Appendices

Appendix 1: Questionnaire for Poultry Farmers

Introductory Remarks
This is an instrument for data collection on microcredit and poultry production in the Dormaa Municipality as part of a survey being conducted to fulfil an academic requirement for a Master's degree. The researcher is **Sylvester Amoako Agyemang** a student of Czech University of Life Sciences pursuing his Masters in International Development and Agricultural Economics under the Faculty of Tropical AgriScience. The main goal of the study is to determine the impact of microcredit on productivity efficiency, output and income and as such its role in poverty reduction and national self-sufficiency in poultry production. Information provided will be distinctly confidential and participation is voluntary. The interview will last for approximately 30 minutes and the respondents are kindly requested to provide honest and authentic answers.

Section 1

Questionnaire Number			
Community			
Enumerator Name			
Respondent's Name			
Date		**Time**	

Section 2: Demographic Characteristics of Farmer

Description	*Answers*
Sex	1 – Male 2 – Female
Age	
Marital Status	1 – Married 2 – Divorced 3 – Separated 4 – Widow/er 5 – Single
Household size	
Literacy	1 – Literate 2 – Illiterate
Number of years spent in school	
Main Income source	1- poultry farming 2- Crop/Vegetable gardening 3- Livestock rearing 4- Fishing 5- Pension 6- Remittance 7- Formal employment 8-Casual employment 9-Business 10- Other (Specify) …………………………………...
Other source(s) of income	1) ……………………………………………… …….. 2) ……………………………………………… …….. 3) ……………………………………………… ……..

	4) …………………………………………… ……..

Farm Inputs *(write in figures)*		
Total Land size		
Total land used for farming		
Land used for poultry production	No…………………… ….	Hired (Rent):
		Owned:
Value of land used for poultry production		
Total number of employees	No…………………… ….	Hired labour:
		Family labour:
Total working capital		GHC………………………… ……
Total number of machinery		Hired:
		Owned:
Please provide a list of all the machineries		1) ………………………….. 2) ………………………….. 3) ………………………….. 4) ………………………… 5) ………………………… 6) …………………………
Farm Equipment & Buildings		Hired: No…………… GHC………… Owned:

Please provide a list all the equipment & buildings and indicates whether its modernity as well as its size *(Please use the codes provided below)*		Modernity	Size
	1) Buildings ………………	[ ]	[ ]
	2) Feeders…………………	[ ]	[ ]
	3) Drinkers………………..	[ ]	[ ]
	4) Wheelbarrow…………..	[ ]	[ ]
	5) Shovel………………….	[ ]	[ ]
	6) Water Reservoir………..	[ ]	[ ]
	7) …………………………	[ ]	[ ]
		[ ]	[ ]

Number of day-old chicks (poultry) used per annum:	
How long (years) have you been in poultry farming?	
Total number of birds (currently)	No. …………| Chicks …………………………… Broilers …………………………….. Layers ………………………………

Total number of birds produced	No………………………………
How many birds have you sold for the past one year?	Broilers….. Layers…...
How much is the price of a bird?	Broilers GHC.................................. Layers GHC....................................
Total number of eggs produced per month/year	No……………………………..
Creates of eggs sold for the past one year	No………………………………
How much is the price of a 'create'?	
Total sales from birds per annum	
Total sales from eggs per annum	
Estimated income per annum	
Why do you **farm** poultry? *Rank in order of importance; 1=Most important*	

Reasons, Rank

    1- Source of income   [   ]   3- Food security   [   ]   5- Others (specify)

    2- Social status   [   ]   4- Jobs creation   [   ]   ………………...

Modernity Codes	*Size Codes*
1- New/Modern 2- Old	1- Small 2- Medium 3- Big
Challenges of poultry production? *Rank in order of importance; 1=Most Challenging*	

    1- Lack/low level of technology in production [   ]

    2- High competition faced from cheap imports [   ]

    3- Inadequate capital/credit   [   ]

    4- High energy prices   [   ]

    5- High cost of inputs such as feed   [   ]

    6- Poor quality of day-old birds/chicks   [   ]

    7- Absence of good government policies and legislative instruments [   ]

    8- Absence of available local market   [   ]

    9- Lack of processing and storage facilities   [   ]

Please try to estimate your expenditure of production for the farming season/year using the following guide

Inputs	Source of input *(Use Codes)*	Quantity	Unit Cost (GHC)	Total Cost (GHC)

Day old chicks/birds				
Poultry feed				
Labour				
Services (Specify)				
Veterinary				
Repairs				
Maintenance				
………………………				
………………………				
Drugs (Specify)				
De-wormer				
Vitamins				
Cocxi				
Newcastle				
Disinfectant				
Glucose				
Energy				
Fuel				
Electricity				
Other Cost				
………………………				
………………………				
………………………				
………………………				
Total				

Where/to whom do you sell your birds and eggs?..

How much do you pay for Hired labour? GHC…………………………..per hour/head

How much do you pay in rent for hired land (*if applicable)?* GHC.................................per year.

Section 4: Microcredit/MF and Poultry Production

Do you take microcredit?	1- Yes 2- No
For Microcredit Clients	

If yes, from what source?	1- Formal
	    a) Rural/Community Banks
	    b) Savings & Loans
	    c) Lending Firms
	    d) Co-Operative Credit Unions
	    e) MASLOC
	2- Informal
	    a) Money lenders
	    b) Susu Collectors

For how long?	…………………………years

Please indicate the amount taken in credit	GHC……………....monthly/quarterly/semi-annually/annually/others (specify)…………...
Please name MFI(s)/credit institution you acquire credit from	1) ………………………………………… 2) ………………………………………… 3) ………………………………………… 4) …………………………………………
Why do you borrow from them?	1- Low interest rate 2- Good services 3- Good terms of repayment due to their application requirements 4 - No security needed 5- The closest MFI 6- Trust them
For what main purpose do you borrow?	1- Farm expansion 2- Working capital 3- Input acquisition
Please indicate the estimated rate of loan used for farm and off-farm purpose(s).	Farm purpose:……………………………percent Off-farm:……………………………………percent
Please how much do you pay in interest (rate) on the credit per month	…………………………………percent
How long is the period of repayment?	…………………………………………..(months)
What mode of borrowing do you often use?	1- Group borrowing 2- Individual borrowing
Do you need security before borrowing?	1- Yes 2- No
What do you often use as security?	…………………………………………
How long does it take to access a credit?	
How do you assess the services of MFIs based on your experience?	1- Poor 2- Fair 3- Good 4- Very Good 5- Excellent
Main source of finance	1- Personal savings 2- Microcredit 3- Borrowings from friends & family 4- Loans from Money lenders 5- Loans from Traditional banks 6- others (specify)……………………………………
For Non-clients	
Why don't you take microcredit?	1- High interest rate 2- Difficulty in providing security 3- Lost of trust for MFIs 4- Difficulty in access 5- Distance from farm to the closest MFI 6-
What is your main source of finance?	1- Personal savings 2- Loans from friends & family 3- Loans from money lenders 4- Loans from Traditional Banks 5- Others (specify)……………….............
How much do you pay as interest on your source of finance?	…………………………………percent/annum
Have you ever accessed the services of MFIs in the past before?	1- Yes 2- No

If 'yes', for how long?	
How do you compare their services (MFIs) to your current source of finance?	
For Clients and Non-clients	
Other services from MFIs apart from credit	1- Micro-savings 2- Micro-insurance 3- Micro-transfer 4- Others (specify)………………………………
Please indicate if you have ever lost your savings due to the collapse of MFIs before.	1- Yes 2- No
How many times and how much?	No. of times……………………………. Amount lost GHC…………………....

Section 5: Demand Constraint of Microcredit

Please rank the following challenges to your demand for microcredit
Rank in order of Hierarchy (1 = Most Challenging)

1- Lack of credit security   [   ]

2- High interest on credit   [   ]

3- Time Wasting (Bureaucratic process of application)   [   ]

4- Lack of information on microcredit policy   [   ]

5- Poor mode of repayment   [   ]

6- Lack of trust and reliability of MFIs   [   ]

7- Short period of credit refund   [   ]

Appendix 2: Interview Guide for MFIs

Basic Information about the MFI

   I.   Name of MFI

 II.   Years of operation

III.   Number of clients

1) What are the financial services provided to your clients?

2) Is your organization a credit institution?

3) What are the forms of credit provided by your institution to its clients?

4) Do you have specific credit facilities for farmers?

5) What are the forms of borrowing?

6) How do farmers assess loans from you?

7) Do you have any limit the amount farmers can borrow from you?

8) Do clients need collateral before credits are given to them?

9) How long does it take clients to assess credit?

10) How long does it take to repay back?

11) Are farmers given some grace period before repayment?

12) How is interest rate charged by your institution?

13) What is your rate of interest per month and a year?

14) Are there limitations to the credit offered to the poultry farmers? (lower and upper limits)

15) A brief account on the relations between your institution and poultry farmers?

16) What are your default and repayment rates?

17) Closing remarks

Note: Answers were not restricted to these questions

Appendix 3: Excel Output of the Data Envelopment Analysis using GAMS

dmu	CRS	VRS	SCALE	u0	CRS_TI	VRS_TI
1	0.999986	1	1	0.000	1.35635E-05	0
2	1	1	1	0.000	0	0
3	0.999528	0.999916	0.999817	0.000	0.000472377	8.39E-05
4	0.999788	1	0.999788	-0.532	0.000212425	0
5	0.56187	0.62071	0.905206	0.212	0.438129589	0.37929
6	0.771636	0.780401	0.988769	0.041	0.22836381	0.219599
7	0.052382	0.223542	0.234328	-0.224	0.947617862	0.776458
8	0.737233	0.780097	0.945053	-0.157	0.262767118	0.219903
9	0.78898	0.797641	0.989141	0.013	0.211020405	0.202359
10	0.239166	0.590289	0.405168	-0.489	0.760833988	0.409711
11	0.500947	0.516502	0.969883	0.010	0.499053466	0.483498
12	0.957747	1	0.957747	0.028	0.042252981	0
13	0.434474	1	0.434474	-1.000	0.565525627	0
14	0.648411	0.659544	0.98312	0.012	0.351588983	0.340456
15	1	1	1	4.037	0	0
16	0.86803	0.872169	0.995255	0.009	0.131970355	0.127831
17	0.845989	0.881681	0.959519	-0.073	0.154010608	0.118319
18	0.540686	0.550362	0.982419	0.035	0.459314265	0.449638
19	0.805666	0.854727	0.942599	-0.155	0.194334491	0.145273

20	0.999755	0.999941	0.999981	0.000	0.000245385	5.85E-05
21	0.156491	0.288307	0.542792	-0.288	0.843509109	0.711693
22	0.452003	0.4701	0.961504	-0.099	0.547996884	0.5299
23	0.766369	0.76646	0.999881	-0.036	0.233631389	0.23354
24	0.722245	0.752591	0.959678	0.042	0.277755205	0.247409
25	0.999873	0.999925	0.99997	0.000	0.000127418	7.5E-05
26	0.076776	0.428413	0.179211	-0.416	0.923223632	0.571587
27	0.509587	0.514685	0.990095	0.009	0.490413025	0.485315
28	0.618137	0.694566	0.889962	0.122	0.381863035	0.305434
29	0.999725	0.999743	0.999981	0.000	0.000275411	0.000257
30	0.999848	0.999952	0.999993	0.000	0.000152053	4.81E-05
31	1	1	1	0.000	0	0
32	0.999272	0.999959	0.999959	0.000	0.000728021	4.08E-05
33	0.999092	0.999952	0.999996	0.000	0.000907963	4.84E-05
34	0.999797	0.999939	0.999858	0.000	0.000202845	6.13E-05
35	0.519839	0.616497	0.843214	-0.273	0.480161058	0.383503
36	0.999507	0.999938	0.999971	0.000	0.000493299	6.2E-05
37	0.999991	1	0.999991	0.000	8.87473E-06	0
38	0.999806	0.999888	0.999918	0.000	0.000193642	0.000112
39	0.999141	1	0.999141	0.000	0.000858821	0
40	0.999822	0.999939	0.999997	0.000	0.000177926	6.09E-05
41	1	1	1	-1.000	0	0
42	0.999377	0.999392	0.999985	0.000	0.000622666	0.000608
43	0.999416	0.999947	0.999746	0.000	0.000583532	5.3E-05
44	0.999777	1	0.999788	0.000	0.000222743	0
45	0.999691	0.999967	0.99989	0.000	0.000308736	3.28E-05
46	0.999823	0.999933	0.99994	0.000	0.000177327	6.69E-05
47	0.999724	0.999899	0.999825	0.000	0.000275713	0.000101
48	0.999697	0.999866	0.999831	0.000	0.000302528	0.000134
49	0.999798	0.999978	0.999834	0.000	0.000201614	2.22E-05
50	0.999611	0.999956	0.999999	0.000	0.000388628	4.44E-05
51	1	1	1	0.000	0	0
52	1	1	1	4.240	0	0
53	0.99942	0.999716	0.999703	0.000	0.000580391	0.000284
54	0.999642	0.999875	0.999981	0.000	0.000357635	0.000125
55	0.999935	1	0.999935	-0.001	6.50593E-05	0
56	0.999933	1	0.999933	-0.895	6.6762E-05	0
57	0.99856	0.999181	0.999379	0.002	0.001439854	0.000819
58	0.999964	0.999976	0.999995	0.000	3.62597E-05	2.44E-05
59	1	1	1	0.000	0	0
60	0.999425	0.999514	0.999911	0.000	0.000575474	0.000486
61	1	1	1		0	0
62	0.999972	0.999987	0.999984	0.000	2.8369E-05	1.28E-05
63	1	1	1	-0.480	0	0
64	0.999591	0.999629	0.999962	0.000	0.00040895	0.000371
65	1	1	1	-0.998	0	0
66	0.999816	0.999932	0.999891	0.000	0.000183827	6.8E-05

67	0.999725	0.999786	0.99994	0.000	0.000274553	0.000214
68	0.99978	0.999944	0.99992	0.000	0.0002201	5.65E-05
69	0.999539	0.999689	0.99985	0.000	0.000461397	0.000311
70	0.999911	1	0.999911	-0.416	8.85402E-05	0
71	0.999623	1	0.999918	0.000	0.000377488	0
72	0.999959	0.999976	0.999984	-0.587	4.05895E-05	2.43E-05
73	0.99989	0.999901	0.999989	0.000	0.000110008	9.95E-05
74	1	1	1	0.686	0	0
75	0.999781	0.99997	0.999948	0.000	0.00021865	2.99E-05
76	0.99956	0.999932	0.999974	0.000	0.000440359	6.8E-05
77	0.99985	0.999967	0.999891	0.000	0.0001496	3.29E-05
78	0.999141	1	0.999141	0.000	0.000858821	0
79	0.845989	0.881681	0.959519	-0.073	0.154010608	0.118319
80	0.805666	0.854727	0.942599	-0.155	0.194334491	0.145273
81	0.516779	0.583095	0.886269	-0.210	0.483220752	0.416905
82	0.156491	0.288307	0.542792	-0.288	0.843509109	0.711693
83	0.452003	0.4701	0.961504	-0.099	0.547996884	0.5299
84	0.766369	0.76646	0.999881	-0.036	0.233631389	0.23354
85	0.722245	0.752591	0.959678	0.042	0.277755205	0.247409
86	0.71811	0.875273	0.820442	-0.264	0.281889909	0.124727
87	0.076776	0.428413	0.179211	-0.416	0.923223632	0.571587
88	0.509587	0.514685	0.990095	0.009	0.490413025	0.485315
89	0.618137	0.694566	0.889962	0.122	0.381863035	0.305434
90	0.362267	0.594077	0.609799	-0.360	0.637732575	0.405923
91	0.724012	0.828364	0.874026	-0.305	0.275988352	0.171636
92	0.548067	0.753432	0.727428	-0.361	0.451932599	0.246568
93	0.243731	0.30116	0.809306	-0.104	0.7562695	0.69884
94	0.112678	0.268095	0.42029	-0.234	0.887322482	0.731905
95	0.765066	0.80443	0.951066	0.152	0.234934098	0.19557
96	0.519839	0.616497	0.843214	-0.273	0.480161058	0.383503
97	0.468666	0.496915	0.943152	-0.113	0.531333589	0.503085
98	0.952206	0.974963	0.976659	-0.062	0.04779398	0.025037
99	0.774497	0.797749	0.970853	0.041	0.225502573	0.202251
100	0.392128	0.411812	0.9522	-0.074	0.607872207	0.588188