pacific Island Country

PNG - Papua New Guinea

PPP – Public Private Partnerships

R Butcher - Rural Butcher

SATEC - Support for Agricultural Technology Project

SCPP - Small-holder Cattle Purchase Scheme

SMP - Santo Meat Packers

SPC - The Pacific Community / Secretariat of The Pacific Community

U Butcher - Urban Butcher

V Export - Vila Export

VAC - Vanuatu Agricultural Collage

VADB - Vanuatu Agricultural Development Bank

VAL - Vanuatu Abattoirs Limited

VARTC - Vanuatu Agricultural Research and Technical Centre

VLB – Vanuatu Livestock Board

VCCI - Vanuatu Chamber of Commerce and Industry

VT – Vatu (VT$1 = AU$0.012 on 01-Jul-2018)

1 Introduction

1.1 Background to report

The beef cattle sector plays a significant role in livelihoods in many Pacific island countries (PICs). Contributions of the industry vary by locality but includes contributions to localised consumption and ceremonies, rural incomes, downstream industry and trade. Benign tropical systems in the region are well suited to cattle production, and under-utilised resources are available to boost productivity in some countries. There is robust demand for beef in a diverse range of markets.

Cattle production is however stagnant in nearly all countries and small-holder segments of the industries are under-performing. All national governments are interested in building or revitalising beef industries to various degrees. The sector is under-invested and under-researched, and policy is not necessarily informed by detailed, household-level or up-to-date research.

Against this background, ACIAR commissioned a Small Research Agreement to investigate research opportunities for small-holder beef cattle systems in the Pacific namely Fiji, Vanuatu, Samoa, Tonga, and the Solomon Islands.

This report provides a brief descriptive analysis of the Vanuatu beef industry. The research was conducted in 2018 using the following methods:

- A review of existing published or unpublished literature on the Vanuatu beef industry;
- Statistics collected from international databases, from government sources and from industry;
- A scoping trip, including interviews and field visits with government agencies, extension; and education providers and the commercial sector (small-holder and large holder cattle producers, abattoirs, butchers, input suppliers).

This country report on Vanuatu will be combined with country reports from Fiji, Samoa, Tonga and the Solomon Islands to identify priority areas of research in beef cattle production and marketing in the Pacific that falls within the remit of ACIAR.

1.2 Summary

Vanuatu has the reputation as the biggest and best beef producer in the Pacific. Although estimates vary, Vanuatu has perhaps 115,000 cattle. This national cattle herd is slightly smaller than Fiji's but, unlike Fiji, is a beef rather than dual-purpose dairy and draught herd. Perhaps half of the cattle are held by small-holders, predominantly under coconuts or in the bush and the largest provincial herd is located on the island of Espiritu Santo in the north of the country.

Unlike other Pacific island countries, Vanuatu is a beef exporter with two large export-accredited abattoirs and another new modern plant, which supply vibrant butcher and hotel markets. All abattoirs are operating well under-capacity. This is partly because perhaps half of all cattle (mainly from small-holders) are used for ceremony, but also because of excessive capacity in the processing sector, and limits to cattle supply.

The limits are not necessarily from resource endowments. Many areas and households have land that can be used and improved for cattle production, and labour that can be diverted to cattle if small-holders can see incentives and have technical and management support. Such support was available until the late 1980s / early 1990s and lies dormant amongst many government staff and farmers. While the environment has changed, some farmers, including the younger generation, are moving into off-farm work and lucrative crops like kava, other farmers are interested in improving livelihoods through cattle. After years of neglect a suite of projects are supported by the Government of Vanuatu, including in small-holder research (Quigley et al, 2014) that can scale up through the government extension and training programs, assistance for semi-commercial producers (NZMFAT) and overall industry development (EDF-11).

2 Underlying structures

The Republic of Vanuatu is an archipelago of around 83 islands and numerous islets with a population of approximately 260,000 (Figure 1). The total land area is 12,000 km², which represents just 1.4% of the total area, including sea (CIA, 2018).

Vanuatu is an agricultural society where most of the population (over 80%) is involved in farming and fishing either for subsistence, livelihood, or cash income. This population resides in rural areas and food/cash production activities continue to employ the greatest percentage of the labour force.

Whilst at least 70% of the population resides in rural areas and depends on agriculture for their livelihoods, productivity in the traditional crop sectors is low. The productive sector has therefore yet to realise its full potential to generate broad-based growth, increased employment income, and the overall well-being for the nation . The increasing monetization of the economy and the lack of economic opportunities in the rural areas have accelerated urban drift particularly of young people leading to rising urban unemployment (Government of the Republic of Vanuatu, 2012).

The main resource for agriculture and livestock activities is land allocated through custom systems, which also determine the role of men and women within the community and subsequently their participation in the income generating activities.

The Ministry of Agriculture, Livestock, Forestry, Fisheries, and Biosecurity (MALFFB) and the Ministry of Trade, Tourism, Industry, Commerce and n-Vanuatu Business (MTTICNVB) both have jurisdiction over agricultural and rural development.

Vanuatu was admitted to the group of Least Developed Countries (LDCs) in 1985 mainly due to very high vulnerability to natural disasters (UNEAPD, 2018). It was due to leave the LDC grouping in 2017, as it had met indicators that would allow it to “graduate” to Developing Country status, but this was delayed by the impact of Tropical Cyclone Pam in 2015.

The impact of Cyclone Pam can be seen in the decline in GDP growth in 2015 -0.8% (Table 1). This indicates the extreme vulnerability of Vanuatu to natural disasters where it currently ranks amongst the most vulnerable nations (BEH & RUB, 2018 & UNWRI, 2018). The response from the international community and on overseas development aid actually created a cash surplus in 2015. Ongoing expenditure in 2016 and 2017 give a better indication of the true cost of recovery. Currently the eruption of volcanos on Ambae

has blanketed many pastures and water sources in ash with the evacuation of the island resulting in livestock and crops left untended.

After the devastation of Cyclone Pam in 2015, Vanuatu's GDP growth rate has increased to nearly 4%. However, whilst government's income has remained relatively stable in its growth, government expenditure in the aftermath of the cyclone has more than doubled.

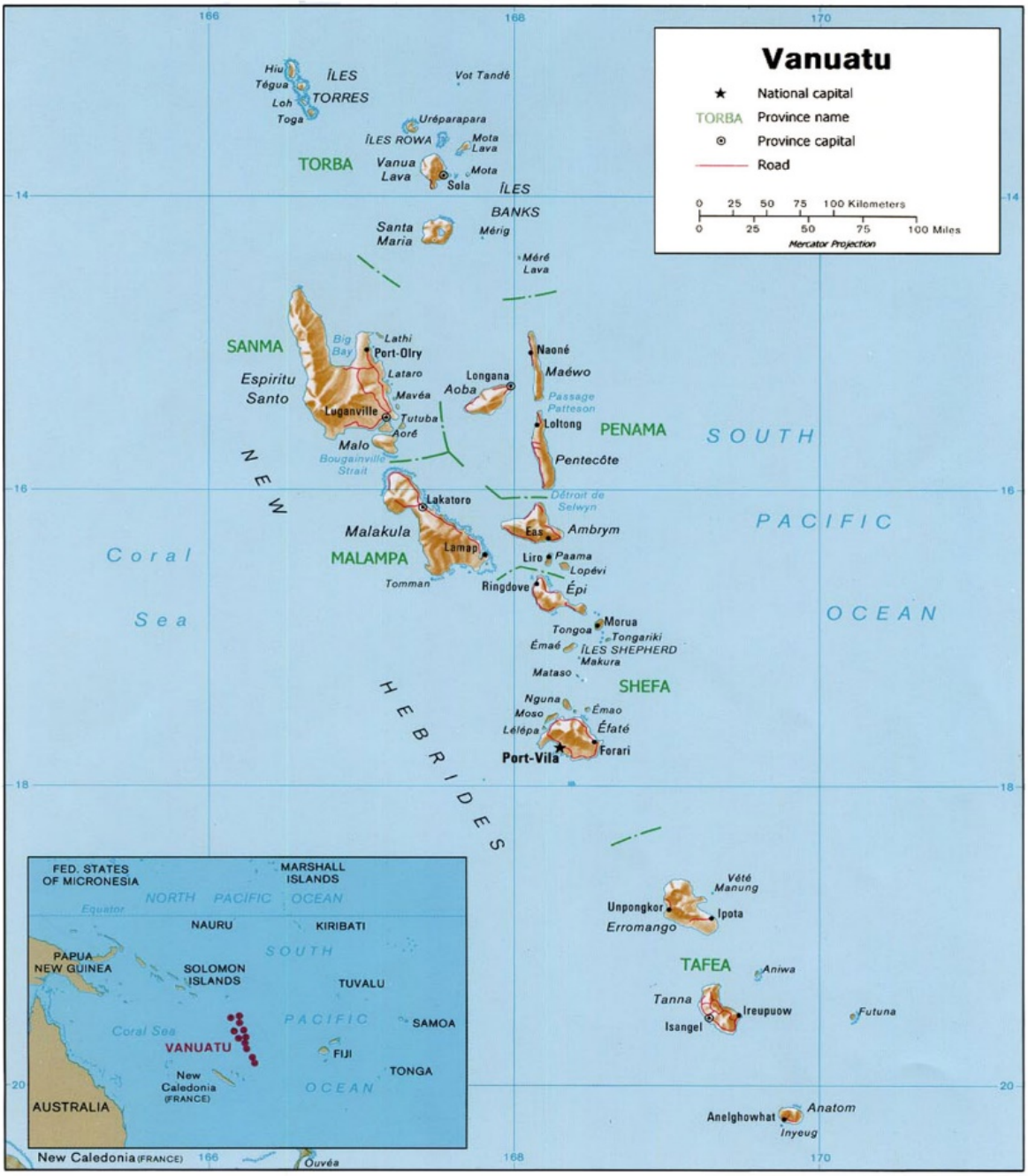

Figure 1: Map of Vanuatu

Source: Nations Online (2018)

Table 1: Macro Economic indicators, Vanuatu 2011-18

Indicator	2011	2012	2013	2014	2015	2016	2017	2018
GDP growth rate (%, constant price)	1.2	1.8	2.0	3.6	-0.8	3.3	3.6	3.9
Inflation Rate	0.7	1.4	1.4	0.8	2.5	2.1	2.8	3.2
Govt revenue billion Vt	15.8	15.8	16.3	18.6	25.8	24.8	25.5	
Govt expend billion Vt	17.3	16.9	16.4	18.0	20.0	33.9	41.3	
Govt balance billion	-1.5	-1.2	-0.2	-0.6	5.6	-9.1	-15.8	
Net ODA received USD million	91	102	91	100	187			
Reserves month imports	4.5	4.6	4.8	5.0	6.3			

Source: UNCDP (2017)

The GDP of Vanuatu is broken down in Table 2. Agriculture contributes 21% to total GDP. Cropping makes up 85% of this total with livestock, fisheries, and forestry contributing the balance. The largest contributor to GDP is the service industry. Tourism, although impacted by the cyclone and by damage caused to the runway at the airport in Port Vila, offers considerable opportunities for growth.

Table 2: Vanuatu GDP by sector

	2008	2009	2010	2011	2012	2013	2014	2015	2016	% 2016
GDP at current prices million Vatu										
Crop	10,119	10,183	11,154	13,009	14,201	14,947	15,501	15,428	15,669	85%
Animal	1,309	1,532	1,724	1,928	2,632	2,636	2,952	1,007	1,081	6%
Forest	613	703	758	798	794	877	979	940	984	5%
Fishing	399	449	439	482	488	485	501	513	527	4%
Agriculture (sub-total)	12,440	12,868	14,075	16,216	18,115	18,945	19,932	17,887	18,260	21%
Industry	5,435	7,082	8,364	6,887	5,455	5,962	6,429	8,899	9,141	10%
Services	37,971	39,886	41,686	43,803	44,291	46,045	47,889	50,741	54,724	63%
Tax	8,394	8,193	6,947	7,611	7,637	8,087	8,432	8,718	8,489	10%
Less bank service	-2,651	-2,910	-3,160	-3,644	-3,082	-3,236	-3,574	-3,448	-3,364	-4%
Total	61.607	65.119	67.912	70.873	72.415	75.803	79.109	82.798	87.250	
Percentage change in GDP current prices										
All Agriculture	12.2	3.4	9.4	15.2	11.7	4.6	5.2	-10.3	2.1	
Animal	25.9	17.1	12.5	11.8	36.5	0.1	12.0	-65.9	7.4	

Source: VNSO (2016b)

3 Beef industry statistics

Statistical anomalies and differences in sources and methods, make it difficult to quantify structures and trends in the industry, though some attempt to do so is made in this section.

3.1 Macro indicators

Statistics reported by the United Nations, Food and Agriculture Organisation (FAO) suggest that cattle numbers in Vanuatu have plateaued in recent years, with modest increases in other livestock (Table 3; see also Section 4.2). However, turnoff/slaughter numbers reported by FAO have declined in in the same period, along with beef production, with little change in average carcass weights (Table 4) which look realistic.

Table 3: Livestock numbers, 2011-26

Head	2011	2012	2013	2014	2015	2016
Cattle	170,000	172,000	173,000	175,000	176,693	174,745
Chickens	700,000	700,000	750,000	800,000	835,000	840,000
Goats	24,000	25,000	25,000	26,000	26,916	28,222
Pigs	92,000	93,000	94,000	94,000	94,096	98,106

Source: FAOStat (2016)

Table 4: Meat output, 2011-16

		2011	2012	2013	2014	2015	2016
Pig	Tonnes	3,468	3,519	3,519	3,523	3,518	3,645
	Carcass Kg	51	51	51	51	51	51
	Turnoff	68,000	69,000	69,000	69,000	68,813	71,474
Cattle	Tonnes	3214	3390	3289	2987	2904	2922
	Carcass Kg	210	203	188	188	190	191
	Turnoff	15,305	16,700	17,495	15,888	15,284	15,298
Hides	Tonnes	508	508	508			
	Carcass Kg	35	34	33			
	Turnoff	14,500	15,000	15,200			
Chickens	Tonnes	900	914	1008	1067	1106	1106
	Carcass Kg	1	1	1	1	1	1
	Turnoff	900,000	914,000	1,008,000	1,067,000	1,106,000	1,106,000
Goat	Tonnes	45	47	47	50	52	54
	Carcass Kg	10	10	10	10	10	10
	Turnoff	4,500	4,700	4,700	5,000	5,229	5,407

Source: FAOStat (2016b)

It is important to note, however, that FAO cattle production statistics are likely to be over-reported. Various statistics on cattle numbers, some of which distinguish between small-holder and estate producers, are shown in Table 5. The data conforms to widespread perceptions that cattle numbers in Vanuatu have declined since a peak around 2000.

Table 5: Cattle numbers and Holdings from different sources

	Small-holder	Estate	Total	Source
1971	11,000	99,000	110,000	Cattle survey reported in Macfarlane (1983)
1983	32,000	68,000	100,000	Vanuatu 1st Agricultural Census 1983, reported in Macfarlane (1983)
1993	40,000	80,000	120,000	Vanuatu 2nd Agricultural Census 1993
2002	40,500	94,500	135,000	Estimate partial cattle count from household surveys
2009			105,051	2009 National Population and Housing Census (VNSO, 2009)
2016			115,540	2016 Mini Census (VNSO, 2016)
2016	27,990	62,010	90,000	2016 Livestock Survey Data (NZMFAT 2017)

3.2 Provincial breakdown

Cattle statistics are disaggregated by province in the most recent 2016 Mini-Census (Table 6). The most significant province is Sanma which includes the island of Santo. The main island in the Malampa province

is Malekula. Torba province is the most remote group in the north of the country including the island of Vanualava. The largest human population is on the island of Efate in the Shefa group.

The lowest number of cattle are recorded in the Tafea group which includes the volcanic island of Tana where beef prices, held up by a strong tourist industry, are almost double the national average. The government has sought to distribute breeding cattle to this province.

It might be assumed from statistics on the number of cattle per holding that the beef industry in Sanma and Torba is relatively commercialized and, conversely, that Malampa and Shefa are uncommercialised. However, there is not necessarily a close relationship between scale of production and levels of commercialisation.

Table 6: Cattle numbers and households by province

Region	Number of cattle	Number of households with cattle	Average number of cattle per household
Vanuatu	115,540	14,017	8
Urban	24,692	712	35
Rural	90,848	13,305	7
Torba	2,076	543	4
Sanma	42,213	3,707	11
Penama	9,626	2,147	4
Malampa	15,315	3,500	4
Shefa	40,145	2,098	19
Tafea	6,165	2,022	3

Source: VNSO (2016)

The trend in all provinces except Shefa is downwards which is believed to be correct (Figure 2). The number of cattle recorded in Sanma in the 2007 Census is recorded at 91,000 but 48,000 in Tomoyan (2018). The growth in Shefa seems exaggerated and Tomoyan concludes that "there is an issue of consistency in livestock data" (2018).

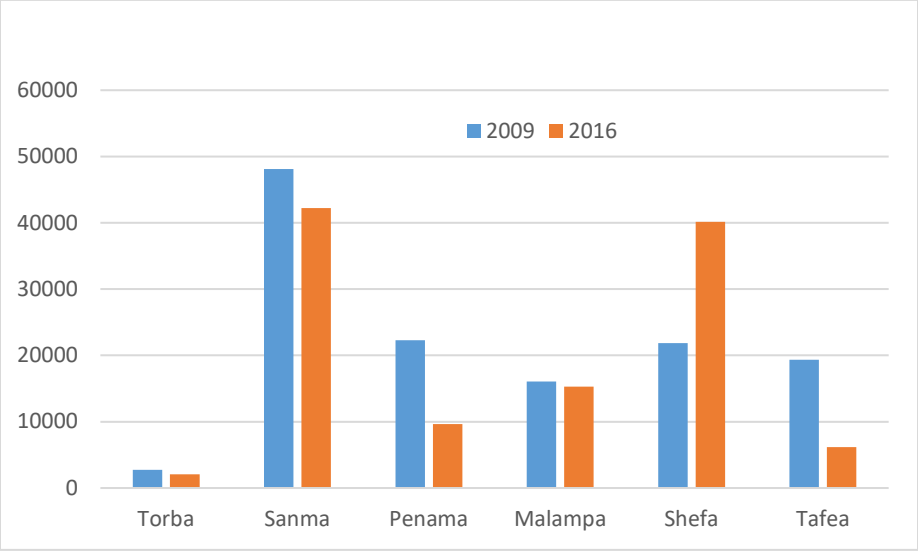

Figure 2: Trend in cattle distribution by province in Vanuatu.

Source: VNSO (2007) and Tomoyan (2018)

The scale of household production is shown in Table 7. As could be expected most cattle producers are small scale, with 1-20 head.

Table 7: Scale of holdings by province in Vanuatu

Region	Total	1-20	21-40	41-60	61-80	81-100	>100
Vanuatu	14,017	13,222	462	123	38	82	90
Urban	712	521	72	24	17	45	33
Rural	13,305	12,701	390	99	21	37	57
Torba	543	525	15	3	0	0	0
Sanma	3,707	3,354	211	59	15	31	37
Penama	2,147	2,103	31	6	2	1	4
Malampa	3,500	3,400	73	16	2	3	6
Shefa	2,098	1,839	117	36	18	46	42
Tafea	2,022	1,923	15	3	1	1	1

Source: VNSO (2016)

3.3 Distribution of slaughter by processing plant

Most of the cattle are slaughtered in Port Vila where slaughter numbers remain reasonably constant. There seems to be a steady decline in the number of cattle slaughtered on Santo which results in an overall national decline in the number of cattle slaughtered. Combined slaughter numbers are shown in Figure 3.

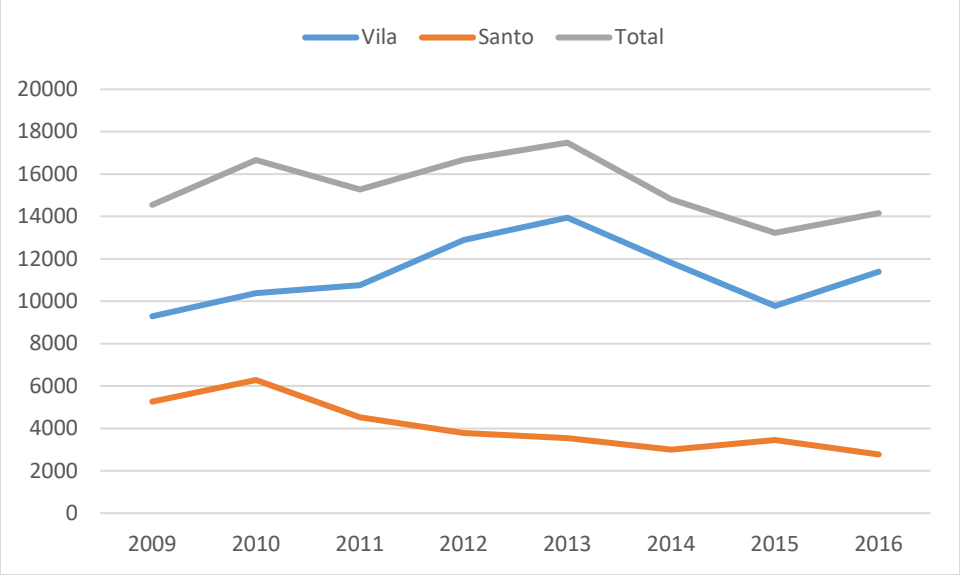

Figure 3: Number of cattle slaughtered by abattoir and combined in Vanuatu

Source: Tomoyan (2018)

3.4 Other farm and herd characteristics

Other characteristics of cattle farms and herds are available based on the 2007 census (Tables 8, 9, 10, 11, and 12). While these data are likely to have changed overtime, they never the less provide a snapshot of the structures of the industry.

Table 8: Farm holdings and infrastructure

Criteria	Number or Percent
Total cattle	174,152
Paddocked cattle head	124,955
Open grazed head	49,197
Area of paddocks Ha	53,607
Holdings	17,176
Holdings with Paddocks	34%
Holdings with Stockyards	10%
Holdings with water	22%
Holdings improved grass	88%
Holdings with Fences	95%
Holdings that sold cattle	24%

Source: VNSO (2007)

Herd structures are shown in Table 9. Cows account for 40% of the herd, but calves account for just 16%, suggesting a very low calving rate (of 40%). This is carried over into the number of heifers and steers which account for 30% of the total herd, but when taken over a two-year growing period represents 15% in each annual age-group. The proportion of bulls at 13% is high and probably reflects poor management in the castration of male cattle.

Table 9: Herd structure by class of cattle

Class	Age	Percent
Calves		16%
Bulls	1 year and above	13%
Steer	1 year and above	15%
Heifers	Less 2.5 years	16%
Cows		36%
Cows	2.5 years no calf	4%

Source: VNSO (2007)

Regarding land tenure, most cattle farmers have recognized tenure on their farms. It is however often very difficult to transfer ownership to new entities, which may inhibit farm expansion or efficiencies (Table 10).

Table 10: Number of cattle paddocks holdings by tenure

Tenure	Total	Owned	Rented	Custom	Free
Torba	312	278		19	15
Sanma	3,191	2,560	11	205	415
Penama	1,379	1,162	11	78	128
Malampa	1,115	972	19	86	38
Shefa	802	673	18	50	61
Tafea	1,909	684	68	474	683
Total	8,706	6,326	128	913	1339

Source: VNSO (2007)

Statistics class most cattle as “local” (Table 11), but with high rates of cross-breeding with improved breeds, both *Bos taurus* and *Bos indicus*, across the country.

Table 11: National herd structure by breed

Breeds	Charolais	Brahman	Limousine	Illawara	Simental	Angus	Hereford	Local
Torba	15%	1%	0%	0%	0%	0%	1%	83%
Sanma	23%	18%	3%	0%	0%	0%	1%	55%
Penama	11%	2%	0%	0%	0%	0%	1%	86%
Malampa	18%	2%	1%	1%	1%	1%	0%	76%
Shefa	17%	4%	3%	2%	1%	0%	2%	72%
Tafea	17%	5%	6%	1%	0%	7%	1%	63%
Total	18%	7%	3%	1%	0%	2%	1%	69%

Source: VNSO (2007)

Anecdotal evidence and observation (Cole *et al.*, 2015) suggests that about 75% of cattle are sold fully grown. About 25% of cattle are sold as young stock for fattening on other properties. There has also considerable growth in the sale of weaner cattle recent years in to service demand for veal, especially in Port Vila. It is possible that uncastrated bulls are being sold before they become sexually mature. The price of weaner beef in the retail butchers is lower than the price of mature beef. The distribution of prices recorded from the 2007 agricultural census is shown in Table 12.

Table 12: Indication of cattle sold by value at sale across the provinces in Vanuatu

	<VT9,999	VT10,000-19,999	>VT20,000
Torba	0%	22%	78%
Sanma	5%	15%	80%
Penama	3%	23%	74%
Malampa	7%	35%	58%
Shefa	7%	16%	77%
Tafea	4%	13%	83%
Total	5%	19%	76%

Source: VNSO (2007)

3.5 Split between commercial and subsistence sales

Figure 4 indicates the scale of the large-holder sector against sales from the subsistence sector, confirming the dislocation of small-holder farmers from commercial opportunities. There is a significant fall in the value of cattle sold from the commercial sector in recent years which is in line with other indicators. This figure probably underestimates the value of beef consumed in the subsistence markets particularly as most cattle are in holdings of less than 20 head.

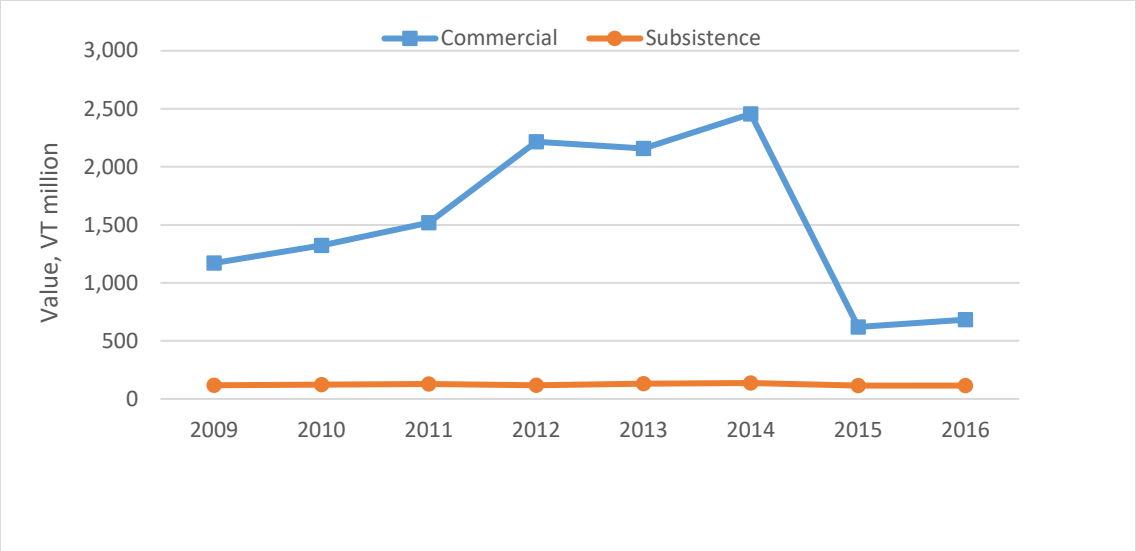

Figure 4: Value of cattle sales from large-holder (commercial) and small-holder (subsistence) sector in Vanuatu

Source: Tomoyan (2018) based on VNSO (2016)

3.6 Meat consumption

Vanuatu consumes just below the world average for total meat consumption (Table 13) and note that these figures represent "revealed consumption", derived from (inconsistent) data on beef supply, net trade, and population. Interestingly pork, not beef, is the main meat consumed, and the amount of poultry consumed is well below world average.

Table 13: Meat consumption(kg per capita)

Meat consumption per capita	Beef	Pork	Poultry	Mutton	Other	Total
Vanuatu	11.0	16.1	6.5	0.2	0	33.8
World Average	9.5	14.9	12.5	1.9	0	38.7
Australia	43.5	23	39.3	14.3	1.1	121.2

Source: SCRIBD (2018)

3.7 Beef trade

Vanuatu is renowned as the only Pacific country with the volume, quality and infrastructure to be able to export beef. This is partly because ownership of a large plant in Santo (Santo Meat Packers, SMP) which facilitates integration to Japanese markets. Other export markets include the Solomon Islands and PNG (World Trade Map, 2018).

Trade statistics reported in international databases (Tables 14 and 15) suggest that exports volume along with cattle numbers and slaughter have declined. It is important to note however that export data is incomplete and the total exports of 228 tonnes is likely to be under-stated. A tonnage of around 1,100 tonnes was reported in Cardno (2014). The Vanuatu Meat Inspection Service reports that production at the two main abattoirs (Vanuatu Abattoirs Limited, VAL and SMP) of 2,300 tonnes.

Table 14: Vanuatu exports (AU$ 1,000s)

HS code	Product label	Vanuatu exports to the world (AU$1,000)				
		2013	2014	2015	2016	2017
0201	Meat of bovine fresh	3		219	1,171	676
0202	Meat of bovine frozen	2,163	2,999	2,718	1,368	1,075
0206	Edible offal of bovine	25	32	20	3	3

Source: World Trade Map (2018)

Table 15: Vanuatu beef exports (Tonnes)

HS code	Product label	Vanuatu's exports to world Volume (tonnes)				
		2013	2014	2015	2016	2017
0201	Meat of bovine fresh	0		18	111	70
0202	Meat of bovine frozen	417	585	411	192	158
0206	Edible offal of bovine	5	7	3	0	0

Source: World Trade Map (2018)

The main meat import into Vanuatu is chicken meat, most likely from the United States and Australia.

Table 16: Vanuatu meat imports (Tonnes)

Product code	Product label	Vanuatu's imports from world (tonnes)				
		2013	2014	2015	2016	2017
0201	Meat of bovine fresh	1	1	0	0	0
0202	Meat of bovine frozen	52	34	1	2	13
0206	Edible offal of bovine	0	53		0	2
0203	Meat of swine, fresh, chilled or frozen	38	22	21	106	84
0204	Meat of sheep or goats, fresh, chilled or frozen	68	71	33	22	14
0207	Meat and edible offal of fowls	1,875	1,831	2,397	2,972	3,477
0210	Meat and edible offal, brined	4	15	7	27	32

Source: World Trade Map (2018)

4 Vanuatu beef cattle value chains

4.1 Industry map

The industry map (Figure 5) shows the volume and value of beef through the value chain to the various markets and end uses. Note this map is based on much higher stock numbers 190,000 than is accepted in more recent data. However, the distribution of cattle and value chains remains valid.

An estimated 197,000 total cattle yield, per annum, about 4,360 tonnes of beef, and an additional 275 tonnes is imported. Extrapolation of data suggests a turnoff rate of 11%. Most beef derives from the commercial and semi-commercial sectors. The small-holder sector contributes just 460 tonnes to the formal abattoir sector, and more indirectly through cattle sold for fattening to commercial farmers. Most of the turnoff from the small-holder sector is informal and used especially in ceremonies. There is very little reliable information about the real extent of this trade and volume. This extends to estimating the

actual size of the national herd. Without a detailed census it is very difficult to accurately define the scale of the informal sector.

All meat in the formal sector is processed through three abattoirs operating to international standards. Two abattoirs in Santo are privately owned. The abattoir on Efate is owned under a partnership between the Government and the private sector. These abattoirs are vertically integrated, with the abattoir owners also owning a significant portion of the cattle farms. Cattle killed for the domestic markets are supplied in quarters to butcheries. Beef for export is vacuum packed and exported as end use cuts.

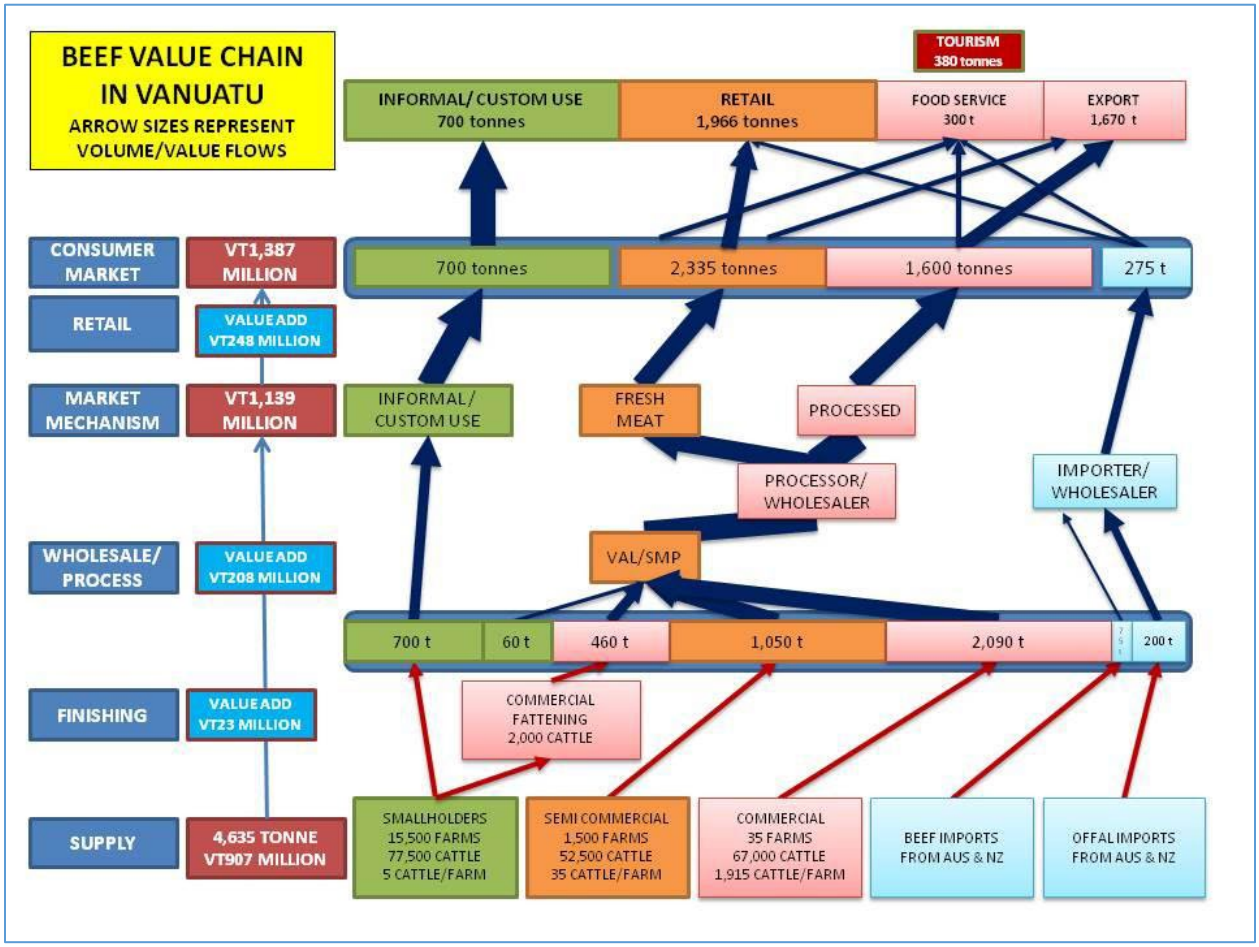

Figure 5: Vanuatu beef value chain

Source: Cardno (2014) Note that in the light of recent surveys (including VNSO, 2016), volumes of product are over-stated, but it is argued that the channels and the proportions remain valid.

4.2 Chain margins

The complete Vanuatu beef cattle value chain consists of several sub-chains with different end markets (Cole et al, 2015). The first four chains identified below represent lower value markets. The last three chains represent the higher value markets.

The different value chains identified, defined by end markets, include:

- Custom: The sale or transfer of live cattle to the custom market[2].
- Cull: The slaughter sale of culled[3] cattle as bagged meat in rural areas.
- Bush Kill: The slaughter and sale of prime cattle into the domestic rural market.
- Rural Butchers: The slaughter and sale of meat by rural butchers in shop facilities.
- Urban Butchers: The sale of cattle through middle men into urban butcher shops.
- Port Vila Export: The sale of boxed meats for export through the Port Vila abattoir.
- Japan Export: The sale of boxed meats to through the Santo abattoir to Japan.

Costs in each step of the different chains are reported inTable 17 and Figures 6, 7, 8 and 9:

- Cattle cost
- Live animal transport
- Killing fee[4]
- Abattoir margin
- Freight of meat
- Wholesale retail margins

The price data included below in Table 16 was collected in 2015 through interviews with chain actors on field trips to Malekula, Epi, Malo and Santo, and visits to retailers in Port Vila, Santo and destination countries. Values in Table 17 represent the value of a typical animal in each category.

Table 17: Value per head received along different value chains

	Custom	Cull	Bush kill	Rural butcher	Urban butcher	Export	Japan export
Freight		4,760	6,800	544	598	5,386	5,386
Kill fee					14,960	14,960	14,960
Farmer	14,000	14,000	20,000	30,000	49,400	34,000	34,000

Source: Cole et al (2015)

These data are presented graphically below (Figure 6). The custom and rural markets have very short value chains with virtually no cash charges and the farmer retains virtually the entire value of each animal. Other chains are more complex, with extra costs in the longer value chains. The revenues to farmers are seemingly highest in these long chains, but it is important to note that costs for the farmer are also likely to be higher. Either way, retail margins earned in the export markets dwarfs returns earned in country. A killing fee has been calculated based on the declared charge at the abattoirs in Vanuatu. The abattoir margin is the difference between the stated killing fee and the price earned from selling meat across the border.

[2] Custom, alternatively kastom, is a deep-rooted cultural concept which can be roughly translated as meaning 'customary' or 'traditional'

[3] Unproductive typically breeding animals

[4]The charge from the abattoir for slaughtering a beast charged as V, per kg carcass weight.

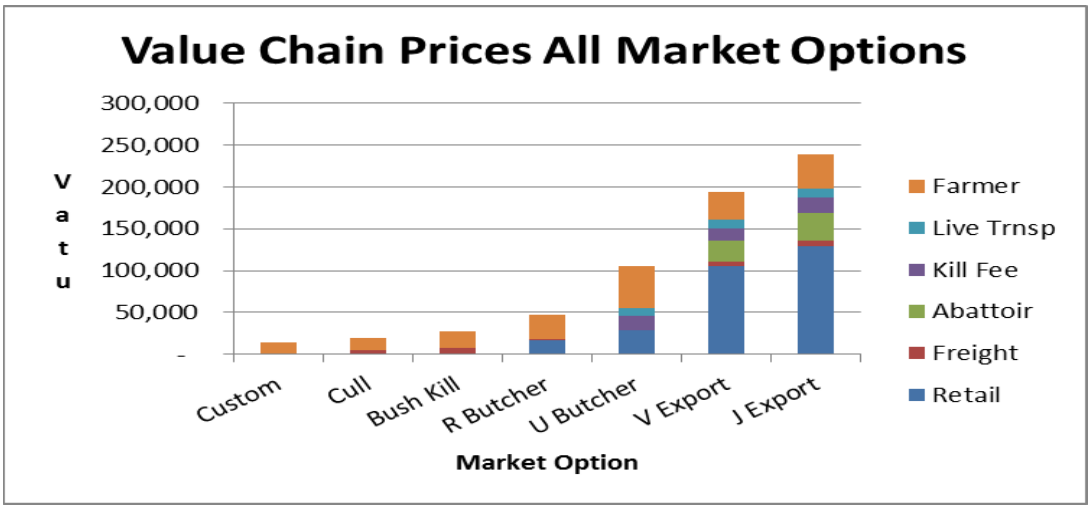

Figure 6: Value achieved per head by sector in different value chains

Source: Cole et al. (2015)

The actual percentage of the retail value retained by the farmers is described in Figure 7 below. As the complexity of the value chain grows the percentage returned to the farmer lessens.

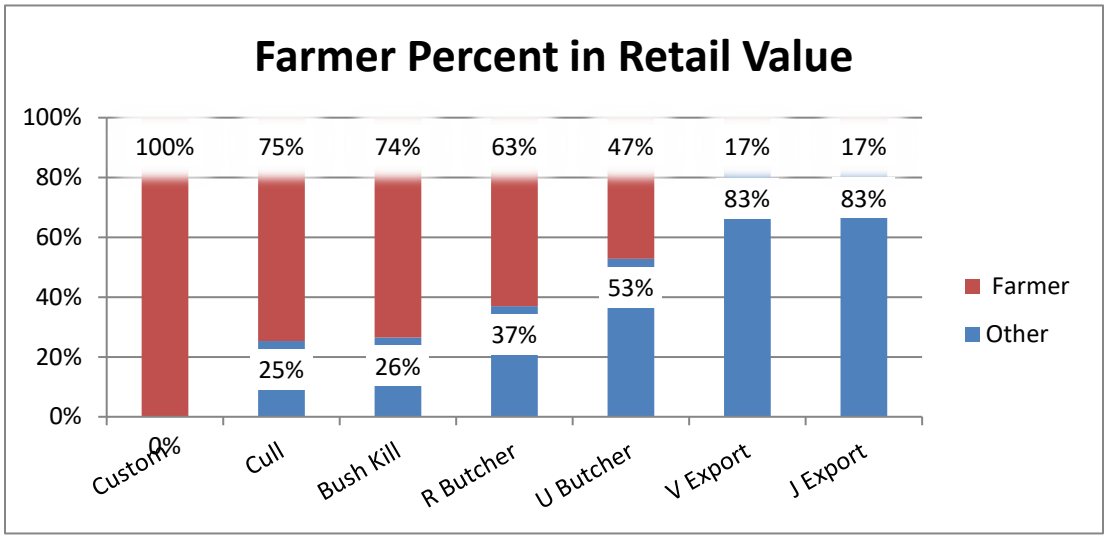

Figure 7: Farmer value as percent of total price in different value chains

Source: Cole et al. (2015)

As the percentage of value returned to the farmer declines in the longer value chains, the actual cash value received by the farmers increases (Figure 8). By removing all downstream value chain costs (off-farm costs) the markets that give the highest return to the farmers are identified. Unfortunately, small-holder farmers do not access these higher value markets.

The urban butcher market gives the highest value per animal because they are prepared to pay a higher price per kilogram (VT270/kg as opposed to VT200/kg for the same sized animal).

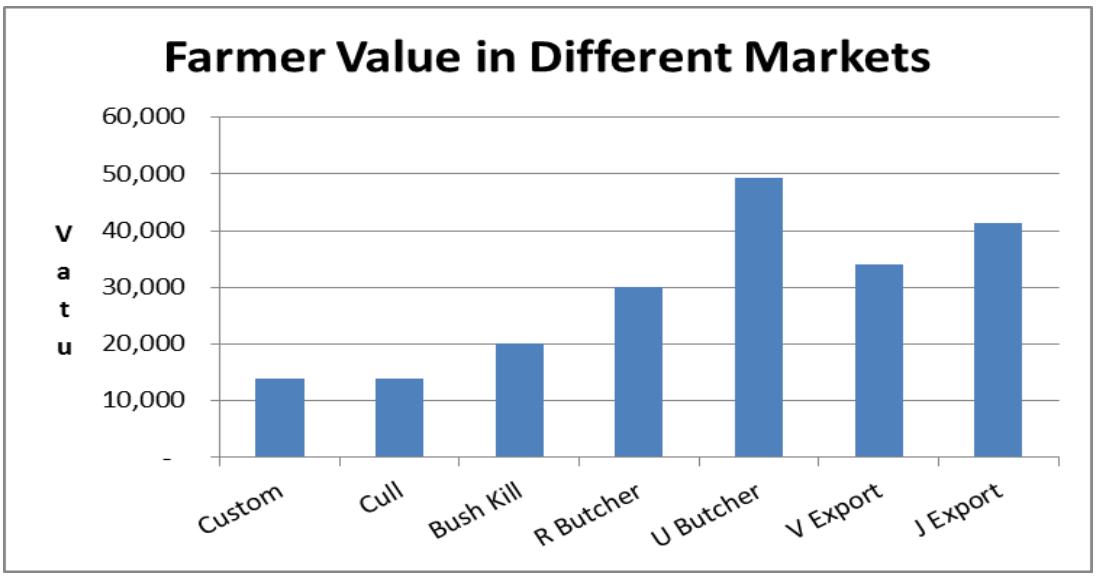

Figure 8: Value received by farmers in different value chains

Source: Cole et al. (2015)

Figure 9 excludes the large export margins making it easier to observe the values received by different actors along the value chain in the local markets.

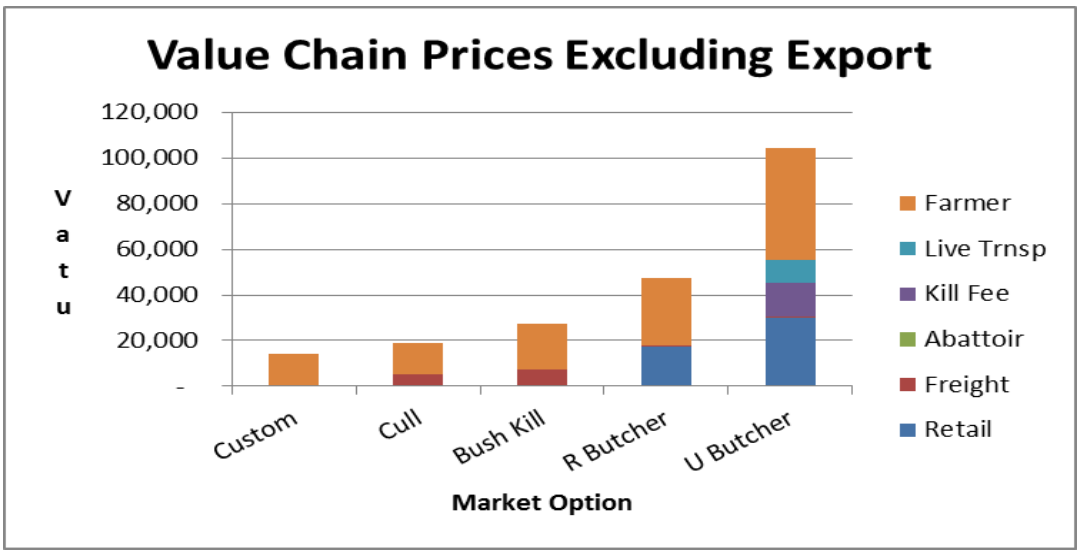

Figure 9: Total receipts for cattle in local markets excluding export receipts

Source: Cole et al. (2015)

Small-holders are typically excluded from these higher value-markets because of poor quality, small numbers of cattle, poor logistics and geographical distance. Whilst the percentage received by farmers increases in the lower value shorter value-chain markets, the actual value for each animal received declines. Small-holder and particularly remote island farmers operate in a parallel market system unintegrated with the main commercial markets.

The sale to urban butchers offers the biggest returns to farmers. Quality (carcass conformation and age / tenderness) is required in this market. This market is under-supplied and therefore offers a premium price. Rural butchers offer the best return for remote farmers on outer islands but are not geographically accessible to many farmers who therefore resort to the lower value custom and bush kill markets. Local price is defined by the abattoir class-weight schedules.

The Japanese export market seems to offer the farmer a higher return, but the additional costs of achieving the required extra weight, together with transport costs, probably means the net returns to the farmer are the same.

A high proportion of value and costs are accrued in downstream sectors of value chains. There are high intermediary costs in Vanuatu including transport, processing and margins. Additionally, up to 83% of the value of exported beef is accrued overseas and does not enter Vanuatu. This limits that margins that can be paid to farmers.

5 Abattoirs

5.1 Market standards and pricing

Abattoirs have the key role in the industry and impact all sectors of the beef sector. They are the only processors for export beef and provide an essential slaughter service for the local formal industry. As such they set the price and standards for the entire beef sector, including the informal sector. There is currently minimal demand for lower quality beef in the export or urban markets. As a result, prices for culled or light animals are heavily discounted.

The two longer established abattoirs in Vanuatu, SMP on Santo and VAL in Port Vila, are vertically integrated, with major cattle suppliers who are also majority owners of the plant. The main market for the abattoirs is the sale of quality grass fed beef into high value markets. The product is sold butchered and boxed clearly identifying the Grass Fed Vanuatu Brand. No attempt is made to market this as an organic product.

Abattoir prices are set as per a published schedule. These values have not changed little in the last nine to eleven years and have therefore declined in real terms. The last major shift came when Japan agreed to relax the requirement for Vanuatu beef to pay 37% duty on entry into the country, at which time the price to farmers increased by 10%, with only minor changes thereafter.

The high liveweight requirement for cattle entering the high value Japanese market is also a barrier for small-holders who do not have access to the improved pastures to reach these weights before the cattle are too old.

The oligopoly status of the abattoirs, as the only link to the export and higher value markets, allows them set prices that are not responsive to normal market forces.

Table 18: Comparative hot carcass weight and carcass price V/kg

	Carcass weight kg	Vila price	Santo price	Butcher price
Steer	270+		190	
Steer	240	190	170	250 to 270
Heifer	240		150	
Steer	200		130	
Heifer	200		130	
Cow	240	140	130	
Cow	150		80	
Bulls	260		115	
Weaners	100			300 to 350

Source: Published price schedule from Vanuatu Abattoirs Ltd (VAL) and Santo Meat Packers (SMP) in May/June 2015.

It is also important to note that another abattoir has entered the market in Santo in 2015. Wong Sze Shing (WSS) aimed to attract cull cows to supply his own canning factory. The owner also provides credit lines to farmers and sees the abattoir as a way to secure his credit. The abattoir operates on a simple price schedule based on class of animal and liveweight. The abattoir pays transport costs. Prices are higher than SMP for lighter animals which do not meet the Japanese export standards, but lower for heavier animals, particularly steers. The abattoir also provides a service kill function for other local butcheries.

5.2 Carcass weight range

There is a distinct difference in the weight range at each abattoir. The Santo abattoir is owned by and specifically targets the Japanese market which requires heavier cattle. This is reflected in the price schedule. Small-holder farmers are not able to reach these weights giving an opening for the WSS abattoir on Santo.

The weight of cattle entering the abattoir in Port Vila is declining steadily indicating either a shortage of cattle or an increase in the sale of weaners (this might amount to the same problem) (Figure 10).

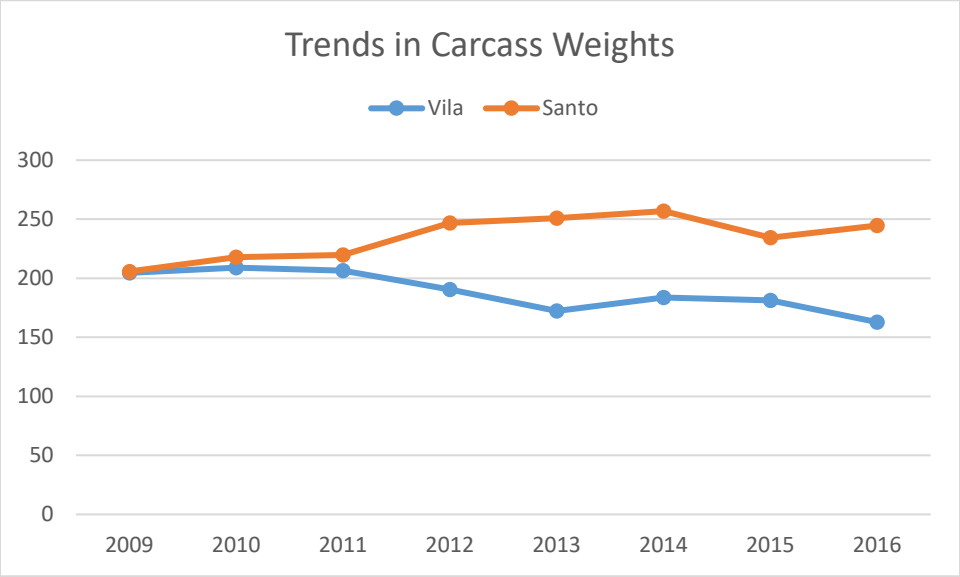

Figure 10: Trends in carcass weights of cattle slaughtered in abattoirs in Port Vila and on Santo

Source: Tomoyan (2018)

5.3 Canning

Previous attempts at canning have failed because even the value of low-quality beef is still higher in Vanuatu than the massed and low value off cuts, waste products, trimmings and offal of much larger industries offshore that are typically used in low value canned beef. These products are sold into highly price conscious markets such as the Pacific islands. It is noted that most of the tinned meat is labelled as tinned "meat" rather than "beef" because it likely contains proteins from other cheaper animal sources than beef.

It is understood that import duty was previously applied to the canning material which undermined the competitiveness of the business.

Local canned meat production was previously impacted by an unfavourable duty regime, though it is understood this is now resolved. The regional canned beef market is very competitive[5] with many products labelled as corned meat[6] as opposed to beef.

5.4 Price comparisons

Beef prices have increased in most countries over the last 10 years and accelerated in 2015. (The Australian price collapsed with the 2018 drought) Buoyant prices were not reflected in the Vanuatu industry, which reduces the profitability and investment in upstream sectors. A comparison with competitor markets and of key industry costs is tabulated below (Table 19).

Table 19: Comparative international meat prices (2015)

	Vanuatu		**Fiji**		**Australia**		
	Steer	Cull	Steer	Cull	Young steer	Heavy steer	Cull
Hook price Vt/kg	190	90	307	265	403	225	152*
Service killing fee Vt/kg	50/64	50/64	19	19			
Industry levy	8	8	1	1			
Rump steak Vt/kg	1,000	300	1590	901	1427		
Export value Vt/kg	560 Japan 520 PNG				599**		
			1 FJD = Vt53		1 AU$ = Vt84		

Source: Fiji Meat Industry Board, South Pacific Butchery Fiji, Woolworths Australia. New World Fiji, (Cole et al, 2015), * NSW price is up to VT302; ** Boneless export to Japan; Note: Australia does not have duty free entry to Japan worth 37% to Vanuatu.

5.5 Utilisation of by products

The VAL abattoir in Port Vila produces meat meal which is used by the local chicken and pig farmers. The (SMP) plant on Santo dumps its waste, which is becoming an environmental issue. Hides are salted and exported from Port Vila but not Santo. Meat meal is processed and sold to small livestock farmers in Port Vila. In Santo, this is dumped. Pluck (heart, kidneys, tripe and liver) is not included in the weighed carcass

[5] Foods Pacific Fiji.

[6] Corned Meat can include meat sources other than beef.

weight of the animal (no value returned to the farmer) and is sold by the abattoirs to the butchers at an extra cost.

5.6 Operational issues

The capital requirements of building an abattoir make it difficult for new players to enter this sector of the industry. Supply is short and declining. None of the three established abattoirs are operating at full capacity, which increases the overhead cost of the operation. The SMP abattoir on Santo used to kill 800 cattle per month but is now operating at a fraction of this and only slaughtering about once per week. Both abattoirs are completely transparent in the recording and payment of killing sheets and invoices, which is under the oversight of the meat inspectors. Scales are regularly tested.

The operational costs of abattoirs in Vanuatu are relatively expensive with low throughput, cheaper but less efficient labour systems, high electricity costs (though it is understood that the Santo abattoir gets a concessional rate) and high freight costs. It is beyond the scope of this study to analyse if the operational costs are efficient.

6 End user markets

Cattle are marketed through a number of channels broadly divided into informal markets (custom transfer, household consumption and rural butchers) and formal markets (urban centres butcheries and export). For simplicity the dividing line between these two chains would be the use of a slaughter house. That aside, some of the rural butchers that sell cattle slaughtered outside formal slaughter facilities have a very sophisticated and professional presentation of meat.

6.1 Breakdown of domestic consumption

Domestic consumption is broken down as per Figure 11.

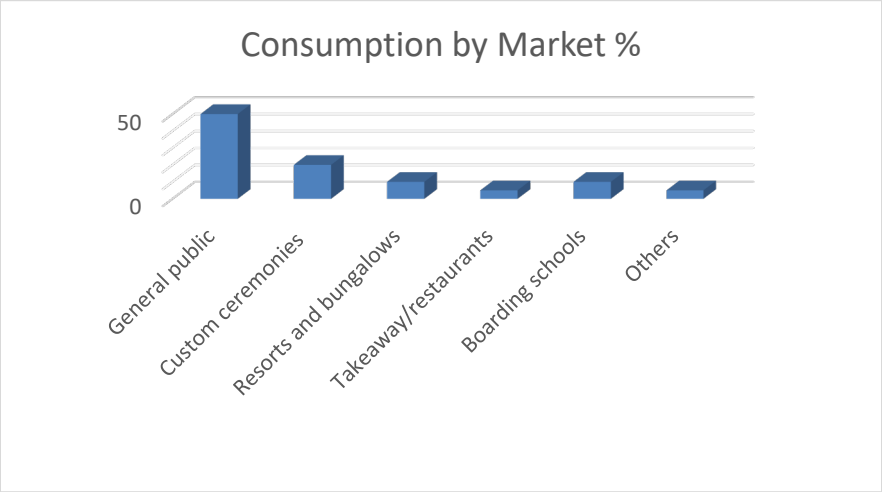

Figure 11: Percentage of beef consumption by local markets

Source: Cole et al (2015)

6.2 Custom transfer

Custom (or lafet) markets operate throughout Vanuatu and typically trade or supply smaller cattle and cull cows indicating a disconnect with the formal markets. Custom markets consist of individuals buying or contributing cattle for custom functions such as funerals and weddings. If cattle are purchased for such purposes, the trade is conducted live at the farm, which minimises transport costs for the farmer or purchaser. Cattle are often slaughtered and taken either as quarters or cut up meat to the function.

Pricing in the custom market varies considerably from island to island (Table 20) and reflect:

- Abattoir prices.
- The lack of demand for cull cows or poor-quality cattle in the formal sector.
- The lack of formal marketing logistics and infrastructure.
- The price of transport between custom production areas, population centres and the abattoirs.
- Supply and demand in each location.
- A need for quick cash by the farmer.

Table 20: Comparative live cattle prices on different islands (2015)

Island	Steer	Cull	Weaner	Freight to Vila	Freight on Island
Efate	40,000		18,000	2,000	2,000
Malo	20,000	8,000	16,000		
Epi	35,000	28,000	15,000	6,500	5,000
Santo	35,000	18,000	18,000	Own 6,000 Hired 10,000	
Tanna	100,000				
Malekula	30,000	15,000	18,000	10,000	

Source: Cole et al (2015)

6.3 Domestic consumption

Because of the large and perishable nature of beef as a consumption item, ceremonies provide an important distribution channels for beef. However, households sometimes demand beef outside of ceremonies, for which other informal localised channels have evolved. In some cases, a farmer might slaughter an animal at home, save sufficient for household consumption, and sell the surplus meat to the local community. In other cases, a household might slaughter an animal and then sell to others in the community as a business venture. This market channel is largely intermittent and *ad hoc*. The further a farmer has to travel to sell the surplus meat, the more it costs. With very little access to electricity there is minimal opportunity to store the meat. The price of meat doubles where electricity is available to store the product.

There is little differentiation in the quality of the meat sold in this market, with fillet and brisket mixed and sold at the same price. Consumers in this market have low purchasing power. The low prices reflect the same combination of factors in the custom market. Even in the informal sector, there is often a separation of production areas from population centres (East Malo production and West Malo population). This results in high transport costs into the domestic consumption market, which reduces return to farmers.

6.4 Rural butcheries and rural consumption

Rural butcheries are the beginning of more formalised logistics and retailing practices in the island beef industry. Rural butcheries require access to electricity (solar or generators) and become quite sophisticated where electricity is available 24 hours per day, such as Malekula or Tanna. Known rural butcheries in 2016 (which may not be complete, especially for Tanna) are listed in Table 21.

Table 21: Rural butcheries in Vanuatu

Establishment	Type	Location	Island
Port Olry Cooperative	Butchery	Port Olry	Santo
Jean Freddy Butchery	Butchery	Port Olry	Santo
Saratamata Butchery	Butchery*	Saratamata	Ambae
Eton Butchery	Butchery*	Eton	Efate
Navota Farm Butchery	Butchery*	Navota Farm	South Santo
Tafea Coop Butchery	Butchery	Lenakel	Tanna
Sola Butchery	Butchery	Sola	Vanualava.
Lakatoro Consumers Cooperative	Butchery	Lakatoro	Malekula
Norsup Butchery	Butchery	PRV Plantation	Malekula
Sama Sama Butchery	Butchery	Mele Road	Efate

Source: Cole et al (2015); * Denotes not operational at time of visit.

Rural butchers practice little product or price differentiation for meat from different animal classes or cuts, but prices are sometimes higher for beef with better presentation, storage and consistent availability. Rural killed meat is typically sold boned out and packed in plastic bags (sometimes not weighed). There is evidence that cheaper tray packed cuts are being imported from Vila and sold in the islands at a higher price than local meat suggesting better presentation pays dividends.

The skills required to identify the better cuts do not currently exist on the islands but are readily available at the abattoirs. Selection of the better cuts to be sold into the bungalow trade (rural tourist operations) could also transfer meat to higher value markets. There was no evidence of processing meat beyond boning out, except at Malekula (24-hour electricity). Equipment and skills to make mince and sausages would add value.

Fresh beef is by far the cheapest meat in rural communities and it is also much cheaper than tinned meat. This reflects the low returns farmers get in this market or the efficiency of a very short value-chain.

Table 22 identifies meat product prices that are traded in the rural and urban areas.

Table 22: Comparative meat prices in different markets (Vt/kg) 2015

	On Island	Santo	Vila	Rural Butcher
Loin		2400		
Rump steak		780	1095	400 to 700
Mince No 1		700	600	330 to 600
Beef bone in	150			
Beef bone out	250		420	300 to 500
Fresh fish	300	700	1400	
Beef tray pack	350		350	
Tin mackerel	455	450	376	
Tin tuna	550		1125	
Chicken wing	700	600	650	
Tin meat	1050	984	1125	
Pork	1333	1333		

Source: Cole et al (2015)

Table 23 shows typical weekly consumption patterns in rural areas. Even though fresh beef is by far the cheapest meat available (tin meat is four times as expensive) tinned meat is consumed four times as often.

Table 23: Meat consumption patterns in rural areas of Vanuatu

Meat type	Consumption frequency
Caught fish	Twice a week
Tin fish or meat	Twice a week
Caught pig	Once a week
Vegetable only	Once a week
Home chicken	Once a fortnight
Fresh beef	Once a fortnight

Source: Cole et al (2015)

In rural areas, fish, wild pigs and domestic chickens can be caught and consumed by households in many areas. There is very little actual trade in these commodities.

No custom function is complete without beef and pork and people expect to attend a function about once every fortnight. Slaughter in the rural areas is done by shooting the animal in the field and bleeding it on the ground. The carcass is quartered skin on and then transported to the butchery where it is skinned and cut into pieces. The opportunity for contamination and poor bleeding in this process is high. This represents a possible health risk to consumers which undermines access to improved markets and consumer loyalty though there was no indication of issues related to bush slaughter.

The lack of electricity, the high transport costs for live cattle and the small number of cattle in any location makes the cost and logistics of building an abattoir in rural areas untenable. Floating or mobile abattoirs have been considered (based on the Samoan model) but is regarded that additional high cost of converting a static facility and running it as a mobile unit is too high. Trucking or walking cattle to the abattoir may be possible on the larger islands, particularly Santo

At the rural butcheries, work benches, packaging, skilled technicians and of course refrigeration will improve quality, hygiene and presentation. The provision of these facilities will add cost/value.

There is no cold chain, so speed is of the essence in transferring the fresh meat to the end user. This does not meet basic standards of hygiene, but the system works for the farmers and customers. Even higher value outlets (bungalows) accept meat presented in this way. Extending the utilization period for up to three days is possible via slow continuous cooking techniques. Until there is a premium value for improved hygiene standards these systems are likely to continue.

6.5 The sale of weaner cattle

A significant proportion of small-holders sell weaners to larger farmers and estates. Small-holders sell weaners because they do not have sufficient quality pasture to raise cattle to steer weight in a reasonable time. They also have an ongoing demand for cash. About 15% of the feeder cattle of larger farmers are bought in as weaners from small-holders. The ADB Enterprise Challenge Fund funded Sarami beef on Santo to develop this trade which was extended into a barter system for improved genetic stock and fencing material.

Cattle purchase is via sight or, in some instances, scaled at the recipient farm and paid on weight. These cattle are often aggregated from the smallest farmers by middle men. There is an argument that this form of exchange is efficient as it combines the comparative advantage of small-holders in cow-calf production, with higher capacity of commercial farms to fatten cattle.

6.6 Formal urban markets

The sale of animals into the urban butchers offers the best cattle prices. The price to farmers in this market is VT270 as opposed to VT190 from the abattoirs, reflecting a general shortage of stock in the islands.

However, servicing this market can be demanding for most farmers. It requires farm infrastructure, access to information and connectivity, transport links, and meeting specifications on weight and age.

There were 28 butchers in Vanuatu in 2018, predominantly located in Port Vila, and another four in Luganville. Butchers travel to or send agents into the rural areas to identify and buy animals and then transport the animals for slaughter in commercial abattoirs in Vila or Santo. The abattoir facilities are adequate for the butcher market.

Most butchers in urban centres are well equipped and prepare and present beef products professionally. Three of these approved establishments (two in Port Vila and one on Santo) also export beef through the suitcase trade where up to 10 kg of beef is certified for export for returning international visitors from other Pacific islands.

Urban butchers (that were registered in 2016) are listed in Table 24.

Table 24: Registered urban butcheries (2016)

Establishment	Type	Location	Island
Meat Market	Butchery	Nambatu	Efate
Traverso Butchery	Butchery/Export Cutting Plant	Champagne Estate	Efate
South Pacific Meat Supplies	Butchery	Tebakor	Efate
Au Bon Marche Manples	Butchery	Manples	Efate
Calvo Butchery	Butchery	Port Vila Town	Efate
Wong Sze Shing Santo	Butchery	Luganville	Santo
Daming Butchery	Butchery	Luganville	Santo
Au Bon Marche Central	Butchery	Port Vila Town	Efate
Au Bon Marche Freswota	Butchery	Freswota	Efate
TMEL Butchery	Butchery/Export Cutting Plant	Tassiriki	Efate
Vanuatu Meat Products Co. Ltd	Butchery	Champagne Estate	Efate
Vanuatu Butchery	Butchery	Nambatu	Efate
Au Bon Marche Nambatu	Butchery	Nambatu	Efate
Paradise Meat Side River	Butchery/ Export Cutting Plant	Luganville Side River	Santo
Pechan Small-goods	Butchery	Nambatri	Efate
Paradise Meats-Market	Butchery	Luganville	Santo

Source: Compiled for this report

6.7 International markets

Vanuatu has developed a brand for top quality, flavoursome, grass-fed beef. Most of the export trade is vertically integrated with farmers owning or having interests in the abattoir and beyond.

Beef is an internationally traded commodity with prices determined by global supply and demand. Vanuatu is the only Pacific Island Country (PIC) that exports beef. One third of all the beef in Vanuatu is exported amounting to over 1,100 tonnes, mostly to Papua New Guinea, Japan, and the Solomon Islands (Cardno, 2014). Freight at AU$6,000 per refrigerated container adds about AU$0.43 per kilogram to the finished product. Vanuatu beef has duty free access to Japan (a saving of 37%) and duty-free entry into PACER and MSG countries. To date the import risk analysis is not completed for a number of these markets.

Because of the low returns from the abattoirs, farmers have sought and found alternative export markets for live cattle in the region. It is important to clarify if sufficient of the value-added component is transferred to the farmer or remains with the processor. If there is no equity (returns to the farmer), trade will decline. This is currently evident in the industry with falling numbers.

7 Industry inputs and support

7.1 Equipment supplies

Several suppliers in the urban and rural sectors that stock the necessary equipment to develop beef farming. Fencing materials are available in small rural stores on the outer islands but reflect the high transport cost of delivery to the islands. Equipment for water reticulation is carried in the main centres, but less evident on the islands. Professional yard systems used by larger farms are ordered from overseas, but cattle yards are typically made from local bush material as required.

Materials are sourced from Australia, Europe, Fiji, and China with a range of different prices mostly attributed to differences in quality.

7.2 Breeding stock

Small-holder stock is based on the local shorthorn-based crosses (indicated in Table 11) with widespread cross-breeding including in the small-holder sector.

Improved bulls can be sourced from existing large farmers. Artificial Insemination (AI) and even embryo transfer techniques (ET) are used by the larger farms. This results in a pool of improved breeding stock on the islands ranging in price from VT40,000 to VT120,000[7]per bull. The Vanuatu Agricultural Research and Technical Centre (VARTC) also have good quality bulls for sale at reduced cost (of around VT45,000).

The AI and ET techniques and the purchase of top-quality bulls are beyond the reach of most small-holders. Small farmers can access improved genetics by selling weaners for an improved bull[8], or free of charge when supplying forty weaners to a farm on Santo[9] However small-holders use bulls from within the existing herd which leads to in-breeding, or swap or buy from with neighbours and relatives.

7.3 Pastures and fertilisers

Pasture seeds and cultivation equipment is typically ordered from overseas. Local seeds, collected by small-holders, are sometimes available on the islands. Nurseries to supply vegetative planting material are rare. There are a number of suppliers of fertilizers in the urban centres.

It is difficult to estimate the total area of land used for cattle production. Cattle are often grazed under coconuts. Stocking rates are high, often above 2.5 cows/Ha. Anecdotal evidence suggests that the quality of pasture is declining, and many old estates have been abandoned. Pastures on many continuing estates are declining in productivity. One reason is the termination and non-renewal of large-scale pasture projects in the 1990s and the erosion of the agricultural extension service.

It was estimated (MacFarlane et al. 1986) that about 40% of the total pasture area in Vanuatu is carpet/T grass with some native legumes included. The estimated stocking rate on these pastures is 1.5 cows (LSU)/Ha[10]. Only 4-5% of pastures aree improved species including some legumes. Stocking densities on improved pastures are estimated at 2.5 cows/Ha (MacFarlane et al. 1986).

About 30% of the pastures are estimated to be buffalo and carpet grass established under old coconut plantations. Most of the small-holder sector graze cattle under coconut. A further 25% of pastures are established under heavily shaded coconut plantations. The heavy shading renders these pastures of little value for fattening for export markets but are suitable for maintaining breeding herds.

Daily gains vary enormously from 0.6 kg/day on improved pasture, to virtually zero on low quality or weed-infested pastures. Recent evidence suggests that with the completion of pasture programs over 20 years ago the quality of pasture has declined and weed infestation has increased.

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[7] Prices at 2015

[8] A scheme operated by a number of larger farmers on Efate and the outer islands.

[9] A scheme operated by Sarami plantation on Santo.

[10] 1 Cow is equivalent to 1 Livestock unit.

Most farms include the basic infrastructure of paddock systems and improved pasture. Access to water is minimal which is likely to impact significantly on production. Only 10% of farms include stockyards otherwise required for managing and loading cattle.

7.4 Extension

The Support for Agricultural Technology project (SATEC) was terminated soon after independence in 1980. The number and skills of extension officers was also impacted by the civil service strike in 1993 and a comprehensive restructuring exercise in 1997. Long production cycles in the beef industry mean it takes years for the full impact of these changes to be reflected in cattle and beef production. Reports indicate the sector has been in decline for over 10 years.

There has also been a decline in focus on the beef sector partly because of increased attention on small livestock (goats, pigs and chickens). The centralization of livestock officers away from rural areas may also have caused a skills gap in the islands and reduced support for farmers.

Very few farmers recorded being visited by livestock officers, though a few had attended training courses on pasture development (Cole et al, 2015). These training courses were not followed up with access to required seeds or equipment, to allow farmers to put into practice what they had learnt.

7.5 Commodity associations and industry bodies

Industry bodies in Vanuatu include the Vanuatu Agricultural Chamber (VAC) of the Vanuatu Chamber of Commerce and Industry (VCCI), the Meat Advisory Board (MAB) and the Livestock Industry Working Group (LIWG). Some of these groups are not fully functional or have overlapping roles. There are the beginnings of a functional bridge between government and the private sector through the National Trade Development Committee (NTDC) and the Joint Technical Working Groups (JTWC), currently represented by the beef industry by the Livestock Industry Working Group (LIWG). By linking farmers together through a formal membership structure, there is an opportunity to coordinate the industry bodies into one coherent structure to successfully advocate for farmer issues and form the bridge from farmers to the Government bodies.

The industry is separated by scale, market sector and geography, which breaks communication. There is no formal mechanism to circulate market intelligence or to provide links between farmers and the markets. Farmers do not feel they belong to a viable national industry, that their voice can be heard and that they are kept up to date with industry developments.

Mobile phone platforms are common technology on the islands of Vanuatu. Few farmers have access to computers. A mobile phone communication platform may provide opportunities to increase communication in the industry.

7.6 Trade agreements

Vanuatu has successfully negotiated duty free entry into the Japanese market, giving it a 37% price advantage over competitors. Beef also has duty-free entry into many regional markets through the Melanesian Spearhead Group trade agreements and the Pacific Agreement on Closer Economic Relations (PACER) negotiations.

7.7 Access to finance

The commercial banks, and even the Vanuatu Agricultural Development Bank (VADB), rarely lend to cattle farmers. Cattle farmers are risk averse and have also been reluctant to borrow funds. Difficulties in securing loans and the high costs of loans is a key constraint to industry development.

The agricultural bank identifies a recovery rate on agricultural loans as below 30%. Small farmers are regarded as high risk, particularly with intangible security. Interest rates of the VADB are lower than micro finance loans at between 14% and 18%, but even VADB rates are too high for investment in the beef industry which has low and slow returns. The bank was previously successful at lending to larger farms and was involved in financing many of developments in the 1980s.

The National Bank of Vanuatu (NBV) has a much higher recovery rate but the cost of servicing loans raises interest rates to 28%, which is prohibitive for cattle farmers (Cole et al, 2015). The bank places considerable emphasis on financial training, savings, and helping farmers to keep records. However, most of the micro financing packages are too small for beef farming which is capitally intensive with demands for land infrastructure and cattle. Without financing, value chain stakeholders will not be able to upgrade to compete in target markets. As a guide, it costs VT 9 million to establish a small farm if all inputs are paid for (Cole et al, 2015).

Wong Sze Shing in Santo operates an informal private credit facility. A household assessment is carried out before advancing funds or materials (especially for fencing). There is no formal security, but Mr Wong owns a butchery and is the owner of the third abattoir (on Santo) which provides a market outlet for the farmers' cattle. He therefore has an opportunity to recover debts. This is a long-term scheme with no interest charged.

Most small-holder farmers are likely to be risk averse, which is managed by diversifying agricultural (and other) activities. Small cattle farmers are unlikely to be able to service an (expensive) loan with a small and unproductive cattle herd. It would be instructive to analyse the size and productivity of a herd required to allow a family to derive their entire income from beef farming, and to service a loan. It is possibly for this reason that interventions should be aimed at the semi-commercial (around 35 head).

A lack of formal security of land tenure is a consistent obstacle. It is understood the Personal Property Securities Act allows the use of domestic goods as a debenture for a loan, which should allow small-holder farmers to access some funds.

Government continues to identify the need to strengthen small business skills (PMO, 2012) and the training of Government Officers in business planning is considered necessary.

The cost of borrowing is high at 18 to 28% even for larger farmers, which make the use of borrowed funds for beef with low and slow returns very difficult. The OPSP identifies opportunities to explore grant/loan funding mechanisms (PMO, 2012). Most developing countries have subsidised packages for small farmers as low as 2% interest. Investment appraisal analysis of Vanuatu beef farming systems is required to understand this constraint.

7.8 Training

The choice of agriculture as a career, including livestock, is not a popular choice for students or parents, who prefer their children to aim for white collar jobs

The Vanuatu Agriculture College (VAC) is a relatively modern well-equipped facility that can train up to 160 students per year. It teaches Certificate level courses from Levels 1 to 3 which are aimed at practical farming. The courses include 3-month sandwich attachments to local farms.

Negotiations are currently under way with the Fiji National University to develop a level 4 certificate or a National Diploma in Agriculture. Degree level courses are available either at the University of the South Pacific or the University of New Caledonia. Students in these courses are unlikely to envisage practical farming at a scale as a career objective.

The college has its own teaching plots but has lost access to its grazing area, which has been returned to the Department of Livestock. There is supposed to be a memorandum of understanding to allow the college use of this facility, but it is currently not working.

It was reported by VAC that most students have access to custom land. Some have requested funding (VT100,000) at the end of their course to develop crops on their own farms.

7.9 Biosecurity

Vanuatu has two senior veterinary officers and a principal veterinary officer, and eight meat inspectors that supervise three cattle abattoirs and one poultry abattoir. Meat inspectors are competent and approved through the Assure Quality scheme in New Zealand. However, the Department of Biosecurity is under staffed by about 30%.

Approximately one-third of Vanuatu beef is exported, and the disease status and abattoir certification are important to the growth and development of the industry. Vanuatu has established export quality abattoirs and the testing protocols to maintain export markets within a number of sophisticated first world countries including Australia, New Zealand, and Japan. There are efforts underway to establish markets in Hong Kong or South Korea that meet OIE standards. Confirmation of the disease-free status is achieved and maintained by regular ongoing testing. A recent OIE inspection visit indicated that more testing than currently practiced is required to meet OIE standards, including residue testing.

There are concerns that Vanuatu is not conducting sufficient testing to meet the criteria of the existing markets. While Vanuatu currently has a disease-free status, and while existing markets are lax in enforcing standards, this will not be a problem, but it is will be very difficult and costly to re-certify this disease-free status if it is lost.

Regular testing for beef diseases is not expensive and must be continued, to meet the full range of standards. The Pacific Horticultural and Agricultural Market Access (PHAMA) project is assisting the Biosecurity department in this regard. There is talk of a testing laboratory to be shared with the entire agriculture and livestock department. The laboratory will be able to conduct regular microbiological testing but will not be able to conduct the required tests for Bovine Spongiform Encephalitis (BSE), Foot and Mouth Disease (FMD) or residue testing required by the OIE that requires overseas facilities.

The Biosecurity department would be required to establish and monitor the protocols required by rural abattoirs and butcheries if meat from these sources were to enter more formal markets. The cost benefit of transporting lower volumes of meat as opposed to live cattle (particularly if the prime cuts are shipped) is very important.

7.10 Research

Vanuatu Agricultural Research and Technical Centre (VARTC) on Santo is the research hub for a range of crops and for livestock. Cattle research has been neglected in recent years. The breeding program virtually collapsed as breeding records were lost. The price of breeding bulls for sale was reduced from VT85,000 to VT45,000 to sell to the industry. The recent appointment of a livestock officer and a proposed research council should re-focus the cattle research section. Forage trials and grazing trials (in pastures and under coconuts) are being conducted, together with the ACIAR project focused on Santo.

7.11 Transport

The centralized abattoirs on Efate and Santo require a continuous flow of cattle both from the main islands and the other production centres on Malo, Malakula, and Epi. The Cardno report (Cardno, 2014) indicates that whilst transport is not a problem for larger farmers who have better access roads and their own trucks, transport is a major impediment to small-holder participation in formal beef markets (Bazeley et al, 2006). The OPSP includes the need to improve structures for transport and sale of livestock. This is included as a budget in the follow-on report (MALFFB Medium Term Strategic Plans), which includes civil works at 7% of the total VT13.9 billion budget across sectors, although only VT52 million is allocated for livestock specifically (MALFFB, 2014, pp.79), or just 4% of the livestock budget.

A recent intervention through the Small-holder Cattle Purchase Program (SCPP) (DoI, 2013) aimed to address transport constraints by subsidizing shipping (100% subsidy) to encourage farmers to sell cattle on formal markets. Whilst successful in shipping cattle, the intervention encountered other issues along the value chain including poor quality stock, lack of infrastructure, and poor husbandry (DoLQ, & DoI, 2012). An earlier proposal in 2011 also recommended subsidizing transport.

Most recently this intervention has been used to relocate cattle to Tana and other islands where beef cattle have virtually disappeared. As a result of the lack of cattle on these islands the price the markets are prepared to pay for beef is up to twice the national average.

Transport issues can be extended to cover a lack of on-farm infrastructure, which is the first link in the transport system. Only 10% of farms had stockyards (Cardno, 2014), which exacerbates problems faced by farmers in participating in formal markets. Road links are poor and long in many areas, making it very expensive to handle small numbers of cattle. The ACIAR project does not tackle the transport costs directly but aims to improve output from small-holder farmers and link this to the larger farmers who have well developed transport links and logistics (Quigley et al, 2014).

7.12 Health and disease surveillance

One of the key advantages of beef production in Vanuatu and the driver behind its claim for organic certification is the virtual disease-free status of the islands (Cardno, 2014). Disease control is under the remit of veterinarians at Bio Security (under MALFFB). There is a requirement of the authorities to maintain surveillance and regularly reconfirm Vanuatu's disease-free status for FMD, BSE and Rinderpest (Cardno, 2014) to keep key markets open. This is a significant and ongoing expense though the risk of getting BSE in Vanuatu has been described as negligible in a recent report (FSANZ, 2012).

The Bovine Venereal Disease (BVD) Vaccine program was carried out by officers in the Livestock Department and provided them with the resources to visit farmers in the sector (Cardno, 2014). However,

this was a one-off program and further medication programs are not currently included in the budget proposals of the OPSP Medium Term Strategic Plans. However, the MALFFB Funding proposal supports a VT84 million expenditure for the construction of testing labs for analysis (MALFFB, 2014, pp. 77).

The use of medication, especially for parasite control (Quigley et al, 2014), must be better understood if organic status is to be confirmed and retained and new more stringent markets are to be opened such as the EU with its requirements for residue testing. Most small-holders are probably not willing to pay for these inputs. It is not yet clear what treatment programs larger farmers that buy weaners from small-holder farmers use before introducing new stock into their units. However, there is a move away from organic certification to a "Grass fed" beef brand which attracts the same market premium[11].

7.13 Pasture and weed control

The OPSP identifies a key requirement for increased productivity is improved pastures. Cardno highlights weed infestation, especially on Santo as a key constraint (Cardno, 2014). Overstocking is identified as the main reason for weed infestation and poor pastures. The Cardno report does not envisage direct intervention at farm level but proposes training and extension to improve pastures. Duty free access to pasture seeds is considered (MALFFB, 2014, pp.47), but this is a very small component of the overall cost of establishing new pastures that includes clearing, cultivating and weed control.

The National Livestock Framework identifies the need for low cost pasture systems (DoL, 2015, pp. 11 & 42), but it is unlikely the small-holder farmers identified as the target group for this report will invest funds in pasture improvement.

7.14 Data systems, market data, and sector organisations

It is accepted there is a lack of base line data from which to plan interventions. This section considers another aspect of data collection namely the flow of information within the industry that will allow all stakeholders to make improved decisions. Here too it has been identified that a lack of data is a key constraint (price, standards, market links).

Larger farmers do have access to data and are often the price setters in the industry. The abattoirs publish price schedules which typically change once or twice a year at most (Cardno, 2014). Larger farmers also scale cattle before sale. There is no such certainty in the informal market sector.

It is unlikely a new Agricultural Census currently due in 2017 will now take place although a mini census was carried out in 2016.

The Small-holder Cattle Purchase Scheme also indicates the need for better communication and transparency in the small-holder sector of the industry and advocates for Public Private Partnerships (PPP) to achieve this (DoL, & DoI, 2012).

Cardno identifies a lack of an efficient marketing and pricing process for selling cattle for finishing (Cardno, 2014). A major thrust of the ACIAR project proposal is to collect empirical data from its model farm systems and identify the factors that constrain market penetration by small-holder farmers (Quigley et al 2014). The Overarching Productive Sector Policy (OPSP) plans to improve market intelligence and links

[11] Pers. Comm. Paul Smith Vanuatu Abattoirs Ltd, 2018.

through existing Government Agencies (PMO, 2012). However, its market interventions appear to be focused on infrastructure and redistribution projects rather than data collection.

Most reports focus on traditional paper/radio-based market information dissemination systems. The use of existing systems such as rural Co-ops is also suggested (DoL, 2015). Cardno suggest text messaging might be viable (Cardno, 2014). However, data is power, and any system will not only require transparency but will also need to be housed and operated in a benign environment. Whilst Government wants to include the private sector in the decision making to deregulate the sector and to set standards it is not yet clear if it plans to or should relinquish more control. The Medium Term Strategic Plan (MTSP) budgets considerable strengthening of the functions of a number of Government Departments. Already there are three apparent bodies in the beef sector as well as a number of regional bodies, [LIWG, MAB, Vanuatu Livestock Board (VLB), and Meat and Livestock Corporation (MLC)]. The country and sector are too small to support conflicting bodies.

The MTSP summarises the issue in the following words:

> *"In recent times, it has become apparent that the question may not be about 'public' or 'private' service delivery but how best the public and the private sector can work together to deliver basic services to the public" (MALFFB, 2014, pp 10).*

The Cardno report identifies the end of financial support of the earlier interventions in the 1980s and 1990's that were successful in establishing small-holder production as the beginning in the decline in the industry (Cardno, 2014, pp. v). The OPSP states that the public sector has not recovered from disruption in the Civil Service in 1990 which caused the virtual collapse of agricultural extension, information and marketing-support services (Bazeley et al, 2006).

8 Government policy

8.1 Agricultural policy

The Priorities Action Agenda of the OPSP identifies the productive sector as the engine for economic growth and employment. The policy identifies seven priority areas of; market access, product quality, productivity, value adding, environmental sustainability, capacity building and policy development (PMO, 2012).

The "productive sector" includes copra, kava, cocoa, cattle, food crops, small livestock, and marine resources. This sector is calculated to have only grown at 1.6% from 1999 to 2009 against a national average of 3.3%. Revitalisation of this sector is a key policy for Vanuatu. The OPSP as well as addressing the needs of food security aims to develop pathways for the commercialisation of small-holder farming (NABCCDRR, 2012).

Whilst the National Livestock Framework (NLF) identifies the relevance of pigs, goats, chickens and cattle. (MALFFB, 2014, pp. 24) The importance of the cattle sector within livestock is identified in the budgets attached to the MALFFB Medium term strategic plans where 52% of the total livestock allocation is provides for cattle projects (MALFFB, 2014, pp. 53).

The government recognizes that outputs from the productive sector are largely in the private sector and therefore support must come in the form of creating a conducive policy environment for development including macro, tax, subsidies and trade policy (NABCCDRR, 2012).

The tax regime for imports and exports is set by the Ministry of Finance. Agricultural products are largely exempt from duty, but all farmers pay VAT, a cost that cannot be reclaimed by unregistered small-holders.

8.2 Livestock and beef plans

Under the umbrella of the OPSP lie more specific livestock policies. This includes the Vanuatu National Livestock Policy: 2015-2030, which is accompanied by the National Livestock Sector Policy Action Plan; 2015-2030. It has a number of themes and strategies.

An important theme for this report is "Small-holder Livestock Production", which aims to make small-holder livestock operations very productive and meet the livelihood needs of farmers and to make up half of the livestock industry. Strategies include:

- Greater emphasis is placed on engaging and encouraging small-holder farmers to participate in livestock farming;
- A cattle restocking program is vital to increase cattle numbers in the rural areas of Vanuatu
- Recognise that tax holiday incentives, including VAT and duty exemptions to the farming community will promote growth in the livestock sector;
- Recognize that a comprehensive livestock legislation will help improve the management of animal production, animal health and welfare in Vanuatu;
- Acknowledge that livestock farmers need more market outlets in the provinces where farmers will sell;
- Integrated farming systems and product diversification are promoted to all farmers to increase productivity and to maintain environmental integrity and resilience;
- Other livestock species are promoted and encouraged to grow their numbers;
- Certain locations or localities are suitable for only certain breeds or species of animals;
- Ensure dual purpose breeds are actively encouraged; and
- Vanuatu will strategically embark on promoting subsistence farming to graduate to commercial farming.

In addition to "Small-holder Livestock Production", other themes in the policy and action plan are:

- Commercial livestock production;
- Livestock industries and marketing;
- Animal health, animal welfare; and public health;
- Land use;
- Feed, water, and nutrition;
- Finance and planning;
- Institutional setup and governance;
- Research;
- Infrastructure and technology;
- Women and livestock development;
- Investment; and
- Monitoring and evaluation.

The National Livestock Policy states the aims to double the total number of cattle within the next five years to 500,000 head by 2025, which is an ambitious target given that cattle numbers may only be a quarter of that recorded in the 2016 Mini census (VNSO, 2016) and indications are that cattle numbers are in decline.

While not directly stated in those plans, they led to a major decree that bans the slaughter of productive breeding females. This is designed to arrest the decline of the breeding herd, partly because of the large number of weaners being sold into the veal market in Port Vila. The ban appears to be being implemented at least for the stock that are killed at the three large formal abattoirs. Households that want to sell females notionally require a certificate form livestock officers to allow slaughter.

8.3 Beef specific policies and plans

While these livestock policies have a strong emphasis on beef, the industry was targeted more directly especially in preparation for EDF11 and NZMFAT projects in the report "Vanuatu Beef Cattle: The industry's development plan" (2017).

Those Objectives and Strategies for each profitability driver are as follows (2017, pp. 22-24):

Strategy 1. Industry members (especially cattle farmers) must become more effective at accessing markets.

> Objective 1. By 2020, to have assisted farmers to improve their knowledge in identifying best markets for their cattle
>
> Objective 2. By 2020, to have assisted farmers to increase their knowledge of market requirements for cattle

Strategy 2. Farmers need to improve the quantity and quality of cattle produced

> Objective 3. By 2020, farmers must have shown improved pasture management and especially Weed control
>
> Objective 4. By 2020, have increased national cattle numbers to 93,000 through improved fertility through
>
> Objective 5. By 2020, have increased herd productivity through improved genetics
>
> Objective 6. By 2020, to have improved the animal health and disease management of the national herd through

Strategy 3. Improvement need to be made to infrastructure and especially water supply

> Objective 6. By 2020, to have increased the water supply to selected locations on Santo

Strategy 4. Farmers need to be able to become more knowledgeable to effectively access the finance available to them:

> Objective 7. By 2020, there needs to be an increase in farmers' knowledge and skills around accessing finance when needed

Strategy 5. There needs to be a concerted effort to build the skills and knowledge by farmers to operate their farms profitably.

> Objective 8. By 2020, to have improved the Farm technical management knowledge and skills of farmers through:
>
> Objective 9. By 2020, to have likewise improved the Farm Business Management knowledge and skills of farmers

Other policy measures that have been implemented in recent years include the Small-holder Cattle Purchase Scheme and the Bovine Venereal Vaccination program. These are effective but are hampered by and are not able to resolve other issues in the value chain. The cattle purchase shipping scheme identified a lack of awareness by small-holder farmers about the cattle quality standards required to enter the more formal markets. The report stated low quality was caused by poor husbandry, poor pastures, lack of communication and transparency, all exacerbated by a lack of financing as constraints to their work (DoL, & DoI, 2012). That it, the schemes were not implemented in a holistic way.

Similarly, the BVD program is reported to have had an impact on fertility but again it was a short-term intervention aimed at a specific problem cut short by finance constraints and lack of a clear cost benefit (Cardno, 2014).

In 2016, cattle were transferred from larger commercial farms particularly down to the islands surrounding Tana where the price for beef is twice the national average. The Tana group was severely impacted in the 2015 cyclone, but the demand for beef and strong tourism has caused the decline of stock numbers in this area. It is not clear if the transfer of stock is simply supplying domestic demand or increasing the reproductive capacity of the herd.

Abattoirs are licensed by government under the control of the MTTICNVB. Regulatory control is exercised through testing and application of standards of hygiene and for export by the Vanuatu Meat Inspection Service, Department of Biosecurity, MALFFB.

To retain as much of the value-added dollar in Vanuatu, a tax on the export of live cattle has been suggested by the government. Previously, exports have been facilitated to Indonesia and the Solomon Islands. The shipment of live cattle is very expensive so the premium price for these animals must be significant.

8.4 Acts that impact the livestock sector

The Acts of Parliament that affect the beef industry is listed in Table 25.

Table 25: List of Acts affecting the Vanuatu beef industry

Legislation	Description
Vanuatu Chamber of Agriculture Act No.19 of 2010.	To allow for the establishment of a body corporate to function as: • To represent farmers in dealings with persons or organisations in the public or private sector whether nationally or internationally; • To collect and disseminate information on all matters of interest to farmers and Producers Organisations; • To provide services, including delivery of goods to farmers and Producers Organisations; • To promote agricultural activity and agro-industry in each Local Government Region • To provide information and advice the Government and other public authorities on matters affecting agricultural activity; and • To assist potential investors in agricultural activity and agro-industry. **Comments:** The VCA never got off the ground because the government did not have the necessary funds to support the VCA.
The Meat Industry Act No.5 of 1991. Regulations introduced 2012	An Act to make provisions for the regulation and control of the meat processing industry and for matters connected therewith.
Animal Importation and Quarantine Act 7 of 1988 Act 45 of 1989 Act 14 of 1997	An Act to make provisions for the regulation and control of the importation of animals, animal products and biological products into Vanuatu, and for matters connected therewith.
Animal Disease (Control) Act 29 of 1992	An Act to make provisions for the control of animal disease in Vanuatu and for matters connected therewith.
Cattle (Export) JR 14 of 1977 Act 6 of 1986	To restrict the export of cattle from Vanuatu.
Cattle (Slaughter, Spaying and Castration) JR 30 of 1979	To regulate the slaughter, spaying and castration of cattle.
Cattle Trespass JR 3 of 1941	To provide penalties for trespass by cattle.
Agricultural Fees JR 40 of 1973 JR 37 of 1977 JR 3 of 1986 Act 6 of 2002	To establish fees and charges for services relating to agriculture and livestock.
The Livestock Management Act (2018)	To strengthen management of meat inspection and veterinary officers.

9 Vanuatu development assistance

9.1 European Development Fund 11

The European Union (EU) through the European Development Fund (EDF11) is supporting industry development for copra, fruits and vegetables, and beef, planned from 2018 to 2023 with funding of EUR41 million. The program for beef is still being finalised but will cover a wide range of activities including breeding, infrastructure and farm development. The project aims to support government policy to increase beef production in formal abattoirs to

The channel for the 11th EDF funding is the National Indicative Programme (NIP) for Vanuatu and covers the period 2014-2020. This was developed based on EU's response to Vanuatu's National Development Strategy (NDS). The Government of Vanuatu has developed several strategies to qualify for this package.

9.2 ACIAR

This project aims to increase the productivity and marketing options of small-holder cattle farmers in Vanuatu through social, business and production participatory research, demonstration and training activities. Beef cattle turnoff into formal markets has declined in recent years, and butchers and abattoirs cannot meet increasing demand for beef.

The Government has identified increased small-holder cattle productivity, linkages with the commercial cattle sector and income from cattle sales as priority strategies to increase national beef production, meet expanding market opportunities, and improve the livelihoods of ni-Vanuatu small-holder households. Implementing these strategies will require understanding the livelihoods objectives of small-holder cattle producing households and cattle production systems.

9.3 NZ MFAT

New Zealand recognises agriculture is a core part of Vanuatu's economy and we are working to help drive its ability to contribute to Vanuatu's economic growth. Assistance includes working to support farmers to transition from subsistence agriculture to commercialised, market-led agricultural production, which includes a focus on increasing the quantity of fresh local produce into resorts and hotels.

New Zealand is working to strengthen agricultural value-chains with a focus on beef, improve market access through biosecurity and food safety systems, build resilience, and tackle food security and nutritional challenges.

New Zealand has provided NZD $5 million over five years from 2016 to 2020 to support the beef sector and agri-food activity. The first phase of the project delivered beef livestock survey and industry plan, and support for Vanuatu's agri-tourism strategy, farming infrastructure and policy support. This support is targeted at farmers with 50 to 150 head, possibly the frontier of intensification, to assist them become more commercially viable.

9.4 The Pacific Community

The Secretariat of the Pacific Community offers a paravet training course transferring basic husbandry skills to farmers and agriculture extension officers, including in Vanuatu.

Australian Aid

Australian aid to Vanuatu focuses on cyclone relief and social support. The Australia Vanuatu aid partnership arrangement 2016 to 2019 established a shared vision of the Vanuatu and Australian governments to ensure development cooperation contributes as effectively and efficiently as possible to sustained and inclusive economic growth and reduced poverty in Vanuatu.

The Partnership Arrangement sets out four strategic objectives:

- building resilient infrastructure and an environment for economic opportunity;

- improving early education and essential health services;
- improving community safety and resilience; and
- supporting cyclone recovery and reconstruction.

Australia's aid and economic diplomacy strengthens the conditions for sustainable and inclusive economic growth and stability in Vanuatu and reduces poverty. Investing in women's economic empowerment and leadership, disability inclusion and the elimination of violence against women are priorities in our program.

Australia contributes to the Technical vocational education and training program (TVET), which is now under the jurisdiction of the (Vanuatu) Ministry of Education and Training as the Vanuatu Skills Program (VSP) across all sectors of the economyOther bilateral partners (France, USA, JICA)

The aim of other bilateral aid, as with Australia, from the countries identified above to Vanuatu is cyclone relief and humanitarian assistance and capital infrastructure.

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