



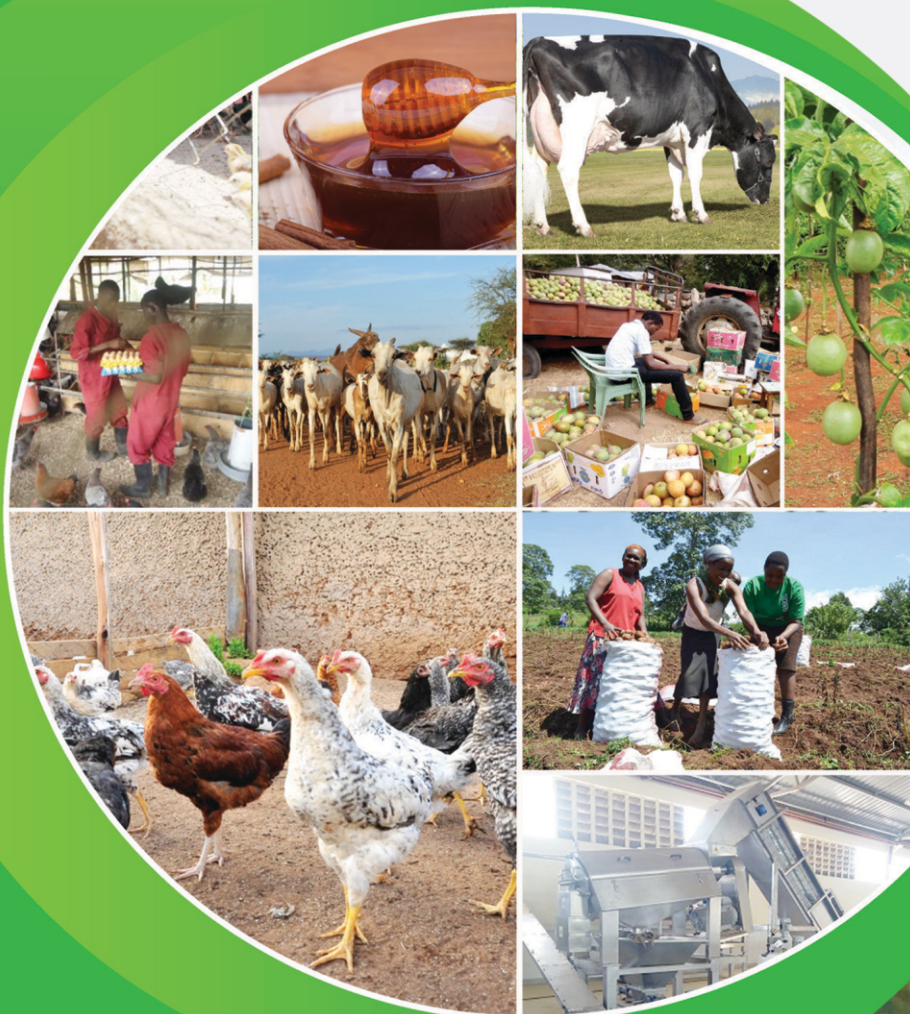
**MINISTRY OF AGRICULTURE, LIVESTOCK,
FISHERIES AND COOPERATIVES
AND
COUNTY GOVERNMENTS**



**AGRICULTURAL SECTOR DEVELOPMENT SUPPORT PROGRAMME II
(ASDSP II)**

**FEASIBILITY STUDY REPORT
WEST POKOT COUNTY POULTRY ABATTOIR**

FEBRUARY 2017



"Transforming Kenya Agriculture Sector"





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Agricultural Sector Development Support Programme II (ASDSP II)

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Executive Summary

In June 2015, the Agricultural Sector Support Programme, West Pokot, funded a study covering four sub counties of West Pokot i.e. West Pokot, Pokot South, Pokot Central and Pokot North to establish the economic viability of local chicken processing. The results of the study revealed that such a facility was viable. This has been corroborated by a team from the National Government Ministry of Agriculture Livestock and Fisheries. The key findings are as follows:

a) Projected costs

- The projected cost of poultry production across the County, covering 28,000 farmers, is estimated at Ksh. 71,921,187 in year one rising to Ksh. 281,884,947 in year five.
- The net profit for the same period is projected to be Ksh. 32,024,704 and Ksh. 153,301,820 respectively
- Feed production is a mandatory component of poultry production and shall run parallel to the poultry enterprise. In the first year of feed production a net profit of Ksh. 7,908,855 could be realized, this should rise to Ksh. 20,400,190 in the fifth year.
- Construction and equipping the abattoir is estimated to cost Ksh. 60 million.
- Its operation is expected to raise Ksh. 349,794 in the first year owing to huge capital investments in infrastructure and equipment. The situation is set to change in the fifth year of operation when a net gain of Ksh. 18,262,278 is projected.
- By the fifth year, poultry production, processing and product marketing are expected to have attained a progressive equilibrium inching closer to accelerated growth and eventual sustainability.

From the foregoing observations, the most appropriate business model for the West Pokot Poultry Abattoir needs to take into consideration the following:

- a) There must be a significant net profit to producers to ensure supply of adequate quality poultry. As a stand-alone enterprise, poultry population per household must be at least 300.
- b) This is arrived at on the basis of production costs that are at least 300 Kenya shillings per bird in 6 months or 50 Ksh per month ($300/= \div 6$) and 1.60 Ksh per day ($50/= \div 30$ days). Thus by selling at least 50 birds per month at 500/= each, producers will make a profit of $(50 \times 500/=)$ minus cost of production ($50 \text{ birds} \times 50/=$) or 22,500/=. This works out at 750/= per day ($22,500 \div 30$).
- c) For an average household of 7 members, each is able to get 107/= or 1 dollar per day which marks a departure from poverty.
- d) For the viability of the abattoir, in the first year, at least 800 households need to keep 300 chickens each. This will support continuous processing and a constant supply of products to destination markets.

b) Business Model

1. For greater profitability of the poultry production enterprise, the recommended business model is one where producers manage the processing node through a cooperative society in which they buy shares and apportion bonuses and dividends based on poultry deliveries and shares. This model

boosts producer income and ensures sustainability of the enterprise. Consequently there is an urgent need to strengthen the existing West Pokot Poultry Cooperative by creating awareness of its existence among all poultry producers in the County and convincing them to be members based on demonstrated benefits.

2. In the preliminary stages (first 5 years) of the Poultry abattoir, the County Government will need to provide at least one carrier (canter lorry) per sub-county, establish and maintain aggregation centres in the sub-counties and provide free or subsidized veterinary care (vaccinations).
3. The design of the abattoir should provide for the following future considerations:
 - a) Up-grading of processing capacity from 5,000 birds up to 15,000 birds per day;
 - b) Up-grading to export standard;
 - c) Slaughter of different species of birds e.g. turkeys, ducks and geese, this can be done through established separate lines or the same line but at different times.
 - d) Expansion or introduction of equipment to carry out further value addition including making of sausages and other high value poultry products.
4. Possible markets for the poultry products include Western Kenya, Trans-Nzoia, Uasin-Gishu and the Central Rift Valley counties alongside Nairobi City County.

c) Conclusion

Based on the preceding observations and assuming that the stated recommendations are positively considered, it is concluded that the proposed West Pokot County Poultry Abattoir is a viable enterprise so long as its location satisfies the following demands:

- a) Legal veterinary requirements regarding abattoir locations are met;
- b) Location is easily accessible to most or all users;
- c) Water and electricity supply is constant and adequate;
- d) The location is agreed upon by all sub-counties and
- e) The location is large enough, more than 5 acres, to allow for future up-grading to export standard.

The abattoir will enable regular inspection of all slaughtered poultry thus promoting public health and contributing to the realization of food of "acceptable quality" as provided for in the country's Constitution.





Introduction

1.1 Background

West Pokot County, one of the 14 Counties in the Rift Valley region, is situated in the North Rift along Kenya's Western boundary with the Uganda border. It borders Turkana County to the North and North East, Trans Nzoia County to the South, Elgeyo Marakwet County and Baringo County to the South East and East respectively (Figure 1). The County covers an area of approximately 9,169.4 km² stretching a distance of 132 km from North to South. More than half of the County is semi-arid but the highlands of Kapenguria and Lelan receive up to 1,600 mm of rainfall making them suitable for arable agriculture and dairy production.

The population of the county is estimated at 771,180 with a 1:1 ratio of men and women. The youth comprise 31% of the County's population. The population mainly depends on pastoralism as their main source of livelihood. Subsistence crop production is practiced in the arable sub-counties. The average farm size is 30 hectares and most of the land is communally owned. Livestock production is an important component of the County's GDP. There are 686,375 indigenous Zebu cattle, 460,327 sheep, 551,596 goats, 30,617 camels, 36,473 donkeys and 397 pigs. Poultry production features prominently among the women folk; the population of chickens is approximately 1.73 million. Livestock and crop production contribute over 84% of household income in the County and constitute the principal source of employment.

The incidence of population poverty is estimated at 68.7% while food poverty exceeds 69%, thus, a majority of the population cannot afford minimum basic nutritional requirements. Food insecurity is a hindrance to development investments by the Government and individuals. The high poverty levels are associated with drought, high illiteracy and the culture of cattle rustling, poor infrastructure and proliferation of illegal arms. Other causes are poor marketing outlets and slow uptake of agricultural technologies.

1.2 Context

In June 2015, the Agricultural Sector Support Programme, West Pokot funded a study covering four sub counties of West Pokot i.e. West Pokot, Pokot South, Pokot Central and Pokot North. The key objective of the study was to establish the economic viability of local chicken processing in the County. The results of the study revealed the following key observations;

- The purpose of rearing chicken was for income and home consumption and that women were the key participants in the enterprise while the key feeding system is scavenging with supplementation using home-grown grains and household food refusals.
- The average number of hens were 11 per household (ranged 1-50), cocks 5 per household (ranged 1-30) and chicks were 16 per household (ranged 0-250) while the average number of cocks sold per year per house hold ranged from 50 to 60 and hens sold per year for each household ranged from 40 to 60 hens
- Outbreaks of diseases and predation were the major constraining factors of chicken production. However, the enterprise on the other hand was viewed positively by the producers who expressed keen interest to boost local chicken production and productivity.
- Key considerations for a successful enterprise include availability of feed, disease control, improvement of infrastructure and improvement of security within the County. In addition there is need to develop a well organised market system for poultry and poultry products and further facilitate access to credit, extension and veterinary services.

- The findings concluded that the County has a vast population of chicken and that there is a high demand of the same in the County justifying the establishment of a processing plant.

2. Methodology

The feasibility study of the proposed West Pokot County Poultry Abattoir was conducted from 15th - 17th February 2017 by a Team consisting of Officers from the National and County Governments. The Team carried out a desk review of relevant documents including the County Integrated Development Plan; Kenya Vision 2030 and the Kenya Constitution 2010. Face to face interviews were conducted among key poultry value chain stakeholders alongside site visits to selected poultry production groups and centres.

The Team arrived in Kapenguria, West Pokot County, on Wednesday 15th February 2017 and met the County Coordinator of Agricultural Sector Development Support Programme (ASDSP), Mr. Peter Owoko, and the M&E Officer for the Programme, Mr. Victor Namboka. Later on the same day, the Team met the CEC – Agriculture, Livestock and Fisheries, Mr. William Lokira; members of the Pokot Poultry Cooperative Society; Kanglikwon Youth Group; Jitokeze Wa-mama Wa-Africa – Community Based Organisation and KET Poultry Group.

On Thursday, 16th February 2017, the Team started the day by meeting the Chief Officer Ministry of Livestock, Veterinary and Fisheries, Mr. J.P Akudian and later visited Chepareria Poultry Market. In the afternoon, the Team met poultry value chain stakeholders at Yang'at Social Hall where a presentation on the key



Figure 1: Location of West Pokot County in Kenya

aspects of the Poultry Abattoir business plan were presented and discussed. On 17th February 2017, the Team made a preliminary presentation of its findings to the CEC - Agriculture, Livestock and Fisheries, the Chief Officer and the County Cooperative Officer.

3. Situational Analysis

1.3 Chicken Production

Chicken farming is a major income generating activity for women. Also, chicken rearing is considered a household matter and can be done with only a relatively low investment in comparison to other livestock. The owner of the chicken was majorly the woman the responsibility of taking care of the local chicken is likely to be done by the wife or women. Further, majority of the farmers affirmed that they belong to a group. Chicken are kept in most farm households without clearly defined purpose by most producers. The chicken production system is characterized by low input-output ratio.

Birds are left to scavenge and are given minimal supplements. The hens kept for breeding in the county range between 20 and 80 on the maximum whereas the cocks are between 6 and 20. Most farmers in West Pokot replied that the supplements include home leftover wastes, grains that cannot be used for home consumption and anything they find irregularly. Under such management condition village chicken lay 8-40 eggs before brooding. This figure is very low when compared to the production potential of 52 per laying cycle which is 250 eggs per annum. This figure (local chicken's egg productivity) can be improved to 300 eggs per annum per bird and ten clutches per annum under semi intensive management system.

Ready market for chicken produce is a major reason why residents in West Pokot have ventured in chicken farming. Chicken are also a source of food in addition, village chicken owners sell their chicken and eggs to purchase food, cover school fees and to also adjust flock size. The business of rearing chicken is cost-sensitive. Feed, the major factor militating against the chicken industry, hampers production on the basis of high cost. Chicken farmers are therefore subjected to low returns. There is ready market for chicken products the four sub-counties readily absorb all the chicken supplied. Local traders are the main buyers of chicken products in the county. Others include external traders, travelers, schools and hotels.

1.4 Current Market Situation

The majority of internal traders are male while a few were female. The number of traders in the sub-locations was established ranges from 3 to of 10 traders. However in West Pokot sub-county noted that there are a maximum of 100 traders per sub-location and 43 traders on average. The suppliers of chicken are basically local farmers, however middlemen also assemble and transport them to internal traders. Under this situation, middlemen take the advantage of the situation and pay far lower prices to the chicken farmers. Internal traders are notified by farmers of the availability of chicken while some traders go looking for them. Further, SMS and Direct calls are also a major means of conveying information on the availability of chicken while some internal traders also rear chicken. Internal traders buy their chicken per chicken rather than per live weight. It is only in Pokot South sub-county where chicken was bought per chicken and also per live weight. This implies that the price of chicken remains constant irrespective of its weight. The buyers of the chicken mostly take the chicken to either Kitale, Eldoret, Lodwar or Nairobi. On average, the birds purchased by traders weigh between a kilogram and 3 kilograms.

External traders are basically male, majority of the traders in the county had traded for 5 to 10 years. This implies that the traders are skilled since they have a vast wealth of experience in chicken trade. There is however no association of traders in the County. West Pokot sub-county was the only sub-county with majority of association of traders while the rest had minimal association of traders.

1.5 Knowledge on availability of Chicken

Traders learnt about the availability of chicken from other traders. Also, a significant number of the traders learnt about the availability of chicken on their own while those from Pokot south sub-county learnt about the availability of chicken from livestock officials. External traders from North, West and Central sub-counties confirmed that they get enough for their needs. However, those from Pokot South denied that they get enough for their needs whenever they visit. Seasonal changes were the main reason why the external traders were unable to get enough for their needs. Specifically, during rainy seasons there is high risk of diseases leading to fluctuation in chicken supply. Also, low productivity by farmers has contributed to insufficient supply to external traders. The average number of birds handled per single visit ranged between 150 to 300 birds while the minimum number of birds per single visit was 40 to 80 birds leading to a relatively low turnover. Majority of the traders buy their chicken from individual farmers. As well, most of the external traders buy their chicken from internal traders with the least buying their chicken from groups.

1.6 Chicken Prices

Payment per unit for whole chicken ranges from ksh300 to ksh700. Cockerels are purchased for as low as ksh300 and pullets' price ranges from ksh100 to ksh500. Hen's price also ranges from ksh300 to 700. External traders reach their suppliers at stalls in the market. As well, in Pokot Central, traders reach their suppliers through phone communication. Further, there are strategic points in North and West sub-counties for conducting trade. The major source of information was basically SMS (Short Message Service) and radio communication. This is a clear indication that marketing of farmers' produce is done at individual level rather than as a group.

On average, internal traders purchase cockerels at an average price of Ksh400 to Ksh650. Hens are purchased at a price of Ksh250 to Ksh500 per hen. Internal traders sell their cocks for as high as ksh700 thereby making reasonable profit considering that they bought it at a price of ksh400 to 650. Hens are sold at least at ksh350 and at most at ksh550. Chicken farmers observed that the price of chicken products is not good since they have to struggle so as to earn profit from their sales. Low bargaining power and lack of organized market is a key contributor to poor chicken prices. In most cases, the birds not sold at the market are taken back home and sold at lower price. Most chicken farmers are price takers and price is set by negotiation of the parties that lead to increased bargaining power of the buyers.

The market for chicken products has been fluctuating due to a number of reasons. The presence of many chicken traders has contributed to the decline of chicken products as well as seasonal changes. Diseases have also had a role in the fluctuation of the market together with high prices of chicken produce.

1.7 Sufficiency of supply sources

The supply of chicken is evidently high in Pokot North and West Pokot sub-counties and relatively low in Pokot Central and South. Chicken supply is not consistent and in most of the cases, it has been fluctuating. There has

been an increase in chicken supply in only North, Central and West sub-counties. Further, the chicken supply in Pokot Central sub-county is steady to some extent. The production of local chicken needs to be carefully planned and managed to match the fluctuating supply of chicken. There are fluctuations in local chicken trade across the months of the year. The highest demand for local chickens coincided with the major social and religious festivals of the year. These are the Christmas and New Year season (December- January) and Easter season (April). On the other hand, January to May and March to August were reported to have the lowest demand for local chickens.

1.8 Challenges faced by External Traders

External traders are mainly affected by diseases and death of chicken during transportation. The traders incur high transportation cost especially in North (100%) and Central sub-counties. Cages are minimal and they are hardly ever cleaned or disinfected. Also, organized marketing of free-range rural chicken is difficult because of small size of the output per household generated at irregular intervals leading to fluctuation of chicken supply. Insecurity in the county is also a challenge for the traders who lack an open market. They also incur taxation costs which reduces their profit margin.

1.9 Ways and means to improve trade in Chicken

The ways and means to improve trade in include improving on the transportation modes of chickens. There is also need to rationalize middlemen and form co-operatives in order to market local chickens and cut down the transport costs. Local chicken farmers need to be trained and encouraged to learn skills which could increase their credibility in chicken trade. Traders need to be offered with loans and a processing plant needs to be established so as to improve on the chicken trade.

4. Projected cost of poultry production and management of the abattoir

The projected cost of poultry production across the County, covering all the 28,000 farmers, is estimated at Ksh. 71,921,187 in year one rising to Ksh. 281,884,947 in year five. The net profit for the same period is projected to be Ksh. 32,024,704 and Ksh. 153,301,820 respectively (Annex 1). Feed production or manufacturing is a mandatory component of poultry production and shall run parallel to the poultry enterprise. In the first year of feed production a net profit of Ksh. 7,908,855 could be realized, this should rise to Ksh. 20,400,190 in the fifth year. Construction and equipping the abattoir is estimated to cost Ksh. 60 million. Its operation is expected to raise Ksh. 349,794 in the first year owing to huge capital investments in infrastructure and equipment. The situation is set to change dramatically in the fifth year of operation when a net gain of Ksh. 18,262,278 is projected. By the fifth year, poultry production, processing and product marketing are expected to have attained a progressive equilibrium inching closer to accelerated growth and eventual sustainability.

5. Key Observations

Arising from discussions with different categories of the poultry value chain stakeholders, the Team made the following observations on the feasibility of West Pokot County Poultry Abattoir.

1. Poultry producers in the context of the County are farmers who keep poultry for food and commerce and at any time have at least 30 chickens in their household. Thus it is necessary to list the names of all poultry farmers based on these criteria.

2. All sub-counties are involved in poultry production but the population in each needs to be established. The distribution of poultry producers in the County makes it easier to convince stakeholders to see the need for a poultry abattoir and its possible impacts on the entire County.
3. There are 28,000 households in the County each keeping an average of 30 chickens. In a few instances, the number rises to 200 per household.
4. The production system is mainly free range with limited home-made or commercial feed supplementation.
5. Poultry production is mainly a pre-occupation of women; the youth play a role in produce aggregation and marketing which in many instances is just brokerage or "middle man intervention".
6. Poultry was noted to be a stepping stone to other enterprises e.g. cattle production. It is not the number 1 priority for most farmers. Cattle; sheep and goats appear to be more important.
7. Current population of chickens is estimated at 1.73 million in the entire County but this number can increase ten-fold.
8. The predominant breed of chicken is the local or indigenous breed. There is need to keep Kenbro and Kuroiler breeds in order to satisfy processing or abattoir demands.
9. It was observed that eggs for hatching are inadequate.
10. Currently, minimum poultry meat inspection takes place in the County; this is a definite public health risk. Poultry welfare is hardly adhered to at the farm, in transportation, at the market and during slaughter.

6. Recommendations

From the foregoing observations, the most appropriate business model for the West Pokot Poultry Abattoir needs to take into consideration the following:

- e) There must be a significant net profit to producers to ensure supply of adequate quality poultry.
- f) As a stand-alone enterprise, poultry population per household must be at least 300. This is arrived at on the basis of production costs that are at least 300 Kenya shillings per bird in 6 months or 50 Ksh per month ($300/= \div 6$) and 1.60 Ksh per day ($50/= \div 30$ days). Thus by selling at least 50 birds per month at 500/= each, producers will make a profit of $(50 \times 500/=)$ minus cost of production $(50 \text{ birds} \times 50/=)$ or 22,500/=. This works out at 750/= per day ($22,500 \div 30$). For an average household of 7 members, each is able to get 107/= or 1 dollar per day which marks a departure from poverty.
- g) For the viability of the abattoir, in the first year, at least 800 households need to keep 300 chickens each. This will support continuous processing and a constant supply of products to destination markets.
5. For greater profitability of the poultry production enterprise, the recommended business model is one where producers manage the processing node through a cooperative society in which they buy shares and apportion bonuses and dividends based on poultry deliveries and shares. This model boosts producer income and ensures sustainability of the enterprise.

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6. It is also possible to place the abattoir under a private investor but farmers will miss out on the product profits which tend to be higher than production earnings due to value addition. Depression of the farmers' income has the potential of stagnating or reversing production in the long run. This will jeopardize viability of the abattoir.
 7. The County Government may want to manage the abattoir but past experience with county council abattoirs proved that the government often displays a high level of inefficiency in running such businesses. Funding of essential inputs like water, electricity and disinfectant supply is never prioritized leading to persistence of unhygienic conditions and possible closure of the abattoir by the regulator.
 8. There is an urgent need to strengthen the existing West Pokot Poultry Cooperative by creating awareness of its existence among all poultry producers in the County and convincing them to be members based on demonstrated benefits that may include subsidized inputs especially feeds due to economies of scale, marketing of produce and improved earnings arising from bonuses and dividends.
 9. In the preliminary stages (first 5 years) of the Poultry abattoir, the County Government will need to provide at least one carrier (canter lorry) per sub-county, establish and maintain aggregation centres in the sub-counties and provide free or subsidized veterinary care (vaccinations).
 10. The design of the abattoir should provide for the following future considerations:
 - e) Up-grading of processing capacity from 5,000 birds to say, 15,000 birds per day;
 - f) Up-grading to export standard;
 - g) Slaughter of different species of birds e.g. turkeys, ducks and geese, this can be done through established separate lines or the same line but at different times. Never shall different species be mixed. People's preferences are different and food allergies can arise.
 - h) Expansion or introduction of equipment to carry out further value addition including making of sausages and other high value poultry products.
 11. Possible markets for the poultry products are the current destinations of live chickens bought from the County namely Western Kenya, Trans-Nzoia, Uasin-Gishu and the Central Rift Valley counties alongside Nairobi City County. However there is need to conduct further research to determine other markets and needs of consumers.
 12. The abattoir, which is estimated to cost Ksh. 60 million, should be in place as soon as funds and associated factors allow. It is envisaged that it will act as a strong stimulant to production since farmers will want to take advantage of the ready market for their chickens.

7. Conclusions

1. Based on the preceding observations and assuming that the stated recommendations are positively considered, it is concluded that the proposed West Pokot County Poultry Abattoir is a viable enterprise so long as its location satisfies the following demands:

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- f) Legal veterinary requirements regarding abattoir locations are met (Annex 2);
 - g) Location is easily accessible to most or all users;
 - h) Water and electricity supply is constant and adequate;
 - i) The location is agreed upon by all sub-counties and
 - j) The location is large enough, more than 5 acres, to allow for future up-grading to export standard.
2. The abattoir will enable regular inspection of all slaughtered poultry thus promoting public health and contributing to the realization of food of "acceptable quality" as provided for in the country's Constitution. Poultry welfare will equally get a boost.

Annex 1

Budget estimates for the West Pokot County Poultry abattoir and associated practices

INCOME STATEMENT		Year 1	Year 2	Year 3	Year 4	Year 5
Chick Production						
Revenue						
Income from sale of chicks		26,761,372	42,554,150	59,697,385	80,284,195	104,887,422
Total income		26,761,372	42,554,150	59,697,385	80,284,195	104,887,422
Cost of production						
Cost of eggs		7,298,556	10,875,822	15,193,523	20,376,337	26,568,027
Cost of utilities		5,473,917	8,156,866	11,395,142	15,282,253	19,926,020
Cost of vaccination		1,277,247	1,903,269	2,658,866	3,565,859	4,649,405
Cost of feeds		182,464	271,896 3	79,838	509,408	664,201
Total cost of production		14,232,184	21,207,852	29,627,369	39,733,858	51,807,652
Gross margin		12,529,188	21,346,298	30,070,015	40,550,337	53,079,770
Operating costs						
Staff costs		3,552,000	4,884,000	6,446,880	8,273,496	10,400,966
Land lease cost		720,000	990,000	1,306,800	1,677,060	2,108,304
Administrative expenses		720,000 9	90,000	1,306,800	1,677,060	2,108,304
Marketing		960,000	1,320,000	1,742,400	2,236,080	2,811,072
Total operating cost		5,952,000	8,184,000	10,802,880	13,863,696	17,428,646
EBITDA		6,577,188	13,162,298	19,267,135	26,686,641	35,651,123
Depreciation and amortization		650,000	777,500	914,438	1,062,058	1,221,696
EBIT		5,927,188	12,384,798	18,352,698	25,624,583	34,429,428
Interest expenses		2,159,206	2,596,464	2,618,370	2,618,370	2,618,370
Earnings before taxes		3,767,982 9	,788,333	15,734,328	23,006,213	31,811,057
Taxes		1,130,394	2,936,500	4,720,298	6,901,864	9,543,317
Net surplus/(deficit)		2,637,587	6,851,833	11,014,029	16,104,349	22,267,740
Return on investment		17.8%	36.3%	47.2%	57.0%	66.1%
Return on assets		12.1%	25.6%	28.9%	30.1%	29.7%
Return on equity		16.9%	34.6%	37.4%	37.5%	35.8%

INCOME STATEMENT cont...					
Chicken Production	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue Income from sale of live birds	71,160,921	215,627,079	311,437,308	426,800,032	564,988,966
Income from by-products	7,116,092	21,562,708	31,143,731	42,680,003	56,498,897
Total income	78,277,013	237,189,787	342,581,039	469,480,035	621,487,862
Cost of production Cost per chick	26,761,372	42,554,150	59,697,385	80,284,195	104,887,422
Feeds per chicken (50%)	37,934,245	60,320,507	84,621,043	113,802,846	148,677,921
Medicine per chicken	3,211,365	5,106,498	7,163,686	9,634,103	12,586,491
Other costs of production	4,014,206	6,383,122	8,954,608	12,042,629	15,733,113
Total cost of production	71,921,187	114,364,277	160,436,721	215,763,774	281,884,947
Gross margin	6,355,826	122,825,509	182,144,317	253,716,262	339,602,915
Operating costs Staff costs	13,260,000	23,790,000	30,615,000	37,700,000	44,850,000
Administrative expenses	6,203,773	10,958,539	14,133,624	17,407,508	20,782,537
Land opportunity cost	5,100,000	10,065,000	14,247,750	19,299,500	25,255,725
Marketing	3,101,886	5,479,269	7,066,812	8,703,754	10,391,269
Total operating cost	27,665,659	50,292,808	66,063,187	83,110,762	101,279,531
EBITDA	(21,309,833)	72,532,702	116,081,131	170,605,500	238,323,384
Depreciation and amortization	2,400,000	3,180,000	3,996,375	4,857,319	5,771,291
EBIT	(23,709,833)	69,352,702	112,084,756	165,748,181	232,552,093
Interest expenses	8,314,871	13,549,493	13,549,493	13,549,493	13,549,493
Earnings before taxes	(32,024,704)	55,803,208	98,535,262	152,198,688	219,002,600
Taxes	–	16,740,962	29,560,579	45,659,606	65,700,780
Net surplus/(deficit)	(32,024,704)	39,062,246	68,974,684	106,539,082	153,301,820
Return on investment	-66.7%	57.6%	77.0%	93.8%	109.6%
Return on assets	-42.2%	31.7%	34.2%	27.8%	24.1%
Return on equity	-74.9%	47.8%	45.7%	41.4% 3	7.3%

INCOME STATEMENT cont...					
Feed Production	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue Sale of feeds	49,265,253	66,737,996	84,757,255	103,336,045	122,487,659
Total income	49,265,253	66,737,996	84,757,255	103,336,045	122,487,659
Cost of production					
Cost of production	26,274,802	35,593,598	45,203,869	55,112,557	65,326,751
Total cost of production	26,274,802	35,593,598	45,203,869	55,112,557	65,326,751
Gross margin	22,990,451	31,144,398	39,553,386	48,223,488	7,160,908
Operating costs Staff costs	5,520,000	9,108,000	10,018,800	14,694,240	16,163,664
Administrative expenses	2,627,480	3,559,360	4,520,387	5,511,256	6,532,675
Marketing	1,313,740	1,779,680	2,260,193	2,755,628	3,266,338
Total operating cost	9,461,220	14,447,040	16,799,380	22,961,124	25,962,677
EBITDA	13,529,231	16,697,358	22,754,005	25,262,364	31,198,231
Depreciation and amortization	1,200,000	800,000	715,000	1,039,550	930,521
EBIT	12,329,231	15,897,358	22,039,005	24,222,814	30,267,710
Interest expenses	1,030,867	1,124,582	1,124,582	1,124,582	1,124,582
Earnings before taxes	11,298,364	14,772,776	20,914,423	23,098,232	29,143,128
Taxes	3,389,509	4,431,833	6,274,327	6,929,470	8,742,938
Net surplus/(deficit)	7,908,855	10,340,944	14,640,096	16,168,762	20,400,190
Return on Investment	93.0%	78.5%	111.1%	85.9%	108.3%
Return on assets	37.8%	38.3%	35.4%	27.5%	25.8%
Return on equity	56.0%	53.6%	46.1%	34.3%	31.2%

INCOME STATEMENT cont...					
	Year 1	Year 2	Year 3	Year 4	Year 5
Slaughterhouse and Packaging Plant					
Revenue Whole chicken	26,898,828	81,507,036	117,723,302	161,330,412	213,565,829
Chicken pieces	10,183,128	30,856,235	44,566,679	61,075,085	80,849,921
By-products	426,966	1,293,762	1,868,624	2,560,800	3,389,934
Total income	37,508,921	113,657,033	164,158,605	224,966,297	297,805,684
Cost of production					
Cost of chicken	27,369,585	82,933,492	119,783,580	164,153,858	217,303,448
Transport	547,392	1,658,670	2,395,672	3,283,077	4,346,069
Slaughtering	1,094,783	3,317,340	4,791,343	6,566,154	8,692,138
Packaging	547,392	1,658,670	2,395,672	3,283,077	4,346,069
Other processing costs	547,392	1,658,670	2,395,672	3,283,077	4,346,069
Total cost of production	30,106,544	91,226,841	131,761,938	180,569,244	239,033,793
Gross margin	7,402,378	22,430,192	32,396,667	44,397,053	58,771,891
Operating costs Staff costs	2,150,000	5,676,000	8,845,100	13,735,920	15,109,512
Administrative expenses	350,000	924,000	1,439,900	2,236,080	2,459,688
Marketing	250,000	660,000	1,028,500	1,597,200	1,756,920
Total operating cost	2,750,000	7,260,000	11,313,500	17,569,200	19,326,120
EBITDA	4,652,378	15,170,192	21,083,167	26,827,853	39,445,771
Depreciation and amortization	2,250,000	2,006,250	4,514,531	4,031,238	3,606,331
EBIT	2,402,378	13,163,942	16,568,636	22,796,614	35,839,439
Interest expenses	1,902,672	5,708,015	7,004,369	9,750,470	9,750,470
Earnings before taxes	499,706	7,455,927	9,564,267	13,046,144	26,088,969
Taxes	149,912	2,236,778	2,869,280	3,913,843	7,826,691
Net surplus/(deficit)	349,794	5,219,149	6,694,987	9,132,301	18,262,278
Return on Investment	0.9%	13.0%	8.2%	11.2%	22.3%
Return on assets	0.8%	9.6%	7.9%	7.9%	13.1%
Return on equity	1.1%	15.1%	13.0%	12.9%	21.7%

Annex 2

Abattoir site accessibility and construction (Meat Control Act, Cap. 356)

1. An abattoir or slaughterhouse shall be located in an area which is reasonably free from objectionable odors, smoke and dust. Adequate dust-proof access-ways connecting the slaughterhouse with public roads shall be available. The slaughterhouse must be completely separated from any other buildings used for industrial, commercial, agricultural, residential or other purposes.
2. Drawings and specifications for the construction and alterations of slaughterhouses shall be furnished to the Director of Veterinary Services or his appointed representative for approval prior to making an application for construction and operation of the slaughterhouse. The drawings shall have specifications and consist of floor plans showing the location of features including principal pieces of equipment, floor drains, principal drainage lines, and hand washing basins and hose connections. Further, the drawings and specifications shall show roof plans elevations, cross and longitudinal sections of the various buildings showing such features as windows, principal pieces of equipment, heights of ceilings, rails and character of floors and ceilings. A plot plan showing features including the limits of the slaughterhouse premises, locations in outline of buildings on the premises, cardinal points of the compass and railways serving the slaughterhouse, all properly drawn in scale shall also be submitted together with the drawings shall be submitted a plan of the proposed functioning (project proposal) of the slaughterhouse indicating the category and features including estimated throughput, capacity and quality of water supply, power and heating arrangements, storage, chilling and freezing capacity, distribution systems, drainage and sewage system for disposal of inedible and condemned carcasses and meat.
3. If a retail business is carried on within the official premises of a slaughterhouse, customers shall have access only to the room or rooms where such business is conducted and shall be excluded from accessing the rest of the slaughterhouse.
4. A slaughterhouse shall have:
 - a. Properly built and drained lairages erected not less than ten meters from the slaughterhouse and equipped with adequate facilities for ante-mortem inspection and special lairage for suspect animals;
 - b. Fenced cattle races from the lairages to the slaughterhouse, properly drained and in a suitable place equipped with facilities for washing the animals;
 - c. A distribution room of adequate size;
 - d. A separate room for the cleaning and treatment of intestines and stomachs;
 - e. A separate room for the storage, disposal and treatment of inedible and condemned animals, carcass and meat;
 - f. Materials used shall be impervious, easily cleaned and resistant to wear and corrosion;
 - g. Floors shall be constructed of dense, acid-resistant, waterproof concrete and have a wood float finish;
 - h. Walls shall be smooth and flat and made of smooth-surfaced Portland cement plaster or other non-toxic, non-absorbent material applied to a suitable base and walls shall be provided with sanitary bumpers to prevent damage by movable and other equipment;

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- i. Coves with sufficient radii to promote good sanitation shall be installed at the juncture of floors and walls in all rooms;
 - j. Ceilings shall be of good height and, as far as structural conditions permit, be smooth and flat and be constructed of Portland cement plaster or other acceptable impervious material. If the ceiling has exposed hoists, these must be at least sixty centimeter on centre and be designed so that they are easy to keep clean;
 - k. Window-sills shall be at least one hundred and fifty centimeters from the floor and be sloped forty five degrees;
 - l. Doorways must be at least one hundred and fifty centimeters wide and the doors must be made of rust-resistant metal having tight soldered or welded seams. Door jambs shall be covered with rust-resistant metal;
 - m. All windows, doorways and other openings that would admit insects shall be equipped with effective insect and rodent screens;
 - n. Dressed timber shall be used for all exposed interior wood work, and it shall painted with a good non-toxic oil or plastic base paint, treated with linseed oil or with a clean wood sealer;
 - o. All parts of floors where wet operations are conducted shall be well drained, with at least one drainage inlet provided for each thirty five square meters of floor space. The inlets shall be placed under the dressing rails if necessary together with drainage valleys, not less than seven decimal five centimeters wide, with a slope of the floor towards drainage valleys or inlets of at least two decimal five centimeters per meter;
 - p. Drains for pouch and stomach contents shall be at least twenty centimeters in diameter;
 - q. The waste disposal system must be of adequate size and must comply with general and local regulations;
 - r. Arrangements for the safe disposal of pouch contents, lairage manure, blood and condemned carcasses and meat must be made and drawings and specifications must indicate how this will be accomplished.

Annex 3

Feasibility Study Team

1. Ms. Maren Amoko – Partnership specialist ASDSP, National Programme Secretariat (NPS)
2. Mr. James Tendwa – State Department of Livestock (SDL) and former Managing Commissioner of KMC;
3. Dr. Charles Ochodo – State Department of Livestock (SDL) (Veterinary)
4. Mr. Kennedy Ochieng' – Value Chain Development Officer, Bungoma County which runs a modern poultry abattoir;
5. Mr. Peter Owoko – ASDSP County Coordinator, West Pokot County
6. Mr. Victor Namboka – Value Chain Development Officer, West Pokot County



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COUNTY GOVERNMENTS