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ANALYSING THE VALUE CHAIN OF THE FAMILY POULTRY SUB SECTOR IN THE LOWER USUTHU PROJECT AREA IN SWAZILAND

Maxwell S. Thwala



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My special thanks are also sent to all who responded to my questionnaires and interviews during the study. I hope their contribution will go way towards the improving towards the standard of living of all the rural poor in the world.

While I made every effort to reflect as realistically as possible, the views and opinions of various respondents, any errors of commission and omission that may be found in the report are regretted.

Maxwell Thwala

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Contents

Executive Summary	3
1 Background.....	4
1.1 Geographical location.....	4
1.2 Economy	5
1.3 Rural poverty and Food security	5
1.4 Agriculture	5
1.5 Poultry production system	5
1.6 Lower Usuthu Smallholder Irrigation Project (LUSIP).....	6
1.7 Challenges of family poultry.....	7
1.8 Poultry marketing.....	7
1.9 Value Chain analysis	8
2 Justification.....	8
3 Objective	8
4 Material and methods	8
4.1 Study area	8
4.2 Target group and sample size	9
4.3 Stakeholders mapped	9
4.4 Data collection	9
4.5 Data analysis	9
5 Results	9
5.1 Value Chain Function and actors.....	10
5.2 Socio-economic and cultural analysis	10
5.3 Production systems	10
5.4 Information flow.....	11
5.5 Change agents involvements	12
5.6 Profitability analysis.....	12
5.7 Marketing.....	14
6 Constrains and opportunities	15
7 Recommendations.....	15
8 References	17

List of Acronyms and Abbreviations

GDP	Gross Domestic Parity
IFAD	International Fund for Agricultural Development
LUISIP	Lower Usuthu Smallholder Irrigation Project
MOA	Ministry Of Agriculture
PDA	Project Development Area
SNL	Swazi Nation Land (Communal Land)
SWADE	Swaziland Water and Agricultural Enterprises
TDL	Title Deed Land
VIP	Ventilated Improved Pit latrine
	1 USD = E 7 (Emalangeni)

Executive Summary

The main objective of the study was to investigate family poultry value chain in LUSIP, with the view of enhancing identified gaps. Present estimates are that 69percent of the population in Swaziland live below the poverty line of fifty seven Emalangeni (E57.00) and E104.00 per month for rural and urban areas, respectively. Even the poorest families do keep poultry as the source of livelihood. Women in general own and control poultry with very minimal interference from husbands.

Swaziland, does not import broiler meat and eggs as commercial production meets demand. Family poultry products (meat and eggs) are in short supply as most family poultry producers are indigenous farmers who practices subsistence farming and only sell if there is a need for cash. There are opportunities for exports of family poultry products but low and erratic production patterns by local farmers make it impossible to facilitate for a formal marketing channel.

Although the Government of Swaziland has identified family poultry as a tool for poverty alleviation, stakeholder management within change agent needs to be improved to avoid sending conflicting information to the farmers. LUSIP can play a very significant role in the advocacy for family poultry as a tool for poverty alleviation, as the project is well resourced (financially, good genetic material and socially ready communities).

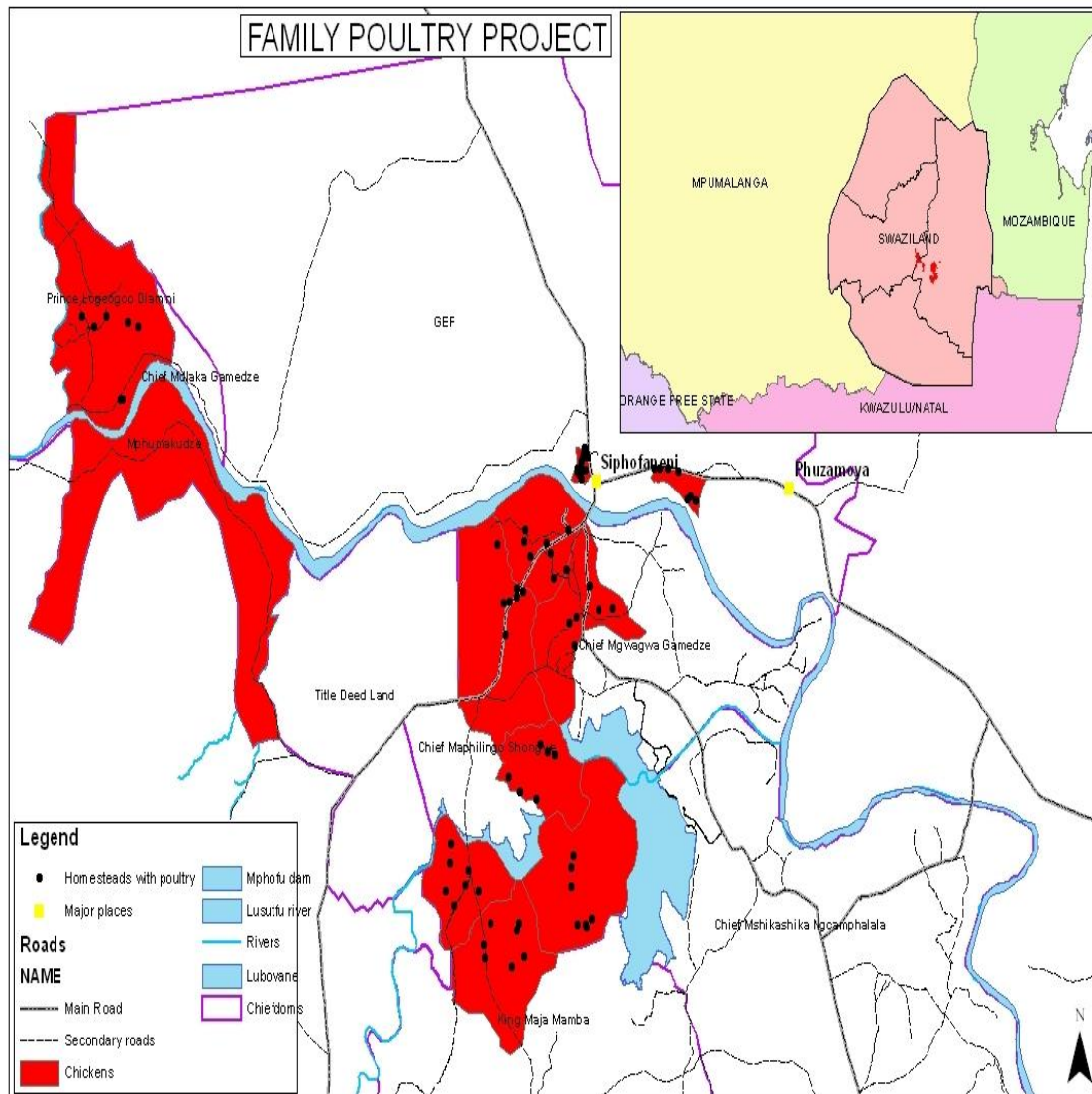
For sustainability of the family poultry sector more collaboration among stakeholders, more research and training of all those involved are needed. Family poultry has got a huge potential to significantly improve the food security status of the rural poor in the short term and also create wealth in the long term.

1 Background

1.1 Geographical location

The geographical coordinates of The Kingdom Swaziland are 26 30⁰ S and 31 30⁰ E. The country is completely landlocked by the Republic of South Africa and Mozambique. The total area is 17 000 km² and the country is divided in 3 ecological zones, the Highveld, the Middleveld and the Lowveld. The Highveld is a rainy area which receives between 800-1000 mm annually while the Lowveld is drought prone with annual rainfall between 200-400 mm per year and the Middleveld is in between the two.

Figure 1: LUSIP Project area and locations where producers were interviewed



1.2 Economy

Swaziland's currency is pegged to the South African Rand, subsuming Swaziland's monetary policy to South Africa. Customs duties from the Southern African Customs Union (SACU) accounts for two-thirds of Swaziland's government revenues, and worker remittances from South Africa substantially supplement domestically earned income. The country's GDP (Purchasing Power Parity) is estimated at \$5.882 billion (CIA, 2009))

1.3 Rural poverty and Food security

The World Bank defines poverty "as a pronounced deprivation of well being related to lack of material income consumption, low level of education health, vulnerability and exposure to risk and risk and voicelessness"

Poverty is an old phenomenon in Swaziland which has become more pronounced in recent years; poverty rates have increased at unprecedented rates over the decades. Present estimates are that 69percent of the population lives below the poverty line of fifty seven Emalangeni (E57.00) and E104.00 per month for rural and urban areas, respectively (UNEP 2007).

Within ecological regions there are substantial differences in average per capita monthly consumption. Thus the Highveld region with E162.00 has almost twice the average consumption level of the Lubombo Plateau with E87.00; while the Middleveld and Lowveld regions have similar levels of consumption at E102.00 and E117.00 respectively.

Poverty is driven by the persistent drought that has caused famine in many rural communities, especially in the eastern Lowveld and Lubombo plateau. In addition there are, the loss of income earnings through retrenchments and general unemployment that has sky rocketed, thus contributing to the lack of access to productive resources by the poor. Lastly, the HIV and AIDS scourge has intensified poverty due to the loss of earnings from breadwinners in families.

1.4 Agriculture

Although agriculture provides only about 8.4 percent of the GDP, it is the highest major employer. About 60 percent of the arable land is in the hands of the indigenous rural farmers but accounts for less than one third of the agricultural outputs. In contrast modern farms on TDL occupies about 40 percent of agricultural land and contributes more than two third of the total output. A major constraint for the development of the resource poor SNL farmers is the non-availability of irrigation water which could enable them to increase their production. The Republic of South Africa plays a very significant role to meet up/fulfil the agricultural deficit of the country. More than 80 percent of the beef cattle are in the hands of the indigenous farmer who rear for pride rather than for profit. High stocking density, overgrazing, soil erosion and climate change are the major threats for this industry. Culturally cattle are men dominated and poultry is women business.

1.5 Poultry production system

Poultry keeping has been practiced for many decades in Swaziland with indigenous breeds being a source of protein (meat and eggs) and for cultural or social use. Generally every rural homestead in Swaziland keeps chickens

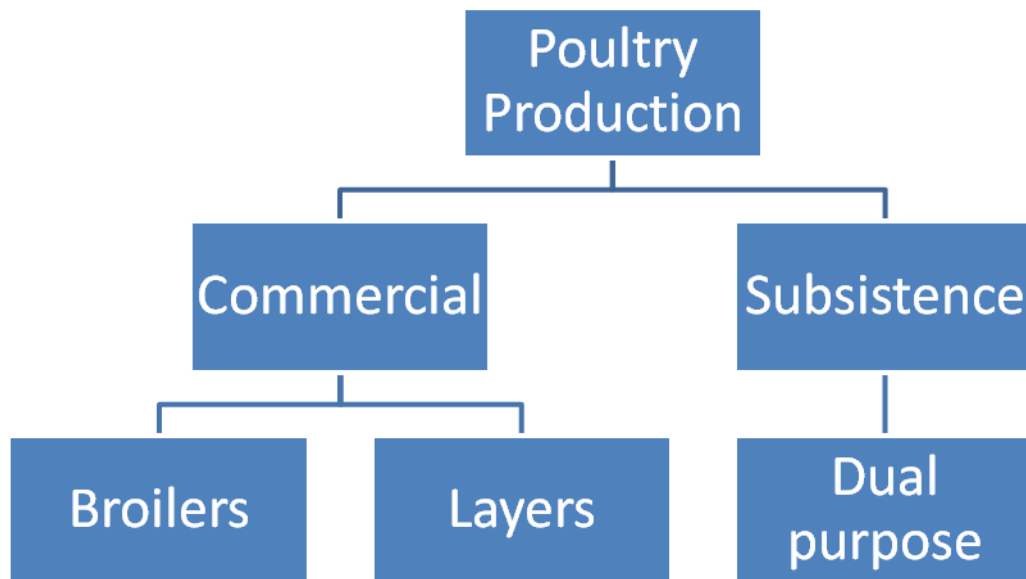


Figure 2: Poultry structure in Swaziland

In Swaziland the poultry production system is divided into two types, which are commercial poultry production and subsistence production. Commercial producers keep hybrid broilers and / or layers that are raised under intensive systems. Small scale commercial broiler producers keep a minimum of 100 birds per cycle while large scale commercial broilers keep thousand per cycle.

Egg farmers are at liberty to keep any number of birds as pullet suppliers can sell any number that is required by a farmer. Subsistence farmers, keep dual purposes birds (for meat and eggs) usually under extensive free range or scavenging system. The rural poor form a large proportion of subsistence farmers and their production is oriented towards food security and they sell only surplus. It is important to note that pullet layers are sourced from South Africa and day old chicks are sourced both locally and from South Africa.

Swaziland, does not import poultry meat and eggs as the local production is able to meet demand. Poultry farmers are also benefiting from the Namboard act of 1985 which protects local poultry production from unfair foreign competition. The feed supply side is not protected and farmers are able to source feed directly from South Africa and from three feed millers located in Matsapha, the industrial hub of Swaziland. Vaccines and other poultry medication are easily available from a number of suppliers throughout the country's distribution points. There are a number of change agents who provide extension services in the rural areas. In an attempt to promote local production, the government of Swaziland exempts all imported farm inputs from taxes. There are government extension agents, private sector actors, NGOs and Government agents such as the Swaziland Water and Agricultural Development Enterprises.

1.6 Lower Usuthu Smallholder Irrigation Project (LUSIP)

LUSIP is a poverty alleviation initiative in the South-Eastern Lowveld of Swaziland. IFAD is the major funder and SWADE is the implementing agent. The project promotes the allocation of water rights to smallholders who have historically been denied water rights in favour of large commercial ventures. LUSIP provides irrigation water to estimated 2600 farmers to convert more than 6500 hectares land currently used for rain fed subsistence agriculture to irrigate commercial cash crop production. The project also promotes commercial livestock production such as cattle fattening, dairy production and

family poultry production. Groups are given free training on group dynamics, production systems, business plans and marketing. Depending on the scale and level of the business groups they are also given grants as a startup package or/ and linked with financial institution.

1.7 Challenges of family poultry

The challenges which the family poultry sector in Swaziland is facing are not different or unique from other Sub-Saharan Africa countries and they include the following:

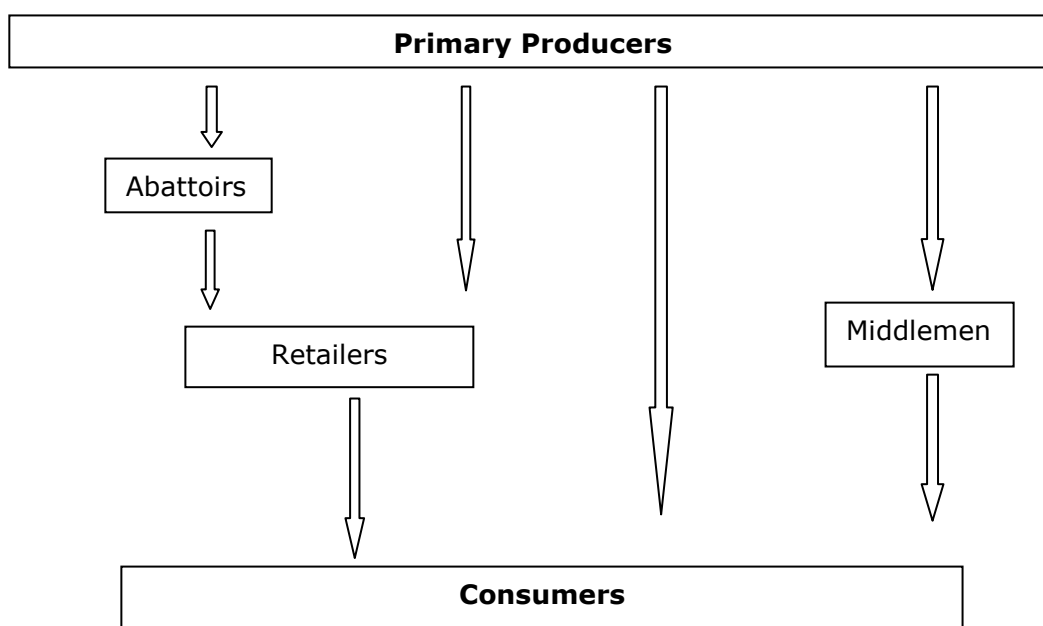
- Lack of management skills for local chickens
- High mortality due to poor animal health care in remote areas
- Poorly organized market channels
- Poorly organized technology transfer
- The low availability of technical personnel
- Poor farmers' commodity groups
- High input cost

1.8 Poultry marketing

According to Namboard and MOA, the country does not import any broiler meat and eggs as the local production meet demand. Per Capita Poultry meat consumption is 24.3 kg. In 2009 an estimated 7281.4 eggs were produced, although one should note that these estimates does not include eggs from the family poultry sector and from some of the small scale producers.

There are two marketing channels for poultry: formal and informal markets. There are large commercial farms that use the formal market and small scale commercial farms that mostly market their product live in the informal market. Family poultry products are also mostly distributed through the informal market. In the recent years broiler supply to live markets by large commercial producers has rendered broiler production for small-scale producers an unprofitable venture. The live broiler market is largely dominated by commercial producers who dump their birds whenever their formal market encounters problems (MOA. 2009). Commercial producers source day old chicks or layers from importers or from local hatcheries while indigenous poultry producers produce their own day old chicks.

Figure 3: Poultry industry in Swaziland



1.9 Value Chain analysis

Value chain activities bring products from its conception to its end user and include production, marketing and distribution which may be confined to a single geographical location or spread over a large area (Porter 1985). Value Chain analysis is essential to understand the production system, marketing channels and their relationships, the participation of different actors, and the critical constraints that limit the growth of poultry production and consequently the competitiveness of smallholder farmers. These farmers currently receive only a small fraction of the ultimate value of their output, even if, in theory, risk and rewards should be shared down the chain source (Rota 2009). In the poultry sector farmers are getting about 15-20 percent of the gross profits.

2 Justification

Swaziland is ranked as lower middle-income country but the distribution of income is uneven. More than 69 percent of the population live below poverty line and a large section of the poor live in the Lowveld. The government of Swaziland has identified family poultry as one of the tools that can be used to improve food security. This study will mainly focus on the value chain of the family poultry production systems. The findings of the study will help to identify the gaps along the value chain and recommend necessary interventions.

3 Objective

The main objective of the study was to investigate the family poultry value chain in LUSIP, with the view of removing identified gaps. It included the following components:

1. To review existing production and marketing systems.
2. To identify the gaps in the family poultry production and marketing channels.
3. To map all key stakeholders/actors both formal and informal that are involved in the family poultry sub sector and their linkage and importance.
4. To analyse the family poultry profitability.
5. To recommend necessary intervention required to achieve a meaningful improvement.

4 Material and methods

4.1 Study area

The study was conducted in the Lower Usuthu Smallholder Irrigation Project Area in Swaziland. Seven Chiefdoms in phase of one project of the LUSIP were covered as follows:

- Mandlenya (Chief Mgwagwa Gamedze)
- Ngcamphalala (Chief Mshikakashika Ngcamphalala)
- Mamba (King Maja Mamba)
- Lesibovu (Prince Longcongco)
- Mkhweli (Prince Maguga)
- Shongwe (Chief Maphilingo Shongwe)
- Mphaphati (Chief Dlamini)

4.2 Target group and sample size

From every Chiefdom an existing group or association of family poultry farmers was randomly selected. Out of the seven groups, only one group was formally registered as a legal entity (company). The groups were formed by neighbours who had a common vision of addressing food security and income generating. A total of 186 individuals were interviewed from 7 groups.

4.3 Stakeholders mapped

Data was gathered from the following actors/ players of the value chain.

Table 1: Stakeholders mapped

Value chain players	Group / Association / Company	Number of people interviewed
Farmers groups or associations	7	186
Traders	3	3
Extension Organisation	3	7
University of Swaziland	1	1
Input Suppliers	2	2
Abattoir	2	2

4.4 Data collection

Primary data was collected using a questionnaire, interviews (personal and telephonic interviews), personal observation and a GPS was used to geographically identify areas interviewed.

4.5 Data analysis

Quantitative and qualitative data was entered and analysed using excels and GPS co-ordinates were entered on Arch-Explorer to produce maps.

5 Results

Based on field interviews and observations by the study team, the following are key highlights of family poultry value chain in the study area:

- There is no clear value chain for family poultry in LUSIP and in Swaziland.
- All farmers interviewed kept chickens and only 23 percent of the farmers kept other species such guinea fowls, ducks and turkey.
- Family poultry productivity is very low, as only about 30 percent of chicks reach maturity.
- Most of the families which are classified as poor, keep poultry as their livestock.
- According to LUSIP census survey indicated that all families two thousand (2600) within the PDA kept poultry.
- Commercial farmers are playing a very significant role in meeting urban poultry demand while family poultry is playing a significant role in meeting rural poultry requirement.
- Eighty six (86) percent of farmers interviewed are keeping crosses of local indigenous birds with exotic and or hybrid and 14 percent are keeping local indigenous breeds.

- Seventy (70) percent of the farmers only sell when they think they have got a surplus or they need quick cash.
- Ninety three (93) percent of farmers think that high feed cost and chick mortality are a major constrains.

5.1 Value Chain Function and actors

The main value chain actors include producers (family poultry producers), input suppliers, technical services (extension) and marketing

5.2 Socio-economic and cultural analysis

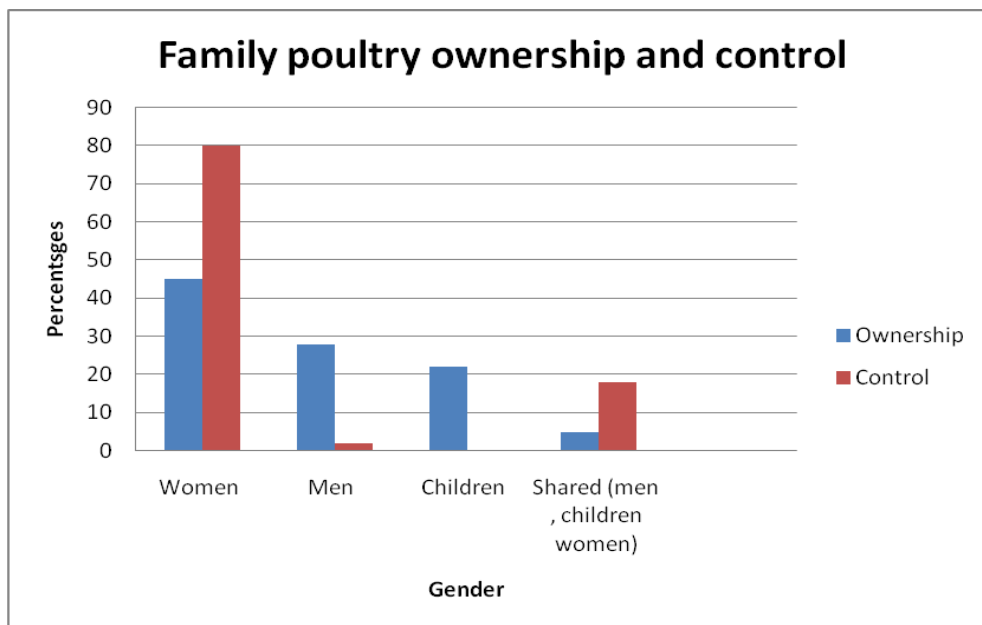


Figure 4 : Ownership of family poultry

Family poultry personally belong to women and they have full control of usage without any interference by men or their husband as indicated by Figure 4 above. Women own 45 percent of family poultry and about 80 percent of them controls the usage without interference from their husbands. Culturally men view poultry as women business; only 28 percent personally own family poultry and only about 2 percent claimed to have full control over the usage without involvement of their wives. Children personally controlled 22 percent of family poultry but when it comes to usage, they have to consult with their parents. None of the 186 farmers interviewed keep any production records. As there were no proper records it was almost impossible to determine the financial contribution of family poultry to family income but about 70 percent of the respondents claimed that poultry contributes to more that 50 percent of their monthly income (as money and or as food)

5.3 Production systems

All the farmers interviewed rear their poultry for family use (meat and eggs) and only sell or barter chickens if there is surplus from the family need. Eating family poultry eggs is culturally not accepted as it is viewed as eating a whole chicken. Forty six percent of the interviewed farmers let their birds stay on trees tops and 11 percent of farmers provide housing and protection for chicks which are less than a month old. Poultry species like ducks, guinea fowls and turkey are kept as a hobby by few individuals. Of the farmers

interviewed only 1.2 percent keep hybrid broilers for commercial purposes. The local hens lay about 36 eggs annually, the hatchability is about 70 percent and only, about 30 percent of chicks reach maturity.

The issue of bio-security and animal health is well understood by the farmers but their poverty level determines the strategy which they adopt. All the farmers interviewed heavily depend on traditional medicines for the treatment of birds. The farmers are skilled mixing a combination of traditional herbs for purposes of treatment of birds. For instance aloe (*Aloe Vera*) seemed to be the most trusted herb for treating respiratory infections. Only about 8 percent of the farmers sometimes buy vaccines or medication from the input suppliers. About 16percent percent of the farmers interviewed cook and eat birds which die from unknown causes (from Maphilingo and Lesibovu), while the rest claimed to throw dead birds in pits or Ventilated Improved Pits (VIP) for bio-security reasons. Seventy three (73) percent of the farmers have got VIP -toilets, while 30 percent claimed that their neighbours don't have VIP and thus they use nearby bushes to relieve themselves. Lesibovu has the highest number of families that did not have VIPs.

The farmers listed 5 diseases of economic importance as follows

1. Respiratory diseases
2. Warts
3. Newcastle
4. Diarrhoea
5. Parasites (lice, worms etc)

5.4 Information flow

Out of the seven ((7) chiefdoms only in two (2), Gamedze and Lesibovu people have been trained on poultry production by government extension and NGOs in the last two years and the rest have not been formally trained. Even those who have been trained claim to getting conflicting messages from the change agents. Experienced poultry farmers play a very critical role in mentoring inexperienced colleagues within a community or association. Farmers in all the communities indicated that for them to improve productivity, they would need to be trained and monitored by experience Family Poultry Experts. Training for the following subjects would be given the highest priority by the farmers:

- Diseases management
- Chick management
- Feeding techniques
- Marketing
- Record keeping
- Financial management

5.5 Change agents involvements

Table 2 : Private, government departments and NGOs interviewed and their role with the farmers

Name	Type	Working with the farmers	Actual activities	Challenges
Senior Poultry Officer	Government	Training	Farm group organisation Production Marketing	Lack of family poultry Technical Skills Poor stakeholder management
Veterinary services	Government	Livestock movement regulatory Disease control	Vaccination,	Poor stakeholder management Lack of resources
University Of Swaziland	Private	Training and Research No involvement	Student research	Lack of interest from the commercial farmers Lack of interest from student FP not include in the curriculum
World Vision	NGO	Funding	Buying inputs , training	
Sivuno Farmers Input Suppliers	Private	Input Supply	Supply all farm Inputs Feeds Vaccines Advice	Sales Representative lacked technical skills on family poultry
Pfizer	Private	Training and Input Supply	No activity	Low demand

Table 3: Family poultry demand and supply compared to other meat categories in selected retailers

Matata Spar – Retailer						
Meat type	Main source	Availability	Quantity Demanded /per week	Is demand met	Average Cost/ kg	Average Price
Family poultry	None	Not available	Not sure	No supply	E 19	E30
Broiler	Local abattoirs	Yes	500 kg	Yes	E 19	E30
Beef	Local abattoir	Yes	4000 kg	Yes	E25	E45
Pork	Local farmers	Yes	1000 kg	Yes	E21	E35
Edladieni Kitchen Market						
Family poultry	Indigenous farmers	Yes	50	Yes	E35	E100
Broiler	Not sold					
Beef	Not sold					
Pork	Not sold					
Manzini Market (Informal Market)						
Family poultry	Indigenous farmers	Yes	200 kg		E25	E40
Broiler	Commercial farms	Yes	2000 Kg		E18	E30
Beef	Not sold					
Pork	Not sold					

5.6 Profitability analysis

Almost all the farmers interviewed practice subsistence farming and only sell surplus. Finding records on cost and investments was almost impossible. The gross margins indicated in Table 3 are based on a combination of data and information provided by a few farmers, feed suppliers and the team personal experience and observation

Table 3 Key assumptions

Total Number of breeding stock	Units	Value
Cocks		1
Hens		10
Number of cycles/year	Cycles	4
Chicks/hen /cycle	Chicks	10
No. of Days in a cycle	Days	90
Cockerel ratio		50%
Pullet chick ratio		50%
% mortality and losses		50%
Selling Price		
Cocks	SZL	50
Hens	SZL	50
Vaccination and treatments/chick	SZL	3
Number of chicks sold/cycle	Chicks	50
Total Medication cost /cycle	SZL	600
Marketing costs/cycle	SZL	250
Marketing costs/year	SZL	1,000
Packaging cost/bird	SZL	5
Packaging cost/cycle	SZL	250
Packaging cost/cycle	SZL	1000
Supplementary Feed Cost		
Yellow crush (50kg)	SZL	100
Mixed fowl food (50kg)	SZL	150
Total Feed costs/kg	SZL	2.5
Feed consumed (kg/chick/day)	Kg	0.090
Number of days feed is supplemented/cycle	Days	60
Feed cost/chick/cycle	SZL	13.5
Supplementary feed cost/cycle	SZL	675
Supplementary feed cost/year	SZL	2,700

Table 4 Summary of operational cost

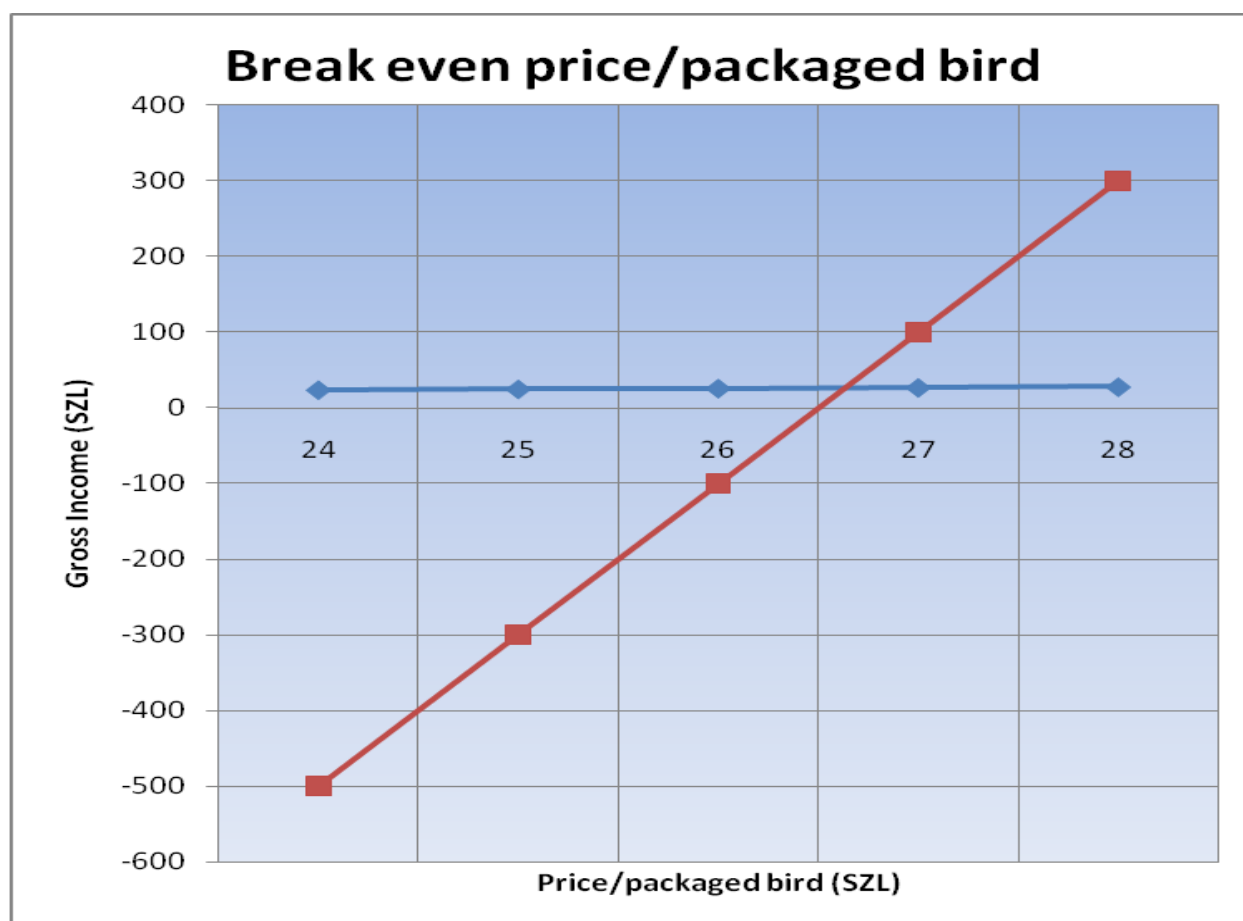
OPERATIONAL COSTS	Annual Total
Supplementary Feed	2,700
Medication	600
Marketing	1,000
Total Operational Costs	4,300

Table 5 Summary of annual gross margins

Items/cycle	Amount (SZL)	
	Informal	Formal
Price	E50/live bird	E25/package bird
Income	10,000.00	5,000.00
Operational costs	4,300.00	4,300.00
Packaging costs		1,000.00
Gross margin	5,700.00	-300.00

Under the packaging costs stated in Table 3, the break even price per packaged bird is SZL 26.50 as illustrated by Figure 5.

Figure 5: Breakeven price/package bird



5.7 Marketing

Swaziland does not import any chicken meat and eggs as local production meet demand. The only poultry products that are imported are small amounts of canned products, turkey and ducks which are not locally produced. Family poultry is mostly sold live at farm gate and / or at informal markets in urban areas through middlemen. In rural areas it is bought by all classes of people including the poor but in urban areas it is bought mostly by middle to high class people that are health conscious. Family poultry eggs are

not available in the market, as most farmers do not eat or sell family eggs due to cultural beliefs. Fifty Emalangeneni (E50) is an average price for a table weight chicken. Prices range from E20.00 to E300.00 depending on the number of factors such as source, breed, sex, purposes of purchase etc. The national radio Swaziland Broadcasting and Information Services is playing a very critical role in the dissemination of family poultry market information.

6 Constrains and opportunities

Poor stakeholder management: There are always conflicts in roles between department of animal production and department of veterinary services and that would need to be sorted. NGOs like World Vision have a donor approach, while organizations like SWADE are using a business approach. There is a need to harmonize the different approaches as we are dealing with one community.

Family is poultry is not clearly understood: The subject of family poultry is not well understood by the different change agents, and as result different training tools are used and confusing information is disseminated to farmers. There is an opportunity for research and all findings and experiences should be consolidated into one training manual for the country.

Poor husbandry practices: Poor animal management practices such as, poor housing, poor feeding and poor diseases management results into low productivity. Proper training, motivation of farmers and research of alternative feeds easily improve animal husbandry practices

Poor marketing channels: Due the low production levels, the marketing channels for family are not clearly defined. With increased production level, more players in the value chain will be attracted and marketing channels will be clearly defined.

Lack of entrepreneurship: Most farmers keep their poultry on a subsistence basis for home consumption and only sell surplus .There is therefore a great need to develop family poultry entrepreneurs with business skills such as planning, record keeping and budgeting

7 Recommendations

On inception the LUSIP project was designed for the development of rain fed cropland into irrigation schemes. It was anticipated that all the poor in the area will benefit but during the implementation it became clear that only those who have good arable soils will benefit. Family Poultry is one alternative that can be used in LUSIP to cover those who will not benefit from irrigation blocks. Women and children are mostly the ones who are left out from the irrigation blocks as they cannot own land and are thus those marginalized groups who should be mostly targeted for family poultry developments. SWADE is regarded as a leading facilitator of rural development in Swaziland. If the family poultry project can be successfully implemented at LUSIP the approach would be easily adopted by the whole country.

Relevant interventions are necessary for the development and sustainability of family poultry. The following recommendations are based on the study findings, personal observation and experience. Additional investigations may lead to further insight and modifications of these suggestions.

Awareness creation

- Community awareness workshops on the importance of family poultry as a tool for food security, income generation and gender mainstreaming should be organized.

- Traditional leaders, politicians and opinion leaders should be used to push the agenda for family poultry.
- Success stories on LUSIP should be emulated to other SWADE Projects and the whole country.

Bio-security and health

- The Ministry of Health and Social welfare should be engage in the training program to discuss the issues of food safety
- Government Veterinary Department should be permanently involved and participate to measures of diseases prevention rather than only in times of an epidemic.

Formation of groups

- For the growth of family poultry it is recommended that production should be at family level and commodity groups should be formed to work as pressure groups and also facilitate for mobilization of resources.

Markets

- LUSIP should facilitate the improvement of the Family Poultry value chain in particular to achieve that profits within the chain are distributed evenly among the players.
- Farmers need to be linked with markets that have got the potential for exports.
- Family poultry should be included in the farmer's market intelligent system currently developed by LUSIP

Trainings and training tools

- Family poultry training manual for the country need to be developed.
- Leader farmers, who will in turn empower other community members should be trained

Change agent

- The University of Swaziland need to be proactive, by introducing a family poultry course in their undergraduate program and also increase research on family poultry.
- MOA needs to revisit her action research program – collecting and analyzing data from farmers
- Working relationships among implementing agents needs to be harmonised especially between the following stakeholders.
 - Ministry of Agriculture and NGOs
 - Department of Animal Production and Veterinary section
 - All rural development agents
- Change agent's needs to be empowered in all aspects of family poultry.

Research on production

- Due to lack of scientific research and an appropriate record keeping by family poultry farmers, profit assessment is mostly based on assumptions and farmers experiences which are varied. It is therefore important that scientific research on local environment is done on the following subjects.
 - Feeds and feeding
 - Quantity and type of feed consumed per bird
 - Research on scavengeable feedstuffs
 - Average time taken by family poultry to reach table weight

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