

Dairy Sector in Uganda

15th November 2018

1. Descriptives

Table 1: Basic Descriptives of Value Chain

	mean	sd
Farmers (HH Head)		
Number of Observations	1,101	
Male	77%	
Some Education	66.5%	
Completed Primary	17.9%	
At Least 10 Years Experience	80%	
Traders		
Number of Observations	541	
Male	99%	
Some Education	9%	
Completed Primary	21%	
Years Experience in Dairy	3.1	3.71
MCCs		
Number of Observations	55	
Male	85%	
Some Education	100%	
Completed Primary	60%	
MCC Manager	76%	
Years Experience in Dairy	3.6	4.5

2. Farmers

Table 2: Dairy Farmers

	count	mean	sd
Household Members	1,101	7.3	3.3
HH Head Age	983	49	13.6
HH Head Married	999	87.7%	
HH Head Anglican			
HH Head Pentecostal			
Distance of homestead to nearest...			
...tarmac road	1,101	101.3	274.9
... murram road	1,101	11.1	94.7
...milk collection center	1,101	123.7	314.9
... milk shop	1,101	217.9	406.0
... neighbour	1,101	1.3	30.1
...market	1,101	22.4	126.1
...trading center	1,101	11.1	89.8
Distance of homestead to house of village chairman	1,101	18.0	126.5
Good Cellular reception	1,039	45.5%	
<i>Main Income</i>			
Dairy	1,101	66.7%	
Crops	1,101	25.4%	
<i>Household</i>			
Rooms	1,100	2.9	1.3
Solar Power	1,095	80%	
Iron Roof	1,100	62%	
<i>Land</i>			
Grazing Area	1,057	41.2	54.2
Crop Area	1,091	5.8	12.1
<i>Cattle</i>			
Local cows owned	1,096	8.5	14.4
Price of local cow	685	1,132,313	273,819
Local heifers	1,087	5.0	8.0
Price of local heifer	685	793,591	214,111
Local calves owned	1,091	4.1	5.9
Price of a local calf	699	305,042	108,091
Improved cows	1,098	5.7	8.6
Price of improved cow	724	1,526,423	427,297
Improved heifers	1,096	3.3	5.9
Price of improved heifer	545	1,030,239	341,234
Improved calves	1,094	3.3	5.8
Price of improved calf	589	425,586	149,683
Total herd size (cows+heifers+calves) 1 year ago?	1,046	30.7	40.7
How many of these were improved?	1,013	9.4	19.8

Table 3: Dairy Farmers

	count	mean	sd
Dry Season			
Cows Milked	1,086	4.4	6.3
Cows Older than 8 Years	749	1.6	2.7
Liters Produced	787	2.5	2.2
Exotics Milked	1,089	2.9	5.4
Exotics Older than 8 Years	570	0.9	2.3
Liters Produced	580	4.7	4.1
Price per Liter	574	888.8	222.2
Lowest Price	964	821.1	217.2
Highest Price	963	970.6	218.5
Amount Sold Per Day	975	9.5	11.3
Own Consumption Per Day	983	3.1	1.5
Amount Given Out Per Day	969	0.6	1.2
Amount Feed Calves Per Day	481	0.8	1.2
Amount Processed Per Day	933	1.3	1.7
Rainy Season			
Cows Milked	1,091	4.3	6.4
Cows Older than 8 Years	788	1.3	2.5
Liters Produced	823	3.4	2.5
Exotics Milked	1,089	3.1	5.1
Exotics Older than 8 Years	603	0.9	2.5
Liters Produced	615	6.4	5.2
Price per Liter	613	690.9	236.7
Lowest Price	1,045	669.6	238.2
Highest Price	1,046	811.2	235.9
Amount Sold Per Day	1,042	14.2	15.8
Own Consumption Per Day	1,043	3.4	1.5
Amount Given Out Per Day	1,024	0.8	1.3
Amount Feed Calves Per Day	507	0.9	1.3
Amount Processed Per Day	995	1.7	1.8

Table 4: Dairy Farmers

	count	mean	sd
Sales			
In last 7 days sold milk to...			
...Neighbor/direct retail	1,101	35.7%	
...Trader that sells as retail	1,101	9.2%	
...Trader that sells to MCC	1,101	23.6%	
...Trader that sells to milk shop	1,101	3.2%	
...Transporter that retails	1,101	1%	
...Transporter that supplies MCC	1,101	8.6%	
...Transporter that supplies milk shop	1,101	1.5%	
...Direct to MCC	1,101	9.8%	
...Direct to milk shop	1,101	2.4%	
Sales to Neighbors...			
Number Transactions in Last 7 days	384	5.8	2.5
Number of Buyers	371	3.1	2.5
Price Received	390	906.7	205.7
Liters Sold	385	33.7	147.9
HH Head Decided	382	85.1%	
HH Head Sold	360	80.3%	
Cash Payment	394	98.7%	
Payment Daily	393	34.3%	
Payment Monthly	393	30.8%	
No Agreement	389	53%	
Years Selling to this customer	383	2.9	3.8
Never Rejected	74.5%		
Pay Premium	391	9.4%	
Assist With..			
Training	87	11.5%	
Inputs	87	79%	
Credit	87	15%	
Milk boiled	393	11.1%	
Sales to Traders to Retail...			
Number Transactions in Last 7 days	99	5.9	2.1
Number of Buyers	99	1.9	2.8
Price Received	100	782	215.6
Liters Sold	100	76.3	226.8
HH Head Decided	99	87.9%	
HH Head Sold	94	87%	
Cash Payment	100	98%	
Payment Daily	97	5%	
Payment Weekly	97	72.2%	
No Agreement	100	58%	
Years Selling to this customer	99	2.7	2.7
Never Rejected	89	77.5%	
Pay Premium	100	7%	
Assist With..			
Training	10	20%	
Inputs	10	30%	
Credit	10	70%	
Uses Boda Boda	101	61.4%	
Jerry Can container	101	88.1	
Farmer Paid Transport	101	5.9%	
Amt paid	6	15,550	22,804

Table 5: Dairy Farmers

	count	mean	sd
Sales			
Sales to Traders to MCC...			
Number Transactions in Last 7 days	260	6.3	1.8
Number of Buyers	255	1.6	1.9
Freq of Payment?	240	2.	1.9
Liters Sold	258	60.8	168.7
HH Head Decided	254	94.9%	
HH Head Sold	245	91.8%	
Cash Payment	259	99.2%	
Payment Daily	255	1.9%	
Payment Weekly	255	85.9%	
No Agreement	259	47.5%	
Years Selling to this customer	253	2.5	2.4
Never Rejected	237	72.1%	
Pay Premium	259	7.3%	
Assist With..			
Training	24	12.5%	
Inputs	24	37.5%	
Credit	24	58.3%	
Uses Boda Boda	260	92.7%	
Jerry Can container	260	85	
Farmer Paid Transport	259	5.8%	
Amt paid	14	5,977	2,642
Sales to Traders to Milk Shops...			
Number Transactions in Last 7 days	36	6.4	1.7
Number of Buyers	36	1.6	0.9
Price	36	788.9	189.4
Liters Sold	36	71.6	200.5
HH Head Decided	33	93.9%	
HH Head Sold	33	87.9%	
Cash Payment	36	100%	
Payment Daily	36	5.6%	
Payment Weekly	36	63.9%	
No Agreement	36	36.1%	
Years Selling to this customer	34	3.3	5.8
Never Rejected	27	59.2%	
Pay Premium	36	8.3%	
Assist With..			
Training	2	0%	
Inputs	2	0%	
Credit	2	0%	
Uses Boda Boda	36	88.9%	
Jerry Can container	36	83.3%	
Farmer Paid Transport	35	5.7%	
Amt paid	1	8,000	

Table 6: Dairy Farmers

	count	mean	sd
Sales			
Sales to Transport Who Sells to MCCs...			
Number Transactions in Last 7 days	95	6.7	1.0
Number of Buyers	93	1.4	2.2
Price	94	808.0	192.8
Liters Sold	92	66.0	199.4
HH Head Decided	93	98.9%	
HH Head Sold	93	94.3%	
Cash Payment	95	98.9%	
Payment Daily	94	0%	
Payment Weekly	94	80.8%	
No Agreement	95	44.2%	
Years Selling to this customer	95	2.6	2.8
Never Rejected	93	67.7%	
Pay Premium	94	8.5%	
Assist With..			
Training	14	14.3%	
Inputs	14	21.4%	
Credit	14	21.4%	
Uses Boda Boda	94	81.9%	
Jerry Can container	91	78.0%	
Estimated Transport Cost	79	2,090	1515
Milk Tested Lactometer	91	90%	
Milk tested Alcohol	87	83.7%	
Unable to Sell Milk in Last 30 days	1,091	23.3%	
Number of Times Unable To Sell	247	5.6	6.2
No buyer to Sell to	253	50.2%	
Food Safety/Animal Welfare			
Cows Milked Outside	1,100	84.7%	
Milking Area Cleaned At Least Weekly	1,100	38.6%	
Milking Area Never Cleaned	1,100	31%	
Cleaned By Sweeping	1,100	26%	
Cleaned by Moving Animals	1,100	26.5%	
Udders Cleaned Before Milking	1,096	37%	
Udders Cleaned with Cold Water	406	58%	
Milking Cream Used	1,092	13.7%	
No Treat Udders After Milking	1,100	81%	
Let Cow Stand Before Releasing After Milking	1,085	57.5%	
Milk Storage Containers	1,100		
Glass		1.7%	
Plastic Jar		36.3%	
Plastic Bucket		52%	
Steel Bucket		14.3%	
Jerry Can		20.7%	
Steel Can		5.6%	
Farmer Washes Hands with Soap Before Milking	1,100	60.1%	
Wash Containers with Soap	1,100	88.8%	94.9%
Tick Problem (Scale 1-5)	1,100	4.1	1.3
East Coast Fever Problem (Scale 1-5)	1,100	3.0	1.5
Spray Cow with Acaricides	1,100	96%	
Free Range Feeding	1,100	78.7%	
Often or Always Problem Getting Water for Cattle	1,100	38.0%	

Table 7: Dairy Farmers

	count	mean	sd
Animal Health			
Vaccinated Cattle	1,094	90.5%	
Vaccinated By Govt	968	60.6%	
Distance to Vet Services (KM)	953	17.5	15.5
Distance to Vet Drugshop (KM)	1,042	8.4	7.3
Used Vet services in last 12 Months	1,095	92.5%	
How Often	891	3.7	3.7
Cost of Vet Services in last 12 months	888	534,345	681,068
Receive training on animal health	1,086	22%	
Training from Govt Extension Worker	226	56.2%	
Labor			
Who in family Provides Labor for Cows			
Adult Male	1,100	95.6%	
Adult Female	1,100	21%	
Child Male	1,100	7.5%	
Child Female	1,100	2.8%	
Hours Spent By Adult Male...			
Milking in AM	1,100	95.6%	
Milking in PM	1,032	1.1	1.7
Marketing Milk	1,035	0.5	0.8
Prep Feed and Feeding	1,033	6.8	6.4
Cleaning Shade and Utensils	1,007	0.6	1.2
Hours Spent By Adult Female...			
Milking in AM	230	0.1	0.6
Milking in PM	230	0.05	0.2
Marketing Milk	229	0.3	0.8
Prep Feed and Feeding	229	1.0	2.2
Cleaning Shade and Utensils	228	0.7	0.6
Hours Spent By Male Child...			
Milking in AM	83	1.1	4.9
Milking in PM	83	0.4	0.7
Marketing Milk	82	0.3	0.7
Prep Feed and Feeding	78	3.2	3.8
Cleaning Shade and Utensils	82	0.7	0.8
Hours Spent By Female Child...			
Milking in AM	30	0.2	0.6
Milking in PM	31	0.03	0.1
Marketing Milk	29	0.2	0.6
Prep Feed and Feeding	30	0.7	2.3
Cleaning Shade and Utensils	31	0.8	0.8
Hired Labor	1,097	51.5%	
Hours Per Day	561	8.8	3.4
Cost Per Day	563	3025.9	1784.4

Table 8: Dairy Farmers

	count	mean	sd
Reason for Keeping Cattle			
Wealth	1,100	88.1%	
Prestige	1,100	29.8%	
To produce milk	1,100	86.8%	
Produce meat	1,100	15.6% Bride price	1,100 6.6%
Had Cows 10 Years Ago	1,086	80%	
Years Dairy Farming	218	4.4	5.5
Exotic Cows Then	838	2.0	6.1
Local Cows Then	796	25.9	21.3
Average Liters Produced per Day Then	847	18.3	24.3
Liters Sold per Day Then	922	9.7	28.0
Livestock Assets			
Milking Shed	1,085	12.7%	
Cattle Barn	1,091	12.0%	
Feeding Boxes	1,091	54.4%	
Steel Cans	1,097	10.1%	
Num Steel Cans	111	1.6	0.9
Steel buckets	1,089	23.6%	
Num Steel Buckets	257	1.8	1.0
Jerrycans	1,098	64.6%	
Num jerrycans	708	2.2	1.4
Plastic Buckets	1,098	80.7%	
Num Plastic Buckets	887	1.7	0.9
Mobile Phones	1,097	1.9	1.2
Motorbkes	1,100	0.4	0.5
Bikes	1,100	0.8	0.5
Cars	1,100	0.04	0.3
Radios	1,099	0.8	0.6
Water Pumps	1,100	0.06	0.2
Pangas	1,096	1.8	1.1
Wheelbarrows	1,100	0.3	0.5
Sickles	1,099	0.5	0.7
Hay Forks	1,100	0.2	0.5
Tarpaulins	1,100	0.9	1.0
Cutting Machines	1,100	0.03	0.2
Hosepipes	1,100	0.08	0.3
Sprayers	1,100	1.0	0.5

Table 9: Dairy Farmers

	count	mean	sd
Cooperative			
Member of Coop	1,083	28%	
How Many Dairy Coops?	304	0.4	0.5
How Many Non-dairy Coops?	302	0.8	0.6
Access to Finance			
Access to Finance	1,089	64.5%	
From Coop	703	20.2%	
From bank	703	20.3%	
From Friend	703	40.1%	
Loan in Last Year	694	38.4%	
Loan Amount	265	1,637,434	2,074,769
Invested in Milk Business	267	37.1%	
Bought Improved Breed	99	24%	
Bought Treatment for Animals	99	49.5%	
Children Under 5			
Child Under 5yrs in HH	1,098	53.9%	
Still Breastfeed	592	29.7%	
Drink Animal Milk	589	91.5%	
Liters Drank in Last 7 days	517	6.3	4.9
Consumption in Last Week			
Maize	1,110	98%	
Value	1,045	24054.3	15471.5
Milk	1,110	96.8%	
Value	1,041	20226.3	12214.3
Millet	1,110	16.2%	
Value	170	10401.2	9692.1
Rice	1,110	46.3%	
Value	501	11515.9	8240.1
Cassava	1,110	75.9%	
Value	811	9851.0	8049.0
Sweet Potatoes	1,110	36.4%	
Value	386	8236.8	77075
Beans	1,110	94.1%	
Value	1,014	13662.7	9448.2
Groundnuts	1,110	46.8%	
Value	500	7828.2	7697.2
Fruits	1,110	32.6%	
Value	337	5173.3	4034.3
Vegetables	1,110	76.1%	
Value	802	5283.7	4710.3
Sugar/Salt	1,110	94.7%	
Value	1,038	5047.9	41.68.5
Oil	1,110	89.5%	
Value	Bongo	1,110	55.1%
Value	548	9246.3	
Soap	1,110	99.6%	
Value	1,091	4410.8	1991.2
Airtime	1,110	93.3%	
Value	996	8207.1	7365.4

3. Traders

Table 10: Dairy Traders

	count	mean	sd
Trade Only	540	30%	
Transport Only	540	44%	
Trade and Transport	540	26%	
Trade Other Dairy Products	541	7%	
Trade Other Products	541	10%	
Number of Competitors when First Started	482	10.3	13.2
Number of Competitors Now	471	15.3	18.7
Traders: Never Make Agreements with Others	301	51%	
Transport: Never Make Agreements with Others	377	67%	
Always Share Info with Others	537	50%	
Part of Cooperative	540	40%	
Received Training on Storage and Handling	540	44%	
<i>Dry Season</i>			
Price of Milk	541	1056	176.7
Bought Milk from Farmers	541	94%	
Number of Suppliers	516	5.2	5
Liters Collected Per Day	524	106.6	99.3
Liters Sold Per Day To...			
... Shops	526	3.9	29.1
... Individuals	526	1.4	8.3
... Cooperative Collection Centers	524	37.0	60.2
...Private Collection Centers	526	42.7	59.1
...Processors	526	5.0	30.9
...Institutions	527	0.3	4.5
...Restaurants	527	0.5	5.3
<i>Rainy Season</i>			
Price of Milk	541	716.9	204.4
Bought Milk from Farmers	541	97%	
Number of Suppliers	533	7.0	10
Liters Collected Per Day	538	187.1	141.6
Liters Sold Per Day To...			
... Shops	537	3.8	18.0
... Individuals	537	2.1	10.5
... Cooperative Collection Centers	535	53.2	77.2
...Private Collection Centers	537	70.3	81.9
...Processors	537	7.9	34.6
...Institutions	536	0.8	6.5
...Restaurants	536	0.7	5.5

Table 11: Dairy Traders

	count	mean	sd
Milk Sometimes Rejected	540	45%	
Reason for Always Rejected....			
...Too Late	51	41%	
... Low Lactose	51	37%	
Rejected Milk Given Away	56	41%	
<i>Supplies Owned</i>			
50L Milk Cans	541	0.88	1.4
25L Milk Cans	541	0.10	0.50
10L Milk Cans	541	0.10	0.8
Jerrycans	541	6.58	5.25
Motorbikes	541	0.82	0.65
Bicycles	541	0.56	0.57
Mobile	541	1.0	0.58
Measuring Cups	541	1.1	6.5
Sieve	541	1.1	1.0
<i>Transport</i>			
Use Motorbike	538	71%	
Use Bicycle	538	27%	
Transport Capacity	535	164.1	86.0
Transport Capacity with Motorbike	383	193.7	77.9
Transport Capacity with Bicycle	144	89.0	50.0
<i>Delivery</i>			
To Individuals	540	49.4%	
To Cooperatives	540	28.0%	
Years Experience with This Type of Buyer	531	2.7	2.6
<i>Testing</i>			
Milk Tested	540	99.4%	
Lactometer Test	537	99.8%	
Alcohol test	537	97.6%	

Table 12: Dairy Traders

	Traders Only			Transport Only		
	count	mean	sd	count	mean	sd
Doesn't count those who reported doing both trading and transport						
<i>Payment</i>						
Paid by Cash	158	98.7%		233	99.6%	
Paid Weekly	158	72.8%		233	60.5%	
Oral Agreements of Sales	160	47.5%		236	55.5	
Written Agreements of Sales	160	15%		236	6.8%	
No Agreements of Sales	160	37.5%		236	37.7%	
Oral Agreements of Buying	160	49.4%				
Written Agreements of Buying	160	11.2%				
No Agreements of Buying	160	39.4%				
Cost of Transport (UGX)/Liter	158	122.7	56.7	228	69.2	43.6
Volume (Liters of Milk)	155	145.8	71.7	235	135.9	131.4
Distance (km)	155	9.46	11.3	233	6.6	7.3

Table 13: Dairy Traders

	count	mean	sd
<i>Hygiene</i>			
Wash Containers	541	99.4%	
With Soap	538	97%	
Dry Containers	538	99%	
<i>Records</i>			
Keep Records	540	90.2%	
Access to Finance	540	66.2%	
Loan in Last Year	540	32.4%	
Amount of Loan	175	1,334,423	1,418,193
Loan Invested in Milk Business	175	64.6%	

4. MCCs

Table 14: Milk Collection Centers

	count	mean	sd
Type of MCC			
Private	55	58%	
Cooperative	55	24%	
Sub-collection From Larger MCC	55	47%	
MCC has other Collection Points	29	41%	
Number of Other Collection Points	12	3.6	1.6
Capacity of Other Collection Points	11	7900	6113.5
Number of Workers	55	3.2	2.7
Buy from Members Only	55	20%	
Number of non-members who supply per day	42	28.3	28.0
Supply (liters) from non-members per day	41	2184.6	2248.1
Number of members who supply per day	53	26.1	43.7
Supply (liters) from members per day	39	3041.6	7218.1
Pays Premium for Quality Milk (Sometimes or Always)	55	33%	
Pays Premium for Large Quantities of Milk(Sometimes or Always)	55	38%	
Total Capacity of MCC (L)	55	5370	5166.3
Usage (%) in Dry Season	55	26.8%	20.2%
Usage (%) in Rainy Season	55	62.1%	32.0%
Payment			
Pay on Delivery	55	14%	
Pay Daily	55	2%	
Pay Weekly	55	71%	
Pay Twice per Month	55	33%	
Pay Monthly	55	2%	

Table 15: Milk Collection Centers

	count	mean	sd
Selling Milk			
Wholesalers	55	24%	
Brokers	55	5%	
Processors	55	71%	
Agent of Processor	55	9%	
Agent of Cooperative	55	0%	
Independent Trader	55	5%	
Retail Shop	55	0%	
Milk Shop	55	2%	
Institution	55	0%	
JESA Dairy	39	38.5%	
Brookside Dairy	39	41.0%	
Ever Unable to Sell Milk	55	38%	
Number of Times Unable to Sell Milk	20	4.2	4.4
Choices on Who to Sell to Available for Farmers...			
A lot	55	45.5%	
A little	55	45.5%	
None	55	9%	
Years Experience in MCC	3.6	4.5	
Total Capacity of MCC when First Started	50	3423	1371
Num of Suppliers when First Started	47	28.4	33.3
Avg Liters Per Day when First Started	49	1649	1321
Average Price in Last Dry Season	48	1105	130
Average Price in Last Rainy Season	50	766	168
Average Daily Collection Last Dry Season	46	1828	1985
Average Daily Collection Last Rainy Season	51	3473	4036
Sell in Kampala Suburbs	55	80%	

Table 16: Milk Collection Centers

	mean	sd	
<i>Supplies Owned</i>			
Milk Cans	5.3	6.9	
Jerrycans	2.2	6.1	
Scale	0.4	1.0	
Lactometer	2.2	1.1	
Warehouse	0.7	0.5	
Milk Trucks	1.6	1.1	
Mobile	0.8	0.9	
Motorbikes	0.3	0.6	
<i>Services Offered</i>			
Training on Milk Prod	31%		
Training on Milk Hygiene	47%		
Credit/Loans	67%		
Equipment to Suppliers	16%		
Milk Cans	24%		
Vet Services	16%		
Transport Services	9%		
Milk Coolers	9%		
Cross-brd Cows	2%		
Medicines	15%		
<i>Why Farmers Choose This MCC</i>			
Always Purchase	29%		
Higher Prices	42%		
Access to Loans	38%		
Buyer Collects Milk	13%		
Provide Advice/training	33%		
Timely Payments	67%		
No Other Choice	7%		
No Quality Checks	0%		
<i>Testing Milk</i>			
Visually	49%		
Lactose Test	100%		
Alcohol Test	96%		
n=55			
	count	mean	sd
Transport to Kampala	55	80%	
By Own Truck	44	77%	
By Hired Truck	44	14%	
By Processors Truck	44	14%	
Current Cost of Transporting 1 Liter	47	75.6	31.7
Cost of Transporting to Buyer on Average Day	43	214274	84795