



**TEGEMEO INSTITUTE OF AGRICULTURAL  
POLICY AND DEVELOPMENT**

**IMPROVING PARTICIPATION IN AGRICULTURAL COMMODITY  
MARKETS: ASSESSING GROWTH OPPORTUNITIES FOR  
WOMEN IN THE INDIGENOUS CHICKEN VALUE CHAIN  
IN BOMET AND MWALA DISTRICTS**

**Lilian Kiriimi, John Olwande, Mary Mathenge, Judith Oduol,  
Dagmar Mithöfer, and Frank Place\***

**October 2013**

---

\*Lilian Kiriimi, John Olwande and Mary Mathenge: Tegemeo Institute, Egerton University  
Judith Oduol and Frank Place: World Agroforestry Centre (ICRAF)  
Dagmar Mithöfer : Rhine Waal University of Applied Sciences, Germany

## **EXECUTIVE SUMMARY**

Agricultural growth is expected to lead to broader economic growth and successful poverty reduction, because of high concentration of the poor in this sector, its strong growth linkages with other sectors and its potential to offer low food prices to the urban poor. For agriculture to achieve this broad-based growth, it will require some form of transformation out of the semi-subsistence production systems that currently characterize much of rural Africa, to a more commercialized agriculture. However, commercialization depends on location level factors that influence participation at a meso or community scale as well as household level factors that influence participation across households within a given location.

It is widely recognized that well-functioning input and product markets provide important opportunities for income generation and wealth creation and are, therefore, key in transforming subsistence production among the smallholder farmers, poor and landless households, as well as those living in marginal areas. However, such markets in developing countries tend to be missing or disorganized. In addition, participation of smallholder farmers and other marginalized groups in markets for inputs, products and services is often constrained by several factors. Hence, it is important to understand the constraints to market participation and the types of interventions that can overcome these constraints in order to unlock opportunities for involvement along a value chain.

The aim of this study was to conduct a detailed analysis of the indigenous chicken value chain in order to assess growth opportunities that would improve participation and integration of women to markets. The study builds on findings from an earlier phase carried out as a joint collaboration between Tegemeo Institute, Egerton University, World Agro-forestry centre (ICRAF) and Makerere University on “Participation in Agricultural Commodity Markets among the Poor and Marginalized in Kenya and Uganda” with support from the FORD Foundation. The earlier study identified promising enterprises for the marginalized groups (women, the income poor and those in marginal agricultural areas) based on the importance of market participation in these enterprises for the respective groups and/or growing trends in market participation by the groups relative to other enterprises. With regards to livestock marketing, results showed an increasing importance of chicken among women and the poor. The study concluded that targeting indigenous chicken among other livestock could be important in efforts aimed at increasing market participation among women and the poor. However, the earlier study focused on household level data and did not look into other aspects of the enterprises, notably the functioning of markets and value chains. The current study goes further to identify critical challenges and assess growth opportunities in the indigenous chicken value chain, which could be exploited in improving market access and participation by women.

The study was undertaken in two sites: Mwala Division, in Mwala district, Machakos County and Longisa Division in Bomet district, Bomet County. The study adopted a value chain approach. A sample of 100 households that kept indigenous chicken was selected for the study. Two focus group discussions were held and interviews conducted with two farmer groups in the areas of study and with various actors along the indigenous chicken value chain, as well as key informants such as government officials.

Results of the study showed that although indigenous poultry is a common enterprise in the study areas, women were involved only at the lower ends of the value chain i.e., sourcing for breeding stock, production (management of the enterprise), farm-gate sales, and sales in the local markets but to a very limited extent. At the household level, women undertook most of the production activities and in 80 percent of the cases they were responsible for the management of the poultry enterprise. In addition, women were involved in decision-making regarding sale of chicken and use of revenue from sales. In female-headed households, these decisions were predominantly made by women, while in male-headed households joint decision-making by both men and women was more prevalent.

Findings indicated that indigenous poultry production is not commercially oriented, with the contribution to household income being minimal. This is mainly due to a weak production node of the chain, which is characterized by small flock sizes reared in a low-input free range production system. Other constraints at the production level include high disease incidence and chicken mortality; high cost of feeds; limited supplementary feeding; predation due to lack of proper housing structures; little or no bargaining power for producers, hence low producer prices; and, high cost of transport to markets. The major constraints identified among traders include: poultry disease outbreaks which affect supply of birds; high transport costs due to poor road infrastructure and long travels; inconsistent and low supplies due to small flock sizes; and, lack of capital or affordable credit services to expand business.

Despite the aforementioned constraints, there are opportunities which were identified and that have the potential to enhance integration of women into the indigenous chicken value chain. First, there is growing demand and preference for indigenous chicken due to changing dietary habits that are driven by the need to have healthy diets. Smallholders and particularly women could tap into the growing market to increase production and sales. Since women are predominantly found at the production node of the chain, unlocking their potential to participate in markets will necessitate focusing on enhancing production to tap into the growing demand. This will entail putting more investment into management of birds by implementing a semi-intensive system of production characterized by appropriate bio-security measures to prevent introduction and spread of diseases; supplementary feeding; and, proper housing to minimize predation. Second, there is support by government and development partners mainly through training and construction of model chicken housing units. The trainings on production and

marketing of indigenous chicken provide prospects for improving farmer poultry management skills especially on detecting symptoms/signs and prevention methods of the poultry diseases. The Kenya Poultry Farmers Association (KEPOFA) is also actively involved in capacity building for poultry farmers. Also, there is sensitization on supplementary feeds from regular trainings that should help farmers in preparing supplementary poultry feeds using locally available products and hence lead to a reduction in cost of feeds. All these efforts will improve bio-security and increase production and profitability of the chicken enterprise. Third, collective action already exists among producers, which can be tapped into to promote collective marketing of chicken. Farmers are members of groups which are fairly active in other activities, but are weak in collective marketing. Producers can be encouraged to participate in collective action in order to improve their bargaining power to negotiate for better terms in the market. Collective action will facilitate collective marketing, assembly of indigenous chicken by traders, and provision of affordable loans from financial institutions, where it may be more difficult for producers to obtain credit individually due to lack of collateral. Farmers can also work in groups to start hatcheries for the provision of breeding stock; invest in alternative brooding technology to overcome the challenge of predation; pool resources for vaccines to make treatment cost effective; access inputs in a more cost effective manner; formulate their own feeds using locally available materials; and access markets that require a sizeable stock through scheduled production. Fourth, there is potential for value addition. This may be in terms of slaughtering and dressing especially for urban consumers, who are likely to pay a premium for the convenience associated with these services, thus providing business opportunities to expand existing services or start new ones. Fifth, women can grow local crops to sell to millers for manufacturing of alternative “kienyeji” supplementary feeds or using local knowledge and materials, participate in production and marketing of such feeds as a business. Finally, women can participate in production and marketing of organic manure, which can boost their incomes from sale of chicken and eggs.

## ACKNOWLEDGEMENT

Tegemeo Institute and the authors would like to thank everyone who contributed to the preparation of this report and completion of the entire study on *Improving Participation in Agricultural Markets for Smallholder Farmers in Kenya: Assessing Growth Opportunities for Marginalized Groups*. We acknowledge the partnership between researchers from the Institute and the World Agroforestry Centre (ICRAF) whose collaborative effort resulted in the successful completion of the project. We appreciate the support from the FORD Foundation and the United States Agency for International Development (USAID) to carry out the study. We acknowledge technical contributions from other Tegemeo and ICRAF colleagues during the study design, data collection, analysis and report writing, and support during preparation of the dissemination workshop. In addition, we appreciate the valuable contribution from various stakeholders who provided the data and also participated in the workshop, including farmers and other actors along the selected value chains. We would also like to acknowledge cooperation and support accorded to us by the administration of Egerton University, without which the completion of this study would have been difficult.

Lilian Kirimi, John Olwande, Mary Mathenge, Judith Oduol, Dagmar Mithöfer, and Frank Place prepared this report on behalf of Tegemeo Institute and ICRAF. The opinions expressed in this document are the authors' and do not necessarily represent the views of the two institutions or those of the Ford Foundation. Any enquiries should be channeled through:

The Executive Director,  
Tegemeo Institute, Egerton University,  
Kindaruma Lane, off Ngong Road,  
P.O Box 20498-00200,  
Nairobi- Kenya  
Tel: +254-02- 2347297/ 3504316  
Email: [egerton@tegemeo.org](mailto:egerton@tegemeo.org)  
Website: [www.tegemeo.org](http://www.tegemeo.org)

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	i
ACKNOWLEDGEMENT .....	i
TABLE OF CONTENTS .....	i
1 INTRODUCTION .....	1
1.1 Background.....	1
1.2 Objectives of the study.....	2
1.3 An overview of the indigenous chicken value chain in Kenya .....	3
2 METHODOLOGY .....	2
2.1 Area of study .....	2
2.2 Sampling.....	3
2.2.1 Household sampling.....	3
2.2.2 Sampling for focus group discussions .....	3
2.2.3 Sampling for case studies.....	4
2.2.4 Sampling for other chain actors.....	4
2.3 Data collection and analysis .....	4
3 INDIGENOUS CHICKEN VALUE CHAIN .....	5
3.1 Value chain map .....	5
3.2 Input suppliers .....	5
3.3 Producers.....	8
3.3.1 Importance of indigenous chicken as an agricultural enterprise in areas of study ....	8
3.3.2 Characteristics of indigenous chicken producers .....	10
3.3.3 Farm production and marketing patterns .....	13
3.3.4 Constraints and opportunities at the producer level.....	18
3.4 Small traders/primary brokers .....	20
3.5 Local market traders.....	21
3.6 Road side traders.....	21
3.7 Secondary brokers.....	22
3.8 Large assemblers.....	22
3.9 Hotels .....	22

3.10	Consumers .....	22
3.11	Support services.....	23
3.12	Indigenous chicken pricing and marketing margins .....	23
3.13	Marketing challenges and opportunities .....	27
3.14	Women’s participation in the indigenous chicken value chain .....	29
4	MARKET INNOVATIONS ALONG THE VALUE CHAIN.....	31
4.1	Collective Action .....	31
4.1.1	Case Studies on Collective Action.....	32
4.2	Financial services.....	33
4.3	Information and Communication Technology .....	34
5	CONCLUSION AND RECOMMENDATIONS .....	35
	REFERENCES .....	37
	ANNEX: SUMMARY OF CASE STUDIES.....	39

## LIST OF TABLES

Table 1: Distribution of poultry production in Kenya by province and type of poultry.....	1
Table 2: Household income by gender of household head .....	10
Table 3: Persons responsible for chicken production by gender of household head .....	11
Table 4: Demographic characteristics of persons responsible for chicken production.....	12
Table 5: Production activities of indigenous chicken by gender of household member .....	12
Table 6: Chicken production and sales by gender of person responsible .....	13
Table 7: Chicken production and sales by gender of person responsible and household head .	14
Table 8: Persons responsible for sales decision on chicken by gender of household head.....	14
Table 9: Persons controlling revenue from chicken by gender of household head .....	15
Table 10: Persons controlling revenue where women are responsible for production .....	15
Table 11: Buyers of chicken by gender of person responsible and household head .....	16
Table 12: Reasons for choice of different buyers by chicken producers .....	17
Table 13: Constraints facing indigenous chicken producers.....	19
Table 14: Producer cost of production, revenue, and gross margin (N=200) .....	24
Table 15: Costs and margins per chicken along the value chain in Mwala District.....	25
Table 16: Costs and margins per chicken along the value chain in Bomet District .....	26
Table 17: Marketing constraints faced by indigenous chicken producers .....	28
Table 18: Women’s participation in indigenous chicken value chain .....	29
Table 18: Women’s participation in indigenous chicken value chain (cont.) .....	30
Table 19: Participation in groups by chicken producers .....	31
Table 20: Enterprises and activities by groups .....	32
Table 21: Services received from the groups by type of group.....	32
Table 22: Sources of credit for chicken producers .....	34



## LIST OF FIGURES

Figure 1: Bomet indigenous chicken value chain map .....	6
Figure 2: Mwala indigenous chicken value chain map .....	7
Figure 3: Frequency of buyers of chicken by gender of person responsible for production.....	16
Figure 4: Producer gross margin per chicken by buyer type in Mwala District.....	24
Figure 5: Producer gross margin per chicken by buyer type in Bomet District .....	25
Figure 6: Share of marketing cost components for small and large traders in Mwala and .....	27

# **1 INTRODUCTION**

## **1.1 Background**

Agricultural growth, especially in the early phases of development, is fundamental to broader economic growth and to successful poverty reduction. This is because of high concentration of the poor in this sector; its strong growth linkages with other sectors and its potential to offer low food prices to the urban poor (DFID, 2005). For agriculture to achieve this broad-based growth, it will require some form of transformation out of the semi-subsistence production systems that currently characterize much of rural Africa to a more commercialized agriculture (Morris et al. 2009). However, market participation depends on location level factors that tend to influence participation at a meso or community scale as well as household level factors that influence participation across households within a given location (Barrett, 2008).

It is widely recognized that well-functioning input and product markets provide important opportunities for income generation and wealth creation and are, therefore, key in transforming subsistence production among the smallholder farmers, poor and landless households, as well as those living in marginal areas. However, such markets in developing countries tend to be missing or disorganized. In addition, participation of smallholder farmers and other marginalized groups markets for inputs, products and services is often constrained by several factors. Hence, it is important to understand the constraints to market participation and the types of interventions that can overcome these constraints in order to unlock opportunities for involvement along a value chain. Identifying specific agricultural value chains as well as interventions that could offer the best opportunities for sales, income, and poverty alleviation for marginal groups is a critical step in the process of making wise investments.

This study aims at conducting a detailed analysis of the indigenous chicken value chain in order to assess growth opportunities that would improve participation and integration of women to markets. The study builds on findings from an earlier phase carried out as a joint collaboration between Tegemeo Institute, Egerton University, World Agro-forestry centre (ICRAF) and Makerere University on “Participation in Agricultural Commodity Markets among the Poor and Marginalized in Kenya and Uganda” with support from the FORD Foundation. The earlier study identified promising enterprises for the marginalized groups (women, the income poor and those in remote/marginal agricultural areas) based on the importance of market participation in these enterprises for the respective groups and/or growing trends in market participation by the groups relative to other enterprises. With regards to livestock marketing, results showed an increasing importance of chicken among women and the poor. The study concluded that targeting indigenous chicken among other livestock could be important in efforts aimed at increasing market participation among women. However, the earlier study focused on household level data and did not look into other aspects of the enterprises, notably the functioning of markets and

value chains. The current study goes further to identify critical challenges and assess growth opportunities in the indigenous chicken value chain, which could be exploited in order to improve market access and participation by women.

Additionally, the results of the first phase showed that participation in several enterprise markets as well as the degree of overall commercial orientation by the marginalized groups was significantly and positively influenced by membership in farmer groups, access to credit and ownership of communication equipment, among other factors. Hence, the role of collective action and financial services will be further explored among the different participants along the chicken value chain.

The current study focuses on women as a marginalized group and for whom indigenous chicken may be a promising enterprise. Women are heavily engaged in the livestock sector and have a prominent role in managing poultry (FAO, 2011). However, women face a consistent gender gap in access to productive assets, inputs and services. Women in agriculture have less access than men to productive resources and opportunities with regard to land, livestock, labour, education, technology, extension and financial services (FAO, 2011). One potential intervention that can help close the gender gap is facilitating the participation of women in remunerative market and service opportunities along the indigenous poultry value chain, which can be turned into income earning opportunities for them. Empowering women to earn increased incomes from the various activities and services along the poultry value chain will have significant benefits for families and communities. For instance, money in the hands of women is associated with significant improvements in educational and nutritional outcomes for children (Pitt and Khandker, 1998; Pitt et al, 2003). While the role of women in small-scale indigenous poultry production is well recognized, there is need explore what business opportunities exist for them along the other nodes of the value chain and the extent of their involvement at the different nodes.

## **1.2 Objectives of the study**

The main objective of this report is an in-depth analysis of the indigenous chicken value chain with the aim of assessing growth opportunities that would improve participation and integration of women and households in marginal agricultural areas to markets along the value chain. Specifically, the study seeks to answer the following key questions:

- a. What are the existing marketing arrangements for the indigenous chicken enterprise, and what are their characteristics?
- b. What are the general constraints and opportunities that traders, processors and sellers have in the indigenous value chain?

- c. What are the specific constraints and opportunities that they perceive with regards to participation of smallholder farmers and marginalized groups?
- d. What are the growth prospects for the chicken enterprise – export, domestic urban, domestic rural and for marginal groups in this enterprise?
- e. What market related activities do farmer organizations/groups deal in, and what is the composition of members and their management and governance structures?
- f. What are the views of farmers on the usefulness of collective action in terms of establishing and maintaining the link to the market? What could be improved? What additional benefits are associated with participating in the groups? What are the costs (monetary and non-monetary) associated with participating in the groups' activities? What do buyers perceive as the positive aspects of farmer collective action?

### **1.3 An overview of the indigenous chicken value chain in Kenya**

The poultry industry in Kenya is becoming as an important livestock enterprise mainly in the rural areas where more than 70 percent of the population derives its livelihood from agriculture. The industry contributes about 55 percent to the livestock sector, 30 percent of the agricultural GDP, and 7.8 percent of the total GDP (MOLD, 2009). Poultry production is widespread in rural and peri-urban areas. Kenya has an estimated poultry population of 29 million birds. Seventy five (75) percent of these consist of indigenous chicken, 14 percent broilers, 8 percent layers, 1 percent breeding stock and 2 percent other poultry species (Table 1). The Kenyan poultry industry comprises of small- and large-scale poultry producers, operating under two main production systems: the indigenous poultry production and commercial hybrid poultry production systems (Okello et al, 2010). The indigenous poultry production is the main production system in Kenya. The birds are raised in a free range system where they scavenge for food during the day and occasionally receive commercial feed supplements. The commercial hybrid production system consists of layer and broiler subsystems, and relies on imported exotic parent and grandparent stock and is exclusively market oriented (Okello et al, 2010).

The annual poultry meat production is estimated to be 20 tonnes valued at KES 3.5 billion, while the annual egg production is 1.3 billion valued at KES 9.7 billion (GoK, 2010). Indigenous chicken produce about 55 percent and 47 percent of the total meat and eggs, respectively, in Kenya (King'ori et al, 2010).

**Table 1: Distribution of poultry production in Kenya by province and type of poultry**

<b>Province</b>	<b>Indigenous</b>	<b>Broilers</b>	<b>Layers</b>	<b>Others</b>	<b>Total</b>
<b>Nyanza</b>	5,682,740	96,570	230,920	46,840	6,057,070
<b>Rift Valley</b>	5,622,500	257,790	437,140	128,090	6,445,520
<b>Eastern</b>	3,864,760	112,640	164,950	22,860	4,165,210
<b>Western</b>	2,644,150	17,770	113,110	236,430	3,011,460
<b>Central</b>	1,967,180	1,437,270	1,084,950	49,070	4,538,470
<b>Coast</b>	1,947,060	637,320	230,000	94,240	2,908,620
<b>N/ Eastern</b>	165,000	200	300		165,500
<b>Nairobi</b>	141,400	1,607,800	188,100	10,000	1,947,300
<b>Total</b>	22, 034, 790	4,167,360	2,449,470	587,530	29,239,150

Source: MOLD, 2008.

Nearly 90% of rural households in Kenya rear indigenous poultry under the free range system, majority of which are indigenous chicken (Gichohi and Maina, 1992). Poultry keeping is attractive to many households including the poor, women, youth and the landless due to various reasons: low start-up capital and maintenance costs compared to crops and other larger livestock species; ability of indigenous birds to thrive under relatively harsh environments with minimal inputs, where they obtain most of their feed from scavenging and sometimes from kitchen and other household waste; low space requirements, which is important in the face of increasing landlessness occasioned by the high population growth; a source of income, food and manure; growing consumer preference for indigenous chicken meat due to health concerns (King'ori et al, 2010). However, production of indigenous chicken is characterized by low productivity and the poultry sector is constrained by: overall sector disorganization; a weak feed industry characterized by high-cost and poor-quality feed; a lack of ready market access and information systems for smallholder producers; increased sanitary and phytosanitary requirements to minimize risk of introducing disease pathogens and increase food safety credibility, against a backdrop of farmers' limited capacity for early detection and rapid containment of avian diseases; poor adoption of economies of scale principles (there is limited integration while production is subsistence, small-scale and inconsistent); high production and marketing costs; inadequate processing and marketing infrastructure; low producer prices versus high consumer prices; and limited outreach to smallholder farmers, particularly women (Kirimi and Olwande, 2010).

In sub-Saharan Africa, indigenous poultry is mainly owned and managed by women and children and is particularly important for female-headed households (Dessie, 1996; Ahlers et al, 2009). In Kenya, there is potential for increasing production and productivity of indigenous chicken despite the numerous challenges facing the poultry subsector. This can be achieved through

promotion of sound management practices such as appropriate housing, disease control, improved nutrition and genetics (Okitoi and Mukisira, 2001; King'ori et al, 2007). Hence, promotion of indigenous chicken production and participation in other parts of the value chain can be a powerful avenue for empowering women, children, female-headed households, and may be the youth.

The marketing system for indigenous birds in Kenya is not well organized described as unorganized, weak and indeterminate (Munyasi et al, 2009). Often, many farmers do not assess market conditions before embarking on production, a scenario that may partly explain why production is still low despite the existence of an unmet demand for poultry meat, which is estimated at 12.4 kg per adult equivalent in the urban areas (Gamba et al, 2005) and projected to grow to 29,600 MT by 2014 (Muthee, 2006). It would be expected that with properly functioning markets, farmers should scale up production and therefore supply to reflect market trends (Mailu, et al 2012)

This report is organized as follows: section two presents the methodology of the study, which includes information on study areas, sampling procedure and data analysis. Section 3 presents the value chain analysis, which focuses on the various actors and their characteristics, constraints and opportunities faced by the actors along the chain, and women's level of participation along the chain. Section 4 discusses collective action among indigenous chicken producers. Strengths, weaknesses, opportunities and threats identified in the value chain and recommendations are presented in section 5.

## **2      METHODODOLOGY**

### **2.1     Area of study**

This study was undertaken in two sites: Mwala Division, in Mwala district, Machakos County and Longisa Division in Bomet district, Bomet County. Selection of the two sites was based on findings from the earlier phase of the project. Analysis of household-level data showed that these two districts had the highest concentration of indigenous chicken production and marketing, particularly in low agricultural potential areas and among female-headed households. The indicators considered for this analysis were percentage of households keeping indigenous chicken, stock levels, and percent of households selling chicken. Discussions with officers from the Ministry of Livestock Development in Bomet and Mwala showed that indigenous chicken was an important livelihood activity in the two areas.

## **2.2 Sampling**

The study used a combination of approaches to collect data for the chicken value chain analysis, namely, household surveys, focus group discussions, case studies and key informant interviews with various actors along the value chain.

### **2.2.1 Household sampling**

Household-level data was collected from 100 households in each of the two divisions. Because one of the objectives of the study was to understand the role of collective action in market participation by marginalized groups, the entry point for selection of households was farmer groups dealing with indigenous poultry production.

Longisa division in Bomet district was selected as it had a higher concentration of indigenous chicken compared to Bomet Central division. Longisa division has 4 locations namely Kapkimolwa, Chemaner, Kiprerer and Cheboin. The first three locations were selected since they had active farmer groups engaged in poultry enterprise. Households were selected from 5 out of the 7 poultry farmer groups in the selected locations; 2 groups in Kapkimolwa, 3 in Chamaner, and 1 in Kiprerer. The criteria used in selecting the groups included number of years the group has been in operation, group size (number of members), and diversity in group activities. A higher number of years and members, and greater diversity were preferred. The number of households to be interviewed from each of the selected groups was selected proportionately to the total number of members in all the selected groups. A total of 65 households were selected from the list of members in the 5 groups. The remaining 35 households who were to act as a comparison or control group were drawn randomly from the same locations and villages where the 65 households were selected from, but were not members of poultry farmer groups.

Mwala division was selected since it had the highest concentration of indigenous chicken in Mwala district. The division has 4 locations namely Mbiuni, Mwala, Kyawango and Kathama. The first three locations were selected since they had active farmer groups engaged in poultry enterprise. Interviewed households were selected from 4 out of the 6 poultry farmer groups; 3 in Kyawango, and 1 each in Kathama and Mwala locations. The criteria used in selecting the groups were the same as that followed in Bomet. A total of 65 households were selected from groups while the remaining 35 were not members of poultry groups.

### **2.2.2 Sampling for focus group discussions**

Focus group discussions were intended to capture additional information on the importance of indigenous chicken among farmers, as well as participation of men and women as actors in different nodes of the value chain. Two focus group discussions (FGDs) were conducted in each districts; Chemaner and Kapkimolwa locations of Longisa Division in Bomet, and in Mwala and

Mbiuni locations in Mwala Division. The FGDs consisted of about 10-12 farmers, some belonging to groups and others who were not group members. There were more women than men in all the FGDs, perhaps because they are generally more involved in group activities in the community. These farmers were required to be knowledgeable and actively involved in the production and marketing of indigenous poultry.

### **2.2.3 Sampling for case studies**

Case studies were conducted on farmer groups, with a focus on the activities that these groups engage in as they market their products and assess the role of collective action in facilitating market linkages for them. The case studies also provided information on perspectives of group members regarding the benefits they obtained from the group, the costs and constraints associated with group membership and the opportunities that they would acquire from collective action. Two poultry farmer groups were selected for the case study: Cheboror Kongei farmer field school in Bomet and Kanini Kaseo self-group in Mwala. The criteria for selecting these groups for case studies were: size of the group, diversity of the group in terms of gender, age of the group, level of activity and relevance of the activities to the project and level of cohesiveness. A checklist focusing on institutional set up of the groups, formal and informal regulations that govern their operations, innovations, benefits and constraints that the groups encounter among others were used as a guide for the case study.

### **2.2.4 Sampling for other chain actors**

The other chain actors were mainly indigenous chicken traders, who were selected via snowballing. Some were interviewed within the study sites, while others were found in other town where they sold indigenous chicken after buying them from other traders or even from producers at the farm gate or in the local markets. A total of twenty traders were interviewed.

## **2.3 Data collection and analysis**

Data for the study was collected in July 2012. A team of 5 enumerators and one supervisor conducted the household survey while another team of three researchers conducted focus group discussions, case studies and interviews with traders and key informants.

Household data analysis was analyzed to provide information on characteristics of indigenous producers, including decisions on sale of chicken and use of revenue arising from sales. Information on prices and quantities collected from traders was used to compute margins along the value chain. Qualitative data from FGDs, case studies and interviews with traders and key informants were summarized and used to: produce the indigenous chicken value chain maps in the two study sites; identify constraints and opportunities along the value chain; and, assess the role of marketing innovations along the chain.



### **3 INDIGENOUS CHICKEN VALUE CHAIN**

#### **3.1 Value chain map**

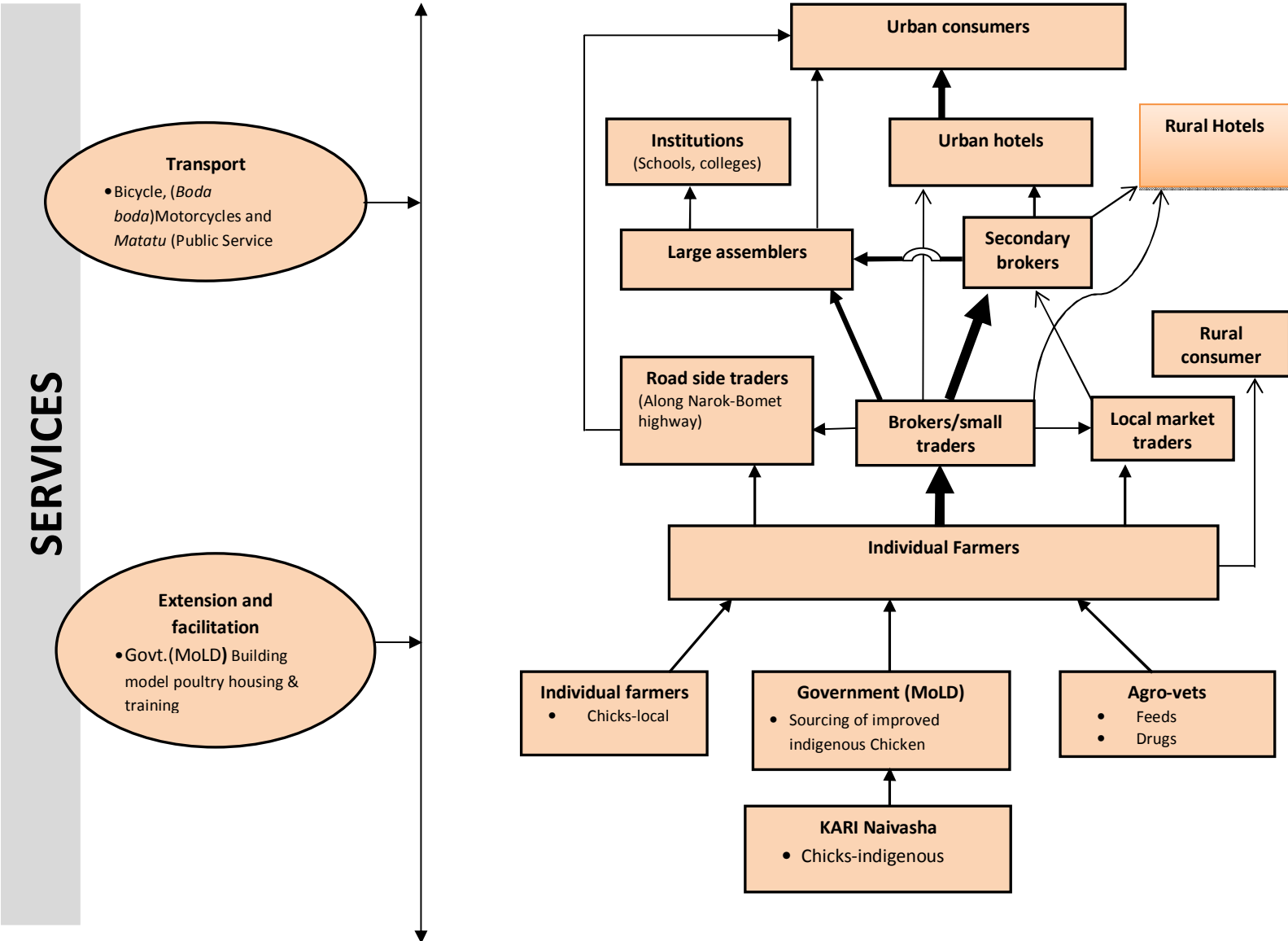
The indigenous poultry value chain maps in Bomet and Mwala are shown in Figures 1 and 2, respectively. A number of actors are involved in the marketing of poultry and poultry products between the farm and the final consumer in the two districts. These include small traders/primary brokers, local market traders, secondary brokers, assemblers, hotels and consumers. Other actors comprise of suppliers of breeding stock and agro-vets. The production and marketing systems of the indigenous chicken enterprise in the two districts are highly informal and unorganized hence it is difficult to know the number of birds sold at each stage of the value chain.

#### **3.2 Input suppliers**

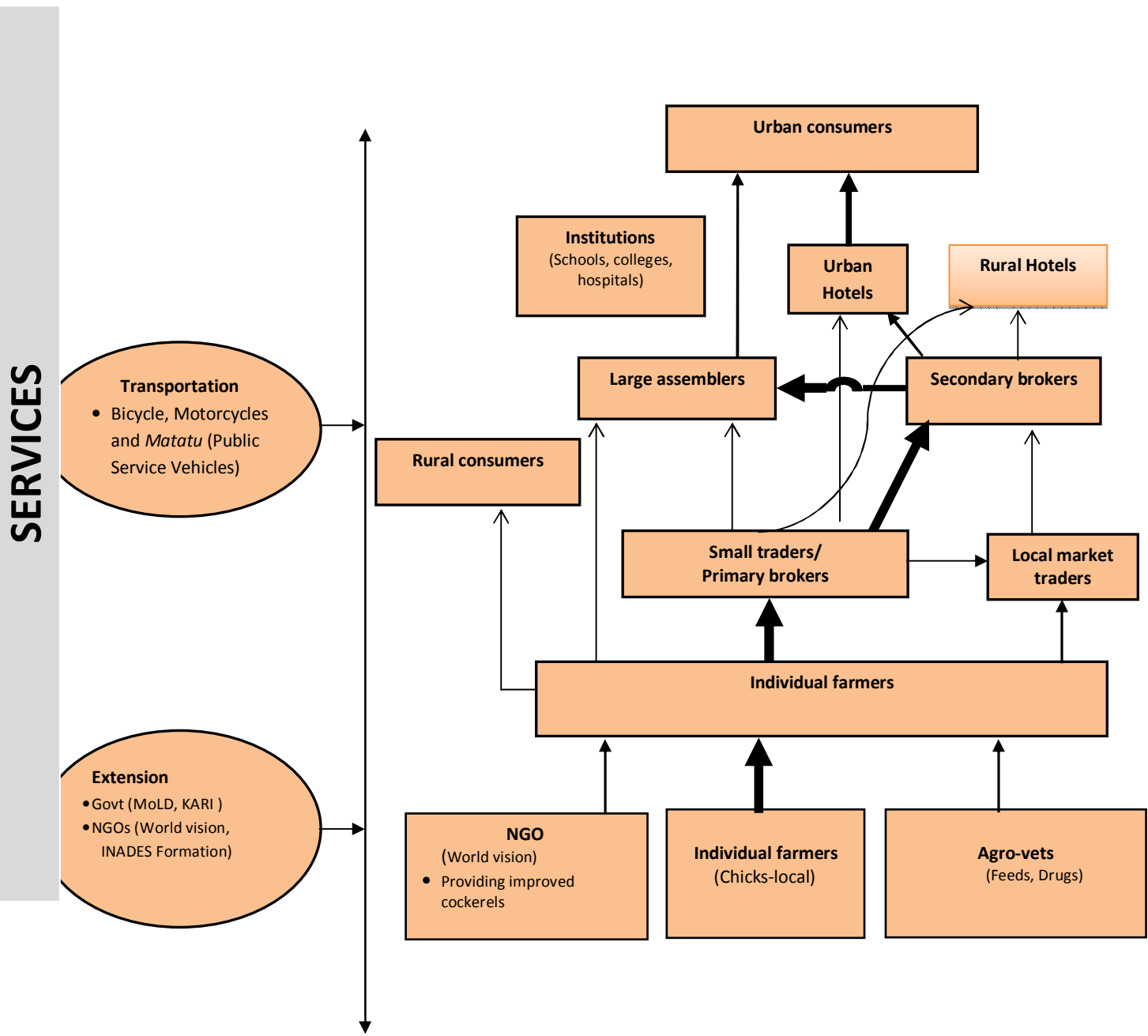
The important inputs in indigenous chicken production were breeding stock, feeds, and drugs. Traditionally, farmers obtained breeding stock for indigenous chicken through barter exchange, gifts, local markets, neighbours and own stock. Currently, majority of farmers raise their own indigenous chickens by maintaining a breeding stock with desirable traits such as good physical appearance and size. Hatching is done at home by the farmers. This is preferred because there is no financial outlay involved and it also helps in controlling the spread of diseases. Some farmers obtained breeding stock from their neighbours or relatives or bought from the market. In Mwala, a few farmers bought day-old indigenous chicks from a farmer in Machakos who operated a commercial hatchery. For the improved indigenous chicken, farmers in Bomet made arrangements with the Ministry of Livestock Development that assisted them in making orders and transportation of day-old chicks from KARI Naivasha. In Mwala, women were responsible for the supply of breeding stock because they know how to select birds with high productivity and good attributes and had better networks than men which help them to get the right information and chicken with desirable qualities. However, in Bomet, men were involved in selection of breeding stock at household level because they are major decision makers and provide labour and capital, and have the know-how on selection of good breeds and fertilized eggs for hatching.

Farmers obtained feeds and drugs from local agro-vet shops. There were nearly 20 agro-vet shops of varying sizes in Bomet district. However, in Mwala district, there were 7 major ones and other smaller ones. Farmers mainly purchased from the major agro-vets, two of which were based in Mwala town and the other five in Masii town, which is located in the neighboring Masii district, and hence necessitating farmers to travel far to secure drugs for the chicken.

**Figure 1: Bomet indigenous chicken value chain map**



**Figure 2: Mwala indigenous chicken value chain map**



### **3.3 Producers**

#### **3.3.1 Importance of indigenous chicken as an agricultural enterprise in areas of study**

Indigenous poultry producers in the study sites were typical small-scale farmers who engaged in both crop and livestock farming. The main staples grown by majority of households in Mwala district were maize, beans, pigeon peas, cowpeas, green grams, sorghum and millet. Besides the staples, horticultural crops like water melon, oranges, pawpaws and mangoes were grown by many households. Livestock enterprises undertaken in the area include cattle, goats, chicken, sheep and rabbits. However, the three major agricultural enterprises according to the FGD participants in Mbiuni location, by order of importance were oranges, maize and indigenous chicken whereas in Mwala location, they were indigenous chicken, maize and cattle. In Mbiuni location, oranges were ranked first because of the high income farmers get which in turn is used to meet major household needs. The weather in the area is also conducive for production of oranges. On the other hand, indigenous chicken were ranked first in Mwala division because they are an important source of income for meeting basic daily household needs, a source of food (meat and eggs) and protein which improve family nutrition and contribute to overall health of family members. Eggs were also noted as a constant source of income. Maize was ranked second in both FDGs since it is the main staple food for the local community, maize stalks and stovers were used as livestock feed, and as a source of income. Cattle were ranked third in Mbiuni location, due to their importance as a source of milk, income, manure and draught power for ploughing and transportation of farm produce. Indigenous chicken came third because they were used by households to meet their daily needs; women could dispose them without seeking authority from their spouses; and, also due to increasing demand for chicken in major towns in the region.

In Bomet district a number of crops and livestock are produced. According to FGD participants in Chemaner and Kapkimolwa locations of Longisa division, the enterprises found in the study sites were maize, beans, Irish potatoes, cabbages, kales, millet, sorghum, peas, indigenous vegetables, spring onions, sweet potatoes, tea, cattle, sheep, goats and indigenous chicken. In both FDGs, maize, cattle and chicken were reported as the three most important agricultural enterprises by order of importance. Maize was ranked first because it is the main staple food (hence grown for food security purposes), a source of income when the surplus is sold and also a source of livestock feed. Cattle were ranked second as they produce milk for home consumption and sale, are used by the community to pay dowry, are a source of income to meet major household financial needs like school fees, and a source of manure. Indigenous chicken came third in order of importance. This is because they were regarded as a source of income for meeting basic household needs and also due to increasing demand for their products.

Findings from the FGDs showed that in Mwala, women ranked indigenous chicken as the most important agricultural enterprise, while men considered maize and oranges as the most important enterprises in two separate FGDs. Women indicated that indigenous chicken enabled them to

meet household and emergency financial needs. Also, they had the freedom to make decisions on sale of chicken unlike cattle, oranges or maize where they were required to seek permission from their spouses. In Mwala location, men preferred maize to indigenous chicken due to its diversified uses as a staple food for the Kamba community, a source of income and an important livestock feed. In Mbiuni location, men considered oranges as the most important enterprise due to their higher returns which can be used to meet major households needs like buying food and paying school fees.

Men in Bomet ranked cattle as the most important enterprise since they considered it as a social status symbol (wealth), used to pay dowry and was a source of income to pay school fees and other major needs of the households. Women in Chemaner considered maize as the most important enterprise since it a staple food and it is the responsibility of women in the household to ensure that there is food on the table. However, women in Kapkimolwa ranked cattle as the most important enterprise since it was a source of milk and cash to meet daily household needs, income from sale of livestock was substantial and could be used to meet the major needs of the household. While in Bomet women ranked indigenous chicken as the second or the third most important agricultural enterprise after maize and cattle, they concurred with their counterparts in Mwala that chicken were an important source of income and women did not need to ask for permission from men in order to sell the chicken.

Indigenous poultry production was dominated by small-scale producers, majority of who were women. Participants in FDGs in both districts reported that about 95% of the farmers were engaged in rearing and sale of indigenous chicken with flock sizes ranging between 10 and 20 mature birds. The majority of farmers kept indigenous chicken compared to improved ones for various reasons: low capital requirement for production; ready market; declining land sizes; ability to withstand adverse weather conditions; less susceptible to diseases; a source of protein; easy to dispose and a quick source of income. In Mwala, it was also reported that majority of the female-households kept more birds than male headed households because they had no other sources of income, and that the chicken do not require large space, are not labour intensive and are a reliable source of income for daily household needs.

In Mwala, the birds in the household were mainly owned and managed by women and children but men were also involved in the enterprise to a limited extent. Also, in Bomet, the enterprise was dominated by women, but young men (school leavers) also participate. Farmers kept few indigenous birds in a free range system in the backyards, but the birds were caged during the planting season or when there were crops in the field, which could be destroyed by the scavenging chicken. In Bomet, improved indigenous chicken breeds such as Kenbro were being promoted due to their attractive qualities such as hardiness (can be kept in a free-range system like indigenous chicken), short maturity time, good mothering ability, higher egg production, increased resistance to diseases and their dual purpose.

Indigenous chicken have been kept mainly for home consumption and farmers have hardly considered their rearing as a business. However, indigenous chicken production is increasingly being regarded as a way of increasing rural incomes and also supporting economic empowerment of rural women and youth, especially in Mwala. They are usually sold for quick cash whenever a financial need arises in the household. The mean number of birds owned per household was 17 and 10 in Mwala and Bomet, respectively. No value addition was reported at the producer level since farmers sold live chicken to buyers who were mainly small traders/brokers.

### 3.3.2 Characteristics of indigenous chicken producers

The interviewed farmers were engaged in various income generating activities. The contribution of these activities to total household income is presented in Table 2.

**Table 2: Household income by gender of household head**

District	Gender	Household total income (KES)	Share of crop income in household income	Share of livestock income in household income	Share of Non-farm income in household income	Share of chicken in household total income	Share of chicken in farm income
Mwala	Male	230,901	0.29	0.20	0.51	0.02	0.05
	Female	163,800	0.35	0.27	0.38	0.02	0.04
	Significance level	0.140	0.214	0.060	0.042	0.909	0.582
	<b>Total</b>	<b>214,125</b>	<b>0.31</b>	<b>0.22</b>	<b>0.48</b>	<b>0.02</b>	<b>0.05</b>
Bomet	Male	225,491	0.30	0.24	0.46	0.02	0.04
	Female	110,281	0.34	0.40	0.26	0.04	0.05
	Significance level	0.056	0.350	0.004	0.008	0.085	0.343
	<b>Total</b>	<b>207,057</b>	<b>0.30</b>	<b>0.27</b>	<b>0.43</b>	<b>0.02</b>	<b>0.04</b>
Total	Male	228,043	0.29	0.22	0.48	0.02	0.04
	Female	142,914	0.35	0.32	0.33	0.03	0.05
	Significance level	0.002	0.117	0.002	0.002	0.102	0.823
	<b>Total</b>	<b>210,591</b>	<b>0.31</b>	<b>0.24</b>	<b>0.45</b>	<b>0.02</b>	<b>0.04</b>

Overall, male headed households had significantly higher income than female headed households. Also, non-farm activities contributed the largest proportion (45%) to household income compared to crops and livestock at 31 and 24 percent, respectively. Non-farm activities contributed the largest proportion for male-headed households. However, for female-headed households, crops, livestock and off-farm income activities contributed nearly equal proportions to household income. While the share of crops in household income was not statistically different for male- and female-headed households, the share of non-farm income was significantly higher in male- headed households, and that of livestock was significantly higher in

female-headed households, compared to their counterparts. The shares of chicken in household income and farm income were minimal and averaged 2 and 4 percent, respectively, and were not statistically different between male- and female-headed households. Similar observations on contribution to household income were made for households in Mwala district. However, for female-headed households in Bomet, the share of income from livestock was higher than that from crops and non-farm activities. While share of chicken in household income was statistically higher in female and male headed households in Bomet, it was no different between these households in Mwala.

In both areas of study, women were primarily responsible for production of indigenous chicken regardless of gender of household head (Table 3). This suggests that indigenous chicken are mainly a women's enterprise.

**Table 3: Persons responsible for chicken production by gender of household head**

District	Gender of person responsible for chicken production	Gender of household head		Total
		Male	Female	
Mwala	Male	13.3	8.0	12.0
	Female	86.7	92.0	88.0
Bomet	Male	25.0	6.3	22.0
	Female	75.0	93.8	78.0
Total	Male	19.5	7.3	17.0
	Female	80.5	92.7	83.0

The age of men and women who were responsible for the chicken enterprise was nearly the same, being 44 and 45 years, respectively (Table 4). However, those in Mwala and particularly women were older compared to their counterparts in Bomet. Overall, men had slightly more years of education compared to women (7.5 vs 6.6 years) and both men and women in Bomet were more educated than those in Mwala. Majority of the men and women responsible for chicken were married. Also, there was a considerable proportion (19 percent) of widowed women who were primarily responsible for chicken, but very few single women involved in chicken production. In Bomet district, no single women or widowed men were reported as being primarily responsible for the chicken enterprise.

**Table 4: Demographic characteristics of persons responsible for chicken production**

Variables	Gender of person responsible for chicken production		Mwala	Bomet	Total
	Male	Female			
Age (mean years)	Male		44.4	43.6	43.9
	Female		49.6	40.2	45.2
	<b>Total</b>		<b>49.0</b>	<b>41.0</b>	<b>45.0</b>
Education (mean years)	Male		7.3	7.6	7.5
	Female		6.5	6.7	6.6
	<b>Total</b>		<b>6.6</b>	<b>6.9</b>	<b>6.7</b>
Marital status (%)	Male		12.5	5.3	7.4
	Female		3.8	0.0	1.9
	<b>Total</b>		<b>4.5</b>	<b>1.1</b>	<b>2.7</b>
Single	Male		75.0	94.7	88.9
	Female		75.0	82.7	78.7
	<b>Total</b>		<b>75.0</b>	<b>85.1</b>	<b>80.2</b>
Married	Male		12.5	0.0	3.7
	Female		21.3	17.3	19.4
	<b>Total</b>		<b>20.5</b>	<b>13.8</b>	<b>17.0</b>

Women dominated all the activities associated with production of indigenous chicken except for construction and repair of poultry structures (Table 5). These activities include feeding, deworming, watering, and cleaning of the chicken house. This could be attributed to culture whereby men own larger stocks (e.g. cattle and goats) which are a symbol of wealth and social status while women together with children own small livestock which is their main source of income for meeting basic household needs. Also, women spend more time at home than men, undertaking domestic chores and responsibilities. Hence, they tend to be in charge of raising and managing chicken enterprise alongside the domestic activities, even where men are responsible for the enterprises.

**Table 5: Production activities of indigenous chicken by gender of household member**

Labor activity	Male only	Female only	Both male and Female
Dusting /pest control	24.8	54.9	20.3
De-worming	26.2	60.0	13.8
Feeding	8.1	60.6	31.3
Cleaning of chicken house	10.9	75.4	13.7
Watering	6.7	67.8	25.6
Vaccination	22.0	61.5	16.5
Repairs and construction	85.7	9.5	4.8
<b>Overall</b>	<b>16.6</b>	<b>62.6</b>	<b>20.7</b>



### 3.3.3 Farm production and marketing patterns

In both districts, results of FDGs showed that farmers lacked the volumes necessary to make it worthwhile to carry their products directly to major markets. This is because flock sizes were small and sales irregular, which were often made when a financial need arose. Nearly 90 percent of the farmers sold their chicken as individuals. Although there were several groups associated with chicken rearing, production and selling were done individually. This is mainly because sales were often irregular and there was no organized production and marketing system through which farmers were able to coordinate production and sale for effective collective sales. Various studies have shown that those who sell through collective approach receive better prices as a result of bargaining power (Fischer et al, 2011). Such an arrangement would lead to higher profits for producers by enabling them to access large traders (who handle higher volumes) and to negotiate for better prices and assured markets for their produce.

Overall, the number and value of chicken kept and sold were higher in Mwala compared to Bomet, with a flock size of 10-17 birds (Table 6). Although women were mainly responsible for chicken, and were involved in most of the production related activities, the number and value of chicken kept and sold were higher for women than men in Mwala but not in Bomet. This finding was similar in the case where chicken production and sales were further disaggregated by gender of the person responsible for the chicken enterprise and gender of the household head (Table 7) except for the following: (i) in Mwala, value of chicken kept by males in female-headed households was higher than for women in male and female headed households; (ii) in Bomet, number and value of chicken sold was higher for women producers than their male counterparts in female headed households.

**Table 6: Chicken production and sales by gender of person responsible**

	District								
	Mwala			Bomet			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	
Number of chicken kept	11.3	17.7	16.9	12.8	9.7	10.4	12.2	13.9	
Value of chicken kept	3838.3	6320.3	6022.5	4052.3	3340.5	3497.1	3976.8	4920.2	
Number of chicken sold	4.9	10.1	9.5	19.0	5.8	8.7	14.1	8.1	
Value of chicken sold	1758.3	3869.9	3616.6	6265.2	2027.5	2959.8	4674.6	3004.2	

**Table 7: Chicken production and sales by gender of person responsible and household head**

		District		
		Mwala	Bomet	Total
Number of chicken kept	Female responsible, female headed	17.3	8.9	14.0
	Female responsible, male headed	17.8	9.9	13.9
	Male responsible, female headed	16.0	14.0	15.3
	Male responsible, male headed	10.3	12.7	11.9
	<b>Total</b>	<b>16.9</b>	<b>10.4</b>	<b>13.6</b>
Value of chicken kept	Female responsible, female headed	6128.3	2965.0	4879.6
	Female responsible, male headed	6388.3	3429.9	4932.2
	Male responsible, female headed	7450.0	4200.0	6366.7
	Male responsible, male headed	3116.0	4045.2	3745.5
	<b>Total</b>	<b>6022.5</b>	<b>3497.1</b>	<b>4759.8</b>
Number of chicken sold	Female responsible, female headed	7.6	7.9	7.7
	Female responsible, male headed	11.0	5.3	8.2
	Male responsible, female headed	3.5	6.0	4.3
	Male responsible, male headed	5.2	19.7	15.0
	<b>Total</b>	<b>9.5</b>	<b>8.7</b>	<b>9.1</b>
Value of chicken sold	Female responsible, female headed	2670.9	2595.3	2641.1
	Female responsible, male headed	4294.2	1892.3	3112.0
	Male responsible, female headed	1925.0	2100.0	1983.3
	Male responsible, male headed	1725.0	6463.6	4935.0
	<b>Total</b>	<b>3616.6</b>	<b>2959.8</b>	<b>3288.2</b>

In both districts, results show that in male-headed households, decisions regarding sale of chicken were made jointly by men and women, while in female headed households, women overwhelmingly made sale decisions (Table 8). A similar pattern was observed with regard to decisions on use of revenue from chicken sales (Table 9).

**Table 8: Persons responsible for sales decision on chicken by gender of household head**

Gender of person making decision on sale of chicken	District							
	Mwala			Bomet			Total	
	Gender of head			Gender of head			Gender of head	
	Male	Female	Total	Male	Female	Total	Male	Female
Men	18.3	0.0	13.6	9.7	7.1	9.3	13.6	2.9
Women	30.0	85.7	44.4	11.1	92.9	24.4	19.7	88.6
Both men & women	51.7	14.3	42.0	79.2	0.0	66.3	66.7	8.6

**Table 9: Persons controlling revenue from chicken by gender of household head**

Gender of person controlling revenue from chicken	District								
	Mwala			Bomet			Total		
	Gender of head			Gender of head			Gender of head		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Men	21.7	0.0	16.0	15.3	0.0	12.8	18.2	0.0	
Women	26.7	85.7	42.0	9.7	100.0	24.4	17.4	91.4	
Both men & women	51.7	14.3	42.0	75.0	0.0	62.8	64.4	8.6	

Overall, where women were responsible for production of indigenous chicken, decisions on use of revenue were largely done jointly by both men and women (53%) and women (38%) separately (Table 10). This overall pattern mirrored that in Bomet. However, in Mwala, decisions on use of were done by these two categories of decision-makers in nearly equal proportions; 47% by women separately and 44% by men and women jointly.

**Table 10: Persons controlling revenue where women are responsible for production**

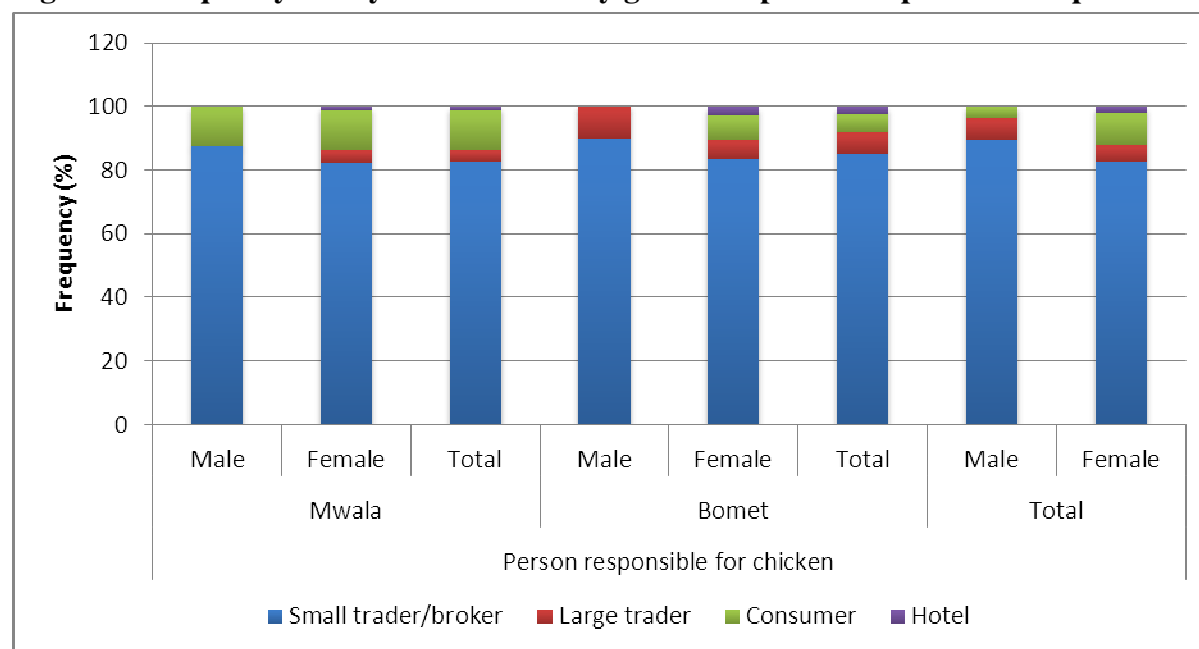
Gender of person controlling revenue	District		
	Mwala	Bomet	Total
Women	46.6	28.8	38.1
Men	9.6	9.1	9.4
Both men & women	43.8	62.1	52.5

Results from the household survey indicate that chicken producers had four marketing outlets namely small traders/brokers, large traders, consumers, and hotels. Of these available options, the most prevalent kinds of buyers were the small traders/brokers among both men and women producers (Fig 3). Overall, while large traders were the second most common outlet for male producers, it was consumers among women responsible for production. Consumers in this case refer mainly to other households within the village. In Bomet, large traders were a more common outlet compared to consumers, especially among men. The converse was true in Mwala. In addition, as a market outlet, consumers were of similar importance to both women and men producers in Mwala. This pattern of sales is due to the fact that farmers usually sell live birds at the farm gate, where the main type of buyer is the small trader. Findings from the FGDs indicated that a few farmers also sold chicken to stationary local market traders during market days.

Results also showed that small traders/brokers were the most prevalent outlet for producers regardless of the gender of the person responsible for production and gender of household head (Table 11). Indeed, men producers in female-headed households sold chicken entirely to small traders. Overall, large traders were the second common outlet for women producers in female-

headed households and men in male-headed households. However, for women in male-headed households, the second prevalent outlet was local consumers.

**Figure 3: Frequency of buyers of chicken by gender of person responsible for production**



**Table 11: Buyers of chicken by gender of person responsible and household head**

Gender of person responsible and household head						
District	Buyer of chicken	Female responsible, female headed	Female responsible, male headed	Male responsible, female headed	Male responsible, male headed	Total
Mwala	Small trader/broker	85.0	81.1	100.0	85.7	82.7
	Large trader	10.0	1.9	0.0	0.0	3.7
	Consumer	5.0	15.1	0.0	14.3	12.3
	Hotel	0.0	1.9	0.0	0.0	1.2
Bomet	Small trader/broker	92.3	81.1	100.0	89.5	84.9
	Large trader	7.7	5.7	0.0	10.5	7.0
	Consumer	0.0	9.4	0.0	0.0	5.8
	Hotel	0.0	3.8	0.0	0.0	2.3
Total	Small trader/broker	87.9	81.1	100.0	88.5	83.8
	Large trader	9.1	3.8	0.0	7.7	5.4
	Consumer	3.0	12.3	0.0	3.8	9.0
	Hotel	0.0	2.8	0.0	0.0	1.8

The reasons for the choice of market outlets by chicken producers are presented in Table 12. The main ones include better prices, proximity to farmers, and buyer availability. Overall, and in Mwala district, small traders/brokers were particularly attractive as an outlet for the following reasons, in order of importance: only available marketing outlet, better prices and nearest to the producers. Although similar reasons applied in Bomet, the order of importance was different. Farmers in Bomet sold mainly to small traders because they were nearest to farmers, offered better prices and were the only available outlet. Overall, all the other outlets were chosen since they offered better prices and were near to the producers.

**Table 12: Reasons for choice of different buyers by chicken producers**

		Reasons for sale to buyer				
District	Buyer of chicken	Only available buyer	Better prices	Nearest	Buys in large quantities	Friend/relative
Mwala	Small trader/broker	49.3	35.8	14.9	-	-
	Large trader	-	66.7	-	33.3	-
	Consumer	-	30.0	50.0	-	20.0
	Hotel	-	100.0	-	-	-
	<b>Total</b>	<b>40.7</b>	<b>37.0</b>	<b>18.5</b>	<b>1.2</b>	<b>2.5</b>
Bomet	Small trader/broker	24.7	30.1	43.8	-	1.4
	Large trader	-	50.0	50.0	-	-
	Consumer	-	80.0	20.0	-	-
	Hotel	-	50.0	50.0	-	-
	<b>Total</b>	<b>20.9</b>	<b>34.9</b>	<b>43.0</b>	<b>1.2</b>	<b>1.2</b>
Total	Small trader/Broker	36.4	32.9	30.0	-	0.7
	Large trader	-	55.6	33.3	11.1	-
	Consumer	-	46.7	40.0	-	13.3
	Hotel	-	66.7	33.3	-	-
	<b>Total</b>	<b>30.5</b>	<b>35.9</b>	<b>31.1</b>	<b>0.6</b>	<b>1.8</b>

At the household level, about 70 percent of chicken sales made at the farm gate and in local markets were by women, 19 percent by men, and 10 percent by men and women jointly. Even where men owned chicken, women had the responsibility of local marketing since majority of the men shied away from carrying chicken to the local markets. Women sold mainly to brokers at the farm gate because this type of arrangement was considered time-saving.

Prices of chicken varied by season, sex, size and color of bird, as well as type of trader. Birds were not usually weighed, but size of bird was used as a proxy of live-bird weight of chicken. During the FDGs, participants stated that there were no quantity requirements imposed by buyers of indigenous chicken. They would buy the number of birds that the farmers were willing to dispose. However, there were quality attributes buyers looked for and farmers were aware of.

The major attribute buyers looked for was the size of the chicken, which helped in determining the price. However, no actual weighing of the birds was done. Small traders/brokers were seen to be exploiting farmers since they would buy birds from farmers based on size and sell to traders on the basis of weight. Another attribute was the health status of the birds; buyers did not accept sick birds.

It is expected that the dominance by women in production, breeding stock selection and even local marketing (at the farm-gate and local markets) will continue to prevail in future due to the continued efforts by the government and development partners in training women through the local groups on proper indigenous chicken management where they are acquiring more skills on production, breed selection and prospects of organized marketing. However, it was reported in both FGDs held in Bomet that with the indigenous chicken becoming a major source of income in most of the households, men were taking over some of the roles which were previously held by women and children in indigenous chicken management. Men were directly getting involved in decision making on management of chicken as well as control of sales and use of revenue from sales, due to the investment they were putting in the enterprise, mainly through supply of breeding stock and disease control (purchase of vaccination drugs and administering the drugs on the chicken).

#### **3.3.4 Constraints and opportunities at the producer level**

Smallholder chicken producers face several constraints as shown in Table 13. Overall, the most commonly reported constraints were high disease incidence, high cost of feeds and predation, and did not differ by gender of the person responsible for the chicken. While the ranking of constraints was similar in the case of Mwala regardless of the gender of the person responsible for the chicken enterprise, in Bomet, male producers reported predation as a more common problem compared to high cost of feeds. The most common diseases were Newcastle, fowl typhoid and coccidiosis, which would sometimes wipe out an entire flock and farmers, would have to start building their stock all over again. The high cost of feeds may constrain farmers in providing adequate feed supplementation and may lead them to use home-formulated feeds that may not have adequate nutrients for optimal growth of chicken. Predation was a serious problem given the nature of the free-range system and it was reported to contribute to high chick mortality.

**Table 13: Constraints facing indigenous chicken producers**

Constraint	N(responses)	Mwala		Bomet		Total	
		Male	Female	Male	Female	Male	Female
Predation	80	12.8	19.4	20.4	21.1	16.9	20.0
Lack of breeding stock	1		0.0		2.6	0.0	1.0
Lack of technical advice	9	0.6	1.6	3.1	2.6	2.0	2.0
High cost of feeds	106	29.3	21.0	18.8	23.7	23.7	22.0
High cost of other inputs	52	10.4	9.7	12.6	13.2	11.5	11.0
High incidence of pests	19	3.0	6.5	4.2	5.3	3.7	6.0
High incidence of disease	180	41.5	38.7	39.8	31.6	40.6	36.0
Lack of proper housing	3	0.6	1.6	0.5	0.0	0.6	1.0
Slow maturity	2	1.2		0.0		0.6	0.0
Lack of water	1	0.6		0.0		0.3	0.0
Theft	1		1.6		0.0	0.0	1.0
Low egg production	1	0.0		0.5		0.3	0.0
Total	455	100.0	100.0	100.0	100.0	100.0	100.0

Lack of proper housing structures for indigenous chicken was also cited as a constraint during the FGDs.

Despite the challenges faced by indigenous chicken producers, there exist opportunities for them, which include:

- i. Growing demand and preference for the indigenous chicken in urban markets due to changing dietary habits that are driven by health concerns and the need to have healthy diets. Smallholders could tap into the growing market to increase production and sales.
- ii. Prices are improving due to increasing demand and improved quality of the birds hence making the enterprise lucrative both in the short run and long run.
- iii. Continuous support by the government and development partners, particularly in the area of training and construction of model chicken housing units. The trainings on production and marketing of indigenous chicken provide prospects for improving farmer poultry management skills especially on detecting symptoms/signs and prevention methods of the poultry diseases. The Kenya Poultry Farmers Association (KEPOFA) has embarked on a programme aimed at capacity building for poultry farmers in Bomet and Nyandarua. All these efforts will improve bio-security and increase production levels.
- iv. Awareness on supplementary feeds from regular trainings should help farmers in preparing supplementary poultry feeds using the available local products and hence lead to a reduction in cost of feeds.
- v. Farmers can grow local crops to sell to millers for the processing of alternative “kienyeji” supplementary feeds.
- vi. Existing collective action among producers. Farmers are members of groups which are fairly active in other activities, but are weak in collective marketing, yet it has been

shown that collective marketing by smallholder farmers improves their bargaining power to negotiate for better terms in the market. Collective action will facilitate collective marketing, assembly of indigenous chicken by traders, and provision of affordable loans from financial institutions, where it may be more difficult for producers to obtain credit individually due to lack of collateral. Farmers can also work in groups to start hatcheries for the provision of breeding stock; invest in alternative brooding technology to overcome the challenge of predation; access inputs in a more cost effective manner; formulate their own feeds using locally available materials; and access markets that require a sizeable stock through scheduled production.

- vii. Potential for value addition. This may be in terms of slaughtering and dressing especially for urban consumers, who are likely to pay a premium for the convenience associated with these services, thus providing business opportunities to expand existing services or start new ones. There exists support for efforts on chicken value addition. For instance, apart from training farmers in Bomet, KEPOFA is planning to set up a slaughter slab for chicken in the area.

Given the identified opportunities, farmers could boost their production and revenues if they embrace indigenous chicken enterprise as a business and focus on producing quantities and quality that will sustain the market. In order to penetrate the market and obtain remunerative prices, farmers need to form groups and sell collectively. Working in farmer groups is greatly encouraged to foster scheduled production hence overcoming problems associated with periods of glut and low supply. However, such farmer groups need to have market led by-laws that enhance group cohesiveness and loyalty, in order to minimize or eliminate side selling. To achieve cohesiveness, trainings, market exposure visits and buyer-seller forums for all group members need to be planned for.

### **3.4 Small traders/primary brokers**

Small traders/primary brokers buy chicken from farmers at the farm-gate and along the routes leading to the local markets. From the interviews conducted, small traders normally move from household to household in search for chicken to purchase or visit specific households at the request of the farmers with chicken to sell. They also position themselves on market access routes, especially on market days, and buy chicken from farmers en route to the local market. In addition, they normally move from one market to the other to purchase local birds during open market days. They are mainly primary assemblers (also known as “brokers” in Kenya), responsible for bulking. They aggregate supply from farmers and sell chicken to traders in local markets, rural hotels and secondary brokers and large assemblers in major towns. From the FGDs, brokers buy about 90 percent of birds from the producers in both districts. They command such a large share of sales at the producer level because of their in-depth knowledge of the poultry business; proximity to smallholder households; they offer better prices compared to the local market traders; and, they offload farmers of the burden of waiting for the market day and



taking chicken to local markets. Hence, they are considered a critical market player that can be used in establishing business service delivery to the producers as well as the large traders in major cities.

Trading of indigenous birds (both locally and in regional markets) is generally dominated by men. Women are quite few in brokerage owing to the heavy burden associated with buying and selling of indigenous chicken. Brokers have to be very aggressive, travel long distances, use bicycles and public transport to source for the birds, which is time consuming and tedious. Also women are few in chicken trading because they lack adequate capital which hinders them from participating in trading activities. As household managers, time demand for domestic chores makes it difficult for them to engage in any activity that requires them to be away from home for long periods of time. Women participants in the FGDs conducted in Mwala reported that their spouses had reservations about them engaging in businesses that involve travelling away from home and talking to other men because this could lead to promiscuity. In this regard, participants were generally of the view that it will take time for women to be involved in chicken trading activities beyond the local market. Therefore, women were not involved in marketing of chicken beyond the local market. This implies that women were mainly involved at the lower end of the indigenous chicken marketing chain.

The main constraint faced by small traders is that they travel long distances using bicycles and public means to source for birds, which is time consuming and tedious. This is because farmers keep small flock sizes per household and production intervals are irregular, forcing the small traders to move to different markets to aggregate their supply. However, they noted that they would benefit if farmers would sell as a group from a specific collection center. Dealing with groups will be cost-effective, since the traders would save on transport and travel time.

### **3.5 Local market traders**

Local market traders are few and buy chicken from small traders and individual farmers who take their chicken to the market. They are stationary and located in local markets from where they buy chicken during designated market days. They offer slightly lower prices to farmers compared to the small traders but their margins are very low. These are usually distant traders, coming from larger towns in the regions such as Kangundo, Wamunyu, Kithimani, Kapkwen and Mulot, and who mainly bulk chicken for onward sale to secondary brokers.

### **3.6 Road side traders**

These traders were only found in the Bomet area of the survey. They buy chicken from individual farmers and small traders, and sell them to consumers, particularly urban ones along the Narok-Bomet highway.

### **3.7 Secondary brokers**

Secondary brokers buy chicken from small traders/primary brokers and traders in the local markets. They also play the role of bulking. Brokers from various places usually small towns within the regions bring chicken to the major chicken markets at Mwala and Longisa and sell to large assemblers. The trading of chicken is intense in the early hours of the market day and most transactions are concluded by 11.00 am.

### **3.8 Large assemblers**

These are large scale traders based in major towns within the two districts who normally obtain their chicken supplies from small traders and secondary brokers, and sometimes a few farmers in the neighborhood of Tala and Longisa, which are major markets for chicken in the two districts. The large assemblers interviewed reported that they had come from various estates in Nairobi, Thika, Bomet and Longisa towns. They assemble their supply and transport it to the final destinations in the various towns where they sell to the consumers in different estates and other outlets e.g. institutions, hotels. They play a significant role of supplying indigenous chicken to the consumers in urban areas. They are found in the same major towns as the secondary brokers.

### **3.9 Hotels**

Hotels in both rural and urban areas comprise part of the indigenous chicken value chain. Those in the rural areas within the small regional towns obtain supplies from the small traders. Urban hotels mainly in Tala, Machakos, Nairobi, Thika, Bomet and Longisa purchase chicken from secondary brokers and small traders. In Mwala district, the T-TOT hotel in Machakos was identified as a large buyer of chicken. The hotel buys birds from small traders/brokers, especially on market days, who bulk chicken at their collection centre near Mwala market, ready for transportation to Machakos.

### **3.10 Consumers**

Indigenous chicken consumers are found in both rural and urban areas. The rural consumers are normally households residing the same villages as the chicken farmers, but occasionally, these include visitors in the areas of production. The urban consumers include individuals who purchase chicken from large assemblers at various estates in Nairobi, Thika, Bomet and Longisa where they are retailed.

### **3.11 Support services**

The indigenous chicken value chain has very few support services, mainly in the areas of market information, extension and transportation. The Ministry of Livestock Development (MoLD) was key in promoting the enterprise in both districts through provision of information on management of the chicken as well as market information. In Bomet, the Ministry was promoting improved indigenous chicken through the implementation of the Rural Poultry Development programme. This is a two-year programme which began in 2011, and one of its goals is to increase productivity of indigenous chicken through promotion of better housing models; improve on the breeding and management of chicken; and promote adoption of farm bio-security measures. In 2011, twelve (12) model indigenous chicken houses were constructed and each stocked with 30 improved day-old chicks from KARI Naivasha. The units are managed by farmer groups, who meet the cost of running the units. Poor and vulnerable farmers were selected to benefit from the programme. The farmers received training on disease control, housing and feeding.

In Mwala district, the MoLD was also playing a critical role in supporting indigenous poultry production, which ranks second after dairy farming in terms of income generation. The Ministry provided training on good management of the enterprise, selection of breeding stocks, as well as disease control, feed supplementation and the need to form groups for collective marketing. Also, the Ministry worked with several collaborators that were supporting various agricultural activities in the district. For instance, World Vision has been promoting upgrading of local chicken by purchasing breeding stock (cockerels) for farmers, while INADES Formation has been training farmers on group formation and management as well as promoting rural savings.

Transport services were provided for transportation of chicken between different stages of the marketing chain. The main types of transportation were bicycles, motorcycle, and public service vehicles (matatus).

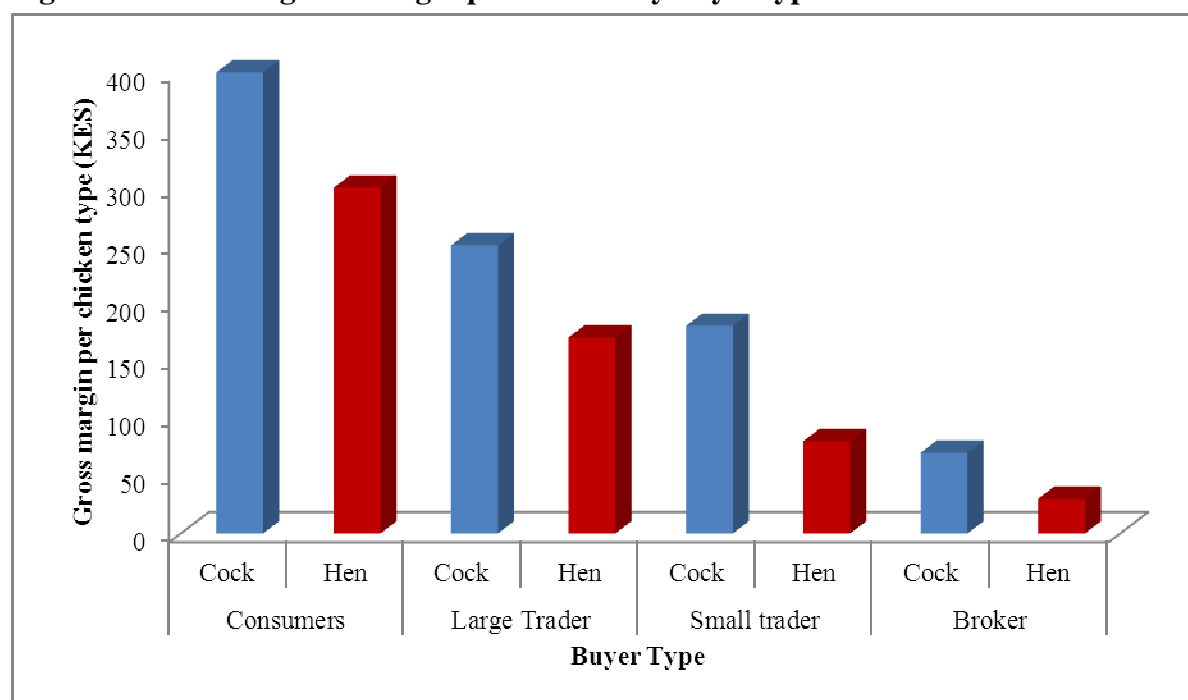
### **3.12 Indigenous chicken pricing and marketing margins**

There are a number of cost items incurred by all actors along the chicken value chain. Producer costs are shown in Table 14. Cost of production per chicken averaged KES 165, with 44 percent of the cost being on feed and treatment services (veterinary service, deworming and use of pesticides), and 31 percent being for the purchase of chicken. The average producer gross margin per chicken was KES 209.

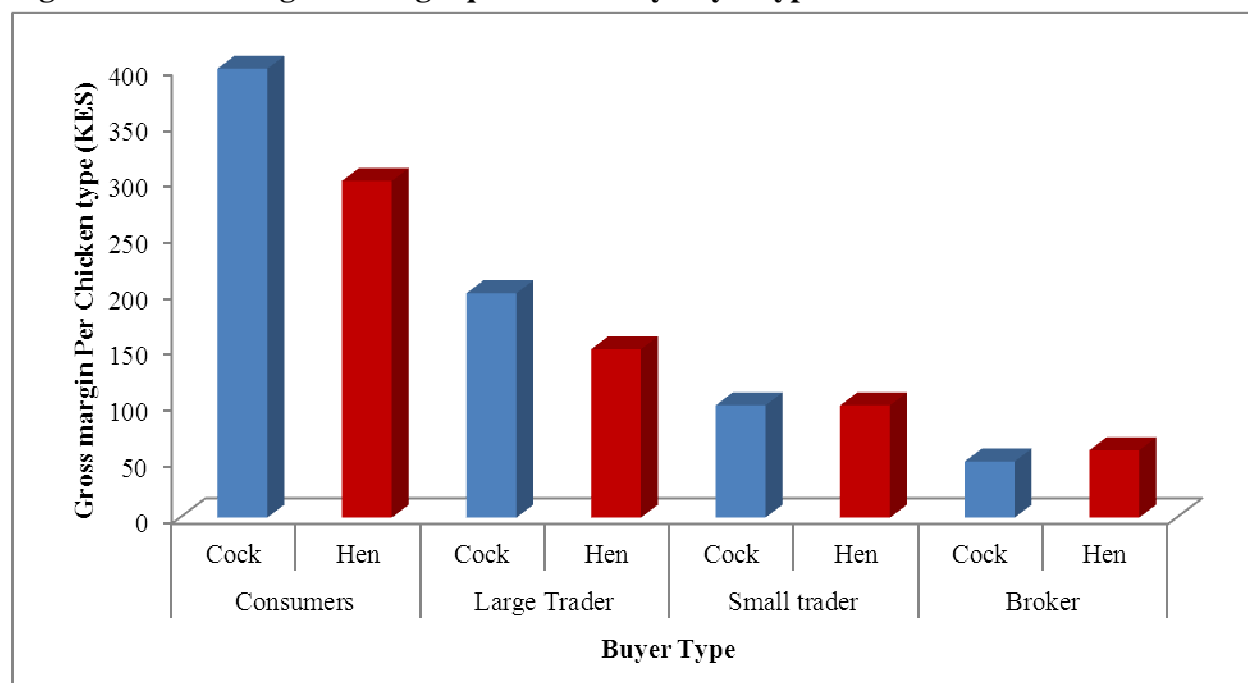
**Table 14: Producer cost of production, revenue, and gross margin (N=200)**

Variables	Mwala		Bomet		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Cost of production per chicken (KES)	158.2	325.8	171.4	240.0	164.8	285.7
<i>share of feed and treatment services cost in total cost</i>	0.49	0.34	0.39	0.37	0.44	0.36
<i>share of farm structure in total cost</i>	0.08	0.20	0.14	0.25	0.11	0.23
<i>share of chicken purchase cost in total cost</i>	0.30	0.35	0.33	0.38	0.31	0.37
<i>share of transport cost in total cost</i>	0.07	0.14	0.06	0.14	0.06	0.14
<i>share of labour cost in total cost</i>	0.06	0.13	0.08	0.17	0.07	0.15
Revenue per chicken (KES)	360.8	94.4	342.4	78.6	351.3	86.8
Producer gross margin per chicken (KES)	221.6	256.2	196.4	156.2	208.6	210.4

Producer gross margin varied by buyer type and was highest when chicken were sold to consumers in terminal markets such as Nairobi and lowest when sold to brokers (Figures 4 and 5).

**Figure 4: Producer gross margin per chicken by buyer type in Mwala District**

**Figure 5: Producer gross margin per chicken by buyer type in Bomet District**



The average costs and margins for the key actors along the chicken value chain are presented in Tables 15 and 16, for Mwala and Bomet districts, respectively. The net marketing margins and returns varied by type of chicken, but were generally highest for terminal retailers and lowest for small traders, although primary brokers did not report any marketing costs. The returns were computed as the percentage net margin over the sum of buying price and marketing costs.

**Table 15: Costs and margins per chicken along the value chain in Mwala District**

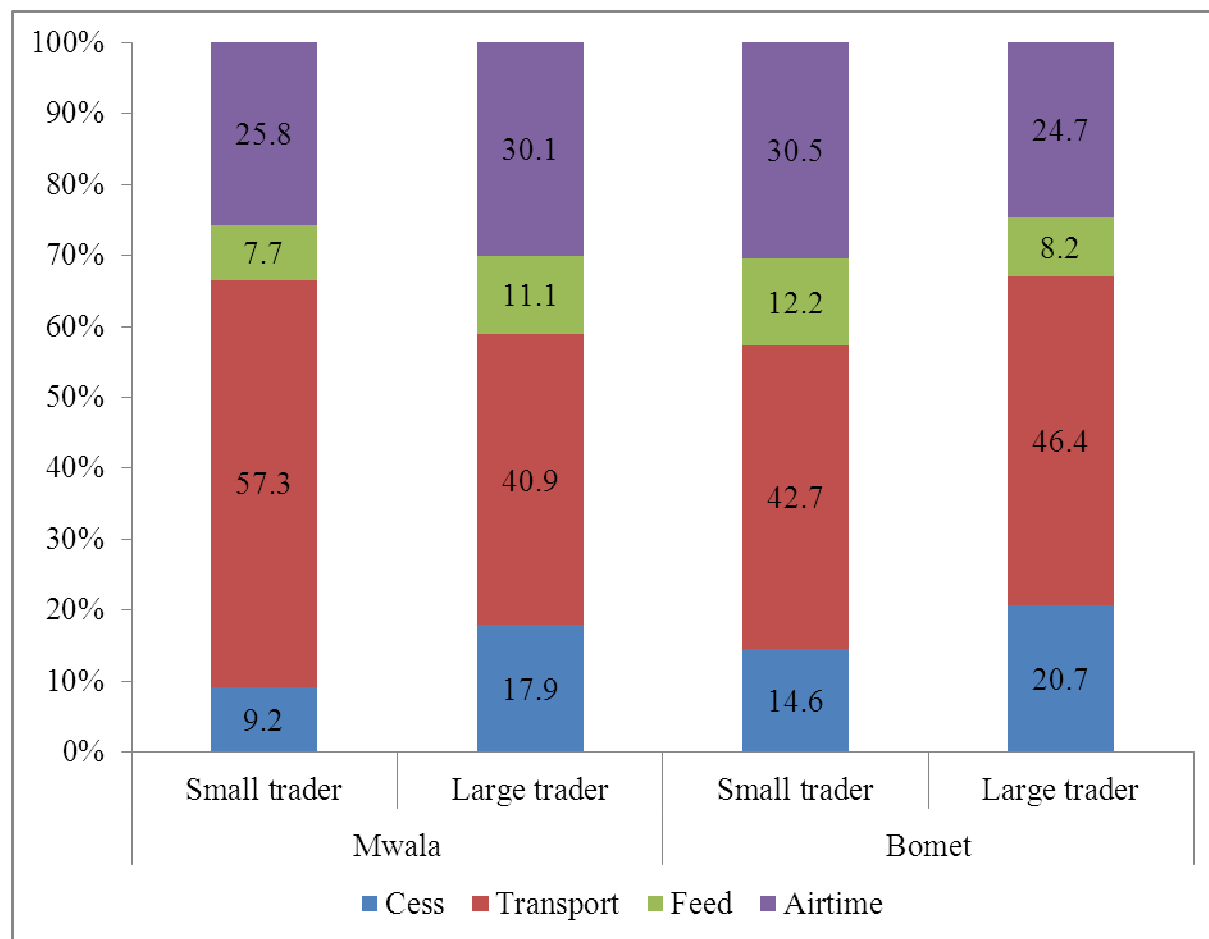
	Primary brokers (buying from producers)		Small traders (buying from primary brokers)		Large traders (buying from small traders)		Terminal retailers (buying from large traders)	
	Cock	Hen	Cock	Hen	Cock	Hen	Cock	Hen
Buying price	350	250	450	300	500	350	600	420
Selling price	420	280	530	330	600	420	750	550
Marketing cost	0	0	14	14	15	15	11	11
Net margin	70	30	66	16	85	55	139	119
Return (%)	20.0	12.0	14.2	5.1	16.4	15.0	22.7	27.6

**Table 16: Costs and margins per chicken along the value chain in Bomet District**

	Primary brokers (buying from producers)		Small trader (buying from primary brokers)		Large trader (buying from small traders)		Terminal retailer (buying from large trader)	
	Cock	Hen	Cock	Hen	Cock	Hen	Cock	Hen
Buying price	350	250	400	300	450	350	550	400
Selling Price	400	310	450	350	550	400	750	550
Marketing cost	0	0	5	5	6	6	10	10
Net margin	50	60	45	45	95	45	190	140
Return (%)	14.3	24.0	11.1	14.8	20.7	12.5	33.8	34.0

The structure of marketing costs for small and large traders shows that transport costs constituted the largest component in both districts, accounting for between 41 and 57 percent of total marketing costs (Figure 6). Small traders mainly rely on motorbikes and public transport to collect and transport chicken from smaller town markets to the large assembly markets. Transport costs tend to be high due to poor road conditions. The other substantial cost was airtime, contributing 25-30 percent of the cost. Traders reported that they regularly used mobile phones to gather information regarding supplies and prices from farmers and different markets. Traders pay cess or council fee and they complained that the cess they paid was high compared to that paid by traders dealing with other types of livestock. Varying amounts of cess were levied on the birds at different points along the marketing chain, ranging from KES 5 per bird at the local market up to KES 30 at the terminal retail markets. This is normally done by county, municipal and city councils at different markets within their jurisdiction. Traders also incurred feed costs since they needed to feed the birds in the enclosures where they were kept awaiting sale.

**Figure 6: Share of marketing cost components for small and large traders in Mwala and Bomet districts**



### 3.13 Marketing challenges and opportunities

Players in the indigenous chicken value chain face various challenges. For instance, farmers cited several constraints as presented in Table 17. Chicken producers, regardless of gender of person responsible and area of survey, indicated low prices as the major constraint. This was followed in a distant second by lack of demand as reported by all producers in Bomet and female producers in Mwala. However, male producers in Mwala reported high cost of transport as the second important marketing constraint. Although a few women producers in both survey areas reported lack of and poor markets as a constraint, male producers did not report it. Surprisingly, a considerable proportion of farmers indicated that they did experience any marketing constraint.

From the FGDs, it was apparent that though small traders/brokers offered better prices than local market traders, the prices were still low. The FGD participants attributed this to lack of proper and transparent mechanisms of price discovery such as use of grades and standards. It was

reported that farmers were price-takers, and lacked bargaining power for higher prices. This is mainly because farmers sold chicken individually. In addition, farmers did not always get a buyer whenever they needed to sell their chicken, and this was viewed or interpreted as lack of demand. Other constraints reported in the FGDs included long distances to markets, which were a challenge to women farmers who lacked transport means such as bicycles, and lack of organized markets.

**Table 17: Marketing constraints faced by indigenous chicken producers**

Market constraint	District					
	Mwala		Bomet		Total	
	Gender of person responsible					
	Male	Female	Male	Female	Male	Female
No constraint	25.0	8.3	13.6	18.6	17.6	12.8
Lack of demand	8.3	16.5	9.1	14.0	8.8	15.4
Low prices	50.0	60.6	77.3	55.8	67.6	58.5
High cost of transport	16.7	10.1	0.0	9.3	5.9	9.7
Lack of/poor markets	0.0	4.6	0.0	2.3	0.0	3.6

The main constraints identified during the interviews with the indigenous chicken traders include:

- i. Poultry disease outbreaks which affected the volumes of birds traded in the markets. The most common diseases are the fowl typhoid, New Castle Disease, Coccidiosis, coughing and eye infections.
- ii. High transport costs due to poor road infrastructure
- iii. Inconsistent supplies. Majority of the poultry farmers kept small flock of indigenous chicken and disposed them when a financial need arose in the household and this led to irregular supplies
- iv. Lack of capital to expand business. Most of the traders were unable to provide adequate collateral to enable them access credit for expanding the scale of their operations.

Indigenous chicken traders identified the following opportunities within the value chain:

- i. Accessing affordable loans from financial institutions to improve their businesses.
- ii. Training farmers on how to detect poultry diseases and use preventative measures as well as right and timely treatment to contain disease outbreaks
- iii. Collective action among the farmers to ease collection of the indigenous chicken. Group marketing of poultry can act as an incentive to buyers or traders since it would ease bulking of supplies and provide guaranteed quantities. This would in turn provide room for negotiation of better prices for farmers.



### 3.14 Women’s participation in the indigenous chicken value chain

Participation of women in the indigenous chicken value chain is outlined in Table 18. Women were involved in the chicken value chain predominantly as producers. In over 80 percent of the interviewed households, women were responsible for the enterprise and undertook most of the production related activities except for construction and repair of poultry housing structures. They were also primarily responsible for the farm-gate sales of chicken. However, women’s participation in other stages of the chain was minimal, thus relegating them to the lower end of the value chain.

**Table 18: Women’s participation in indigenous chicken value chain**

Node	Level of participation	Description of activities performed
Production	Majority	<ul style="list-style-type: none"> <li>• Sourcing for breeding stocking. Women have good knowledge regarding selection of breeding stock and have better networks than men which help them to get the right information and chicken with desirable qualities</li> <li>• General management of the enterprise i.e. production-related activities (feeding, cleaning the chicken houses etc)</li> <li>• This is attractive for women because indigenous chicken production has low input requirements in terms of land and capital, and women are often more resource constrained compared to men</li> <li>• It is also a source of cash for immediate daily needs, and women need no permission to sell chicken to meet these needs</li> <li>• Women are able to tend to the chicken alongside routine domestic chores</li> </ul>
Farm-gate sales	Majority	<ul style="list-style-type: none"> <li>• Sell chicken to small traders or the village brokers at the farm-gate</li> <li>• These brokers are locals whom women can easily call and interact with</li> <li>• It is also time saving as it does not involve moving out of the homestead</li> <li>• Women are involved in decisions on sale of chicken and use of revenue from sales</li> </ul>

**Table 18: Women’s participation in indigenous chicken value chain (cont.)**

Node	Level of participation	Description of activities performed
Primary trading	None	<ul style="list-style-type: none"> <li>• This involves aggregating chicken from farmers and entails moving from household to household to source for chicken, often travelling long distances using bicycles and public transport</li> <li>• Traders also sell chicken to hotels and other traders in local markets</li> <li>• Women are hardly involved in trading beyond the farm gate for various reasons:               <ul style="list-style-type: none"> <li>○ Time demand from domestic chores, which limits participation since trading is time consuming and tedious, and restricts women’s mobility especially for long-distance travels</li> <li>○ Trading can be aggressive and competitive especially among small traders/brokers</li> <li>○ Unfriendly transport means; use of bicycles to source for birds not convenient for women</li> <li>○ Social constraints that limit people with whom women can interact; spouses reluctant to allow women to be away from home for extended time periods and interact with the more prevalent male traders</li> </ul> </li> </ul>
Secondary trading	Minority	<ul style="list-style-type: none"> <li>• Trading here involves bringing chicken to the major regional markets and selling them directly to large assemblers or through the secondary market traders who are the main link between the large assemblers and other sellers in this market</li> <li>• Very few women are involved due to time and capital constraints</li> </ul>
Terminal markets	Minority	<ul style="list-style-type: none"> <li>• At the terminal or end markets, traders buy chicken from secondary traders or large assemblers and sell them to consumers in different estates and other outlets</li> <li>• Very few women are found at this node of the value chain</li> </ul>

## 4 MARKET INNOVATIONS ALONG THE VALUE CHAIN

### 4.1 Collective Action

Collective action by farmers is thought to provide stronger bargaining power in the market for inputs and outputs, and a platform for sharing information useful for production and marketing. Participation in groups as a form of collective action was high among interviewed households. In both districts, about 90 percent of the households had at least one member belonging to a group. However, these households did not engage in either collective production or marketing of chicken. They participated in groups related to savings and credit, education, as well as agricultural and community activities. The most common type of group was dealing with agricultural activities, followed by savings and credit (Table 19).

**Table 19: Participation in groups by chicken producers**

Group type	N	Percent
Agricultural	219	65.6
Savings & credit	91	27.2
Education	2	0.6
Community	22	6.6
<b>Total</b>	<b>334</b>	<b>100.0</b>

Although household members participated in various agricultural groups involved in different enterprises such as production of poultry and avocado, among others (Table 20), the members undertook those activities at the household and not group level. These agricultural groups mainly provided extension services, followed by savings, loans and input purchases (Table 21). It was apparent that all types of groups were focusing on provision of loans and savings services as key activities.

**Table 20: Enterprises and activities by groups**

Enterprise/ activity	N	Percent
Poultry	154	70.3
Avocado	2	0.9
Sweet potato	1	0.5
Cash crop	13	5.9
Other food crops	85	38.8
Dairy cattle	5	2.3
Beef cattle	1	0.5
Dairy goats	31	14.2
Bee keeping	18	8.2
Savings & credit	30	13.7
Agroforestry	3	1.4
Digging boreholes	1	0.5
Local goats/sheep	16	7.3
Tree planting	5	2.3

**Table 21: Services received from the groups by type of group**

Services received	Type of group			
	Agricultural	Savings & credit	Education	Community
Credit/loan	32.4	63.7	50.0	33.3
Marketing	7.3	1.1	-	-
Input purchases	24.2	3.3	-	-
Savings	39.3	72.5	50.0	19.0
Joint extension services	50.2	2.2	-	4.8
Market information	6.8	-	-	4.8
Water catchment	3.2	-	-	9.5
Agricultural training	7.3	-	-	-
Community welfare needs	1.4	3.3	-	28.6
Provision of farm labor	5.5	2.2	-	23.8

#### 4.1.1 Case Studies on Collective Action

One of the objectives of the project was to provide greater depth of understanding on the role of collective action in promoting market access and participation by women, and identify areas of improvement that can enhance this role. We conducted case studies on two farmer groups namely Cheboror Kongei Farmer Field School in Bomet County and Kanini Kaseo Self-help group in Mwala County. In this section, we provide a summary on collective action activities that groups engaged in; challenges they faced; factors that contributed to their success; and, ways of improving the capacity of collective action to meet the needs of the group members.

The groups were involved in a variety of activities such as horticulture farming, bee-keeping, rearing of dairy goats and indigenous chicken, merry-go-round, and provision of group labour. Some production activities were done at the individual level while others were done collectively. Although joint production was largely successful, in a number of cases, it posed problems of non-commitment by some members, but this was resolved by creating a fund that members contributed to and, which was used to pay for work done on the group farm. Collective marketing was limited. While one group participated in collective sale of chicken, eggs and honey, the second group did not report collective marketing of any produce or products.

Working in groups enabled members to grow and diversify their activities, bargain for better prices, access grants, different types of training and information, vaccination and treatment of chicken, as well as welfare assistance. However, the groups faced a number of challenges that affected the performance of their activities and level of benefits derived from those activities. These included drought, high input prices, diseases and pests, and inadequate knowledge on management of different activities. Despite these challenges, the groups noted that they were relatively successful in their activities due to: good governance as shown by the democratic approach to activities and issues in the group, adherence to rules governing membership as well as trustworthiness, transparency and accountability; commitment to group activities, which was motivated by inclusiveness and consultation in decision making; and, election of visionary leaders who were able to lead and guide members to achieve their objectives.

Overall, collective action already exists among producers as shown by these two case studies, and can be tapped into to promote collective marketing of chicken in order to improve incomes of chicken farmers. Producers need to participate in collective action to improve some production-related activities such as vaccination and treatment of chicken, enhance their bargaining power to negotiate for better terms in the market and improve access to affordable credit from financial institutions. Farmers can work in groups to start hatcheries for the provision of breeding stock; invest in alternative brooding technology to overcome the challenge of predation; pool resources for vaccines to make treatment cost effective; access inputs in a more cost effective manner; formulate their own feeds using locally available materials; and access markets that require a sizeable stock through scheduled production.

## **4.2 Financial services**

No organization or institution was found to provide financial services directly in support of production and marketing of indigenous poultry in the two districts of study. However, surveyed households participated in credit markets to some extent. About 41 percent of the households applied for credit. Overall, the main source of credit was registered groups (Table 22). Informal sources of credit such as friends and relatives were also reported to be important.

**Table 22: Sources of credit for chicken producers**

Credit source	N	Agricultural credit	Non-agricultural credit	Overall
Group (registered)	43	20.9	79.1	43.0
Friends	16	12.5	87.5	16.0
Commercial bank	14	21.4	78.6	14.0
MFI	10	0.0	100.0	10.0
Family member /relative	7	28.6	71.4	7.0
SACCO	3	33.3	66.7	3.0
Employer	2	50.0	50.0	2.0
Group (unregistered)	2	0.0	100.0	2.0
KFA	1	0.0	100.0	1.0
Church	1	0.0	100.0	1.0
Shopkeeper	1	0.0	100.0	1.0
<b>Total</b>	<b>100</b>	<b>18.0</b>	<b>82.0</b>	<b>100.0</b>

Where credit was obtained for agricultural purposes, it was mainly used in the production of food crops (56%), and poultry (17%).

### **4.3 Information and Communication Technology**

Use of information and communication technology was minimal along the indigenous chicken value chain. It is only traders (both small and large) that reported use of mobile phones in gathering information regarding chicken supplies and prices from farmers and different markets. However, the use of phones by traders was substantial, given that airtime accounted for 25-30 percent of total marketing costs. Therefore, the mobile phone communication service played an important role in easing the process of trading by reducing costs associated with searching for supplies and obtaining price information. Surprisingly, no cases were reported on the use of mobile money transfer services in chicken trading. Farmers preferred to receive cash and were reluctant to use mobile money transfer services in transactions with itinerant buyers with whom they did not have repeated transactions or long standing relationships.

## **5 CONCLUSION AND RECOMMENDATIONS**

Analysis of the indigenous chicken value chain showed that the chain consists of a number of players namely producers, small traders/primary brokers, local market traders, secondary brokers, assemblers, hotels and consumers. However, the chain is not very elaborate and is in most cases highly informal and unorganized. In addition, although indigenous poultry is a common enterprise in the study areas, women were involved only at the lower ends of the value chain i.e., sourcing for breeding stock, production (management of the enterprise), farm-gate sales, and sales in the local markets albeit to a very limited extent. Women were also involved in decision-making regarding sale of chicken and use of revenue from sales. In female-headed households, these decisions were predominantly made by women, while in male-headed households joint decision-making by both men and women was more prevalent.

Since women were predominantly found at the production node of the chain, unlocking their potential to participate in markets will necessitate focusing on enhancing production. Currently, production is characterized by small flock sizes reared in a low-input free range production system, which does not meet existing market demand. Other constraints that need to be addressed at the production level include high disease incidence and chicken mortality; high cost of feeds; limited supplementary feeding; predation due to lack of proper housing structures; little or no bargaining power for producers, hence low producer prices; and, high cost of transport to markets. It is also important to address constraints identified among traders, which include: poultry disease outbreaks which affect supply of birds; high transport costs due to poor road infrastructure and long travels; inconsistent and low supplies due to small flock sizes; and, lack of capital or affordable credit services to expand business.

Despite the abovementioned constraints, the indigenous chicken enterprise holds promise for integrating women into markets due to the existence of a number of opportunities. First, there is growing demand and preference for indigenous chicken due to changing dietary habits that are driven by the need to have healthy diets. Smallholders and particularly women could tap into this growing market to increase production and sales. This will entail putting more investment into management of birds by implementing a semi-intensive system of production characterized by appropriate bio-security measures to prevent introduction and spread of diseases; supplementary feeding; and, proper housing to minimize predation. Second, there is support by government, development partners, and the Kenya Poultry Farmers Association (KEPOFA), mainly through training and construction of model chicken housing units. Third, collective action already exists among producers, which can be tapped into in order to promote collective marketing of chicken, giving women producers more bargaining power to negotiate for better terms in the market. Collective action will also facilitate assembly of indigenous chicken by traders, and provision of affordable loans from financial institutions. Fourth, there is potential for value addition in terms of slaughtering and dressing of chicken, thus providing business opportunities to expand existing

services or start new ones. Fifth, women can grow local crops to sell to millers for manufacturing of alternative “kienyeji” supplementary feeds or using local knowledge and materials, participate in production and marketing of such feeds as a business.

From the aforementioned, critical opportunities that could be exploited to improve integration of women into the indigenous chicken value chain exist alongside several challenges and constraints. It is, therefore, important that these challenges are addressed in order to improve the capacity of women to tap into the various opportunities for improving their participation and incomes from the indigenous chicken enterprise.



## REFERENCES

- Ahlers, C., R. Alders, B. Bagnol, A.B. Cambaza, M.Harun, R. Mgonezulu, H. Msami, B. Pym, P.Wegener, E. Wethli and M. Young, 2009. Improving village chicken production: A manual for field workers and trainers and egg products. ACIAR Monograph No. 139. Australian Centre for International Agricultural Research, Canberra. <http://www.aciar.gov.au/publication/MN139>.
- Barret, C. 2008. Smallholder market participation: Concepts and evidence from eastern and southern Africa. *Food Policy* Vol.33, pp. 299-317.
- Dessie, T., 1996. Studies on village poultry production systems in the Central Highlands of Ethiopia (M.Sc.thesis. Swedish University of Agricultural Sciences, Uppsala, Sweden).
- DFID. 2005. Growth and Poverty Reduction: the Role of Agriculture. A DFID Policy Paper, Department for International Development, London.
- FAO. 2011. The State of Food and Agriculture. Women in Agriculture: Closing the Gender Gap
- Fischer, E and Qaim (M, 2011) Smallholder Farmers and Collective Action: What Determines the Intensity of Participation? Paper prepared for the Seventh Annual Conference of the Verein für Socialpolitik - Research Committee Development Economics June 24-25, Berlin
- Gamba, P., Kariuki, D., Gathigi, B. (2005). Urban Domestic Consumption Patterns for Meat: Trends and Policy Implications Tegemeo Institute of Agricultural Policy and Development Working paper No 17/2005
- Gichohi, C. M., & Maina, J. G. 1992. Poultry production and marketing, Ministry of Livestock Production. Nairobi-Kenya, November, 23-27.
- Government of Kenya. 2010. Agricultural Sector Development Strategy, 2010-2020.
- King'ori, A.M., J.K. Tuitoek, H.K. Muiruri and A.M. Wachira, 2007. Protein intake of growing indigenous chickens on free-range and their response to supplementation. *International Journal Poultry Science*, 6: 617-621.
- Kingori, A. M., Wachira, A. M., & Tuitoek, J. K. 2010. Indigenous chicken production in Kenya: A review. *International Journal of Poultry Science*, 9(4), 309-316.
- Kirimi, L., and Olwande, J., 2010. Competitive Position of Kenya's Indigenous Chicken Meat and Egg Products. Unpublished Study Report, prepared for the Partnership for Safe Poultry in Kenya, Winrock International

- Mailu, S. K., Wachira, M. A., Munyasi, J. W., Nzioka, M., Kibiru, S. K., Mwangi, D. M., & Kithome, L. 2012. Influence of Prices on Market Participation Decisions of Indigenous Poultry Farmers in Four Districts of Eastern Province, Kenya. *Journal of Agriculture and Social Research (JASR)*, 12(1), 1-10.
- Munyasi, J.W., Nzioka, M., Kabiru, S.K., Wachira, A., Mwangi, D., Kaguthi, P., Kithome, J. and Muthiani, E.N. 2009. Existing and potential market opportunities for indigenous chicken in greater Machakos and Makueni districts, Paper presented at the APSK symposium Sunset Hotel, Kisumu 22-23 April, 2009
- Muthee, A.M. 2006. Kenya Livestock Sector Study: An Analysis of Pastoralist Livestock Products Market Value Chains and Potential External Markets for Live Animals and Meat, AU-IBAR & NEPDP, Consultancy report: Deloitte Consulting Ltd.
- MOLD (Ministry of Livestock Development). 2008. National Policy, Draft 1 December 2008 Department of Livestock Production
- MOLD (Ministry of Livestock Development). 2009. Ministry of Livestock Development, *Draft Sessional Paper no... of 2009 on National Poultry Policy*, December 2009
- Morris, M., Binswanger, H., Byerlee, D. and J. Staatz., 2009. Awakening African's sleeping giant: prospects for commercial agriculture in the Guinea Savannah Zone and Beyond. World Bank, Washington, DC
- Okello, Julius et al. 2010. Value Chain Analysis of the Kenyan Poultry Industry: The Case of Kiambu, Kilifi, Vihiga and Nakuru Districts. Africa/Indonesia Team Working Paper 24
- Okitoi, L.O. and E.A. Mukisira, 2001. Improved Management of indigenous chickens. KARI Technical notes series, No. 8, pp 7.
- Pitt M, Khandker S, Chowdhury O H, Millimet, D. 2003. Credit programs for the poor and the health status of children in rural Bangladesh. *International Economic Review* 44 (1): 87-118.
- Pitt, Mark M., and Shahidur R. Khandker. 1998. The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?" *Journal of Political Economy* 106 (5): 958–996.

## **ANNEX: SUMMARY OF CASE STUDIES**

### **ANNEX I: CHEBOROR KONGEI FARMER FIELD SCHOOL**

#### **History and composition of the group**

Cheboror Kongei farmer field school was formed as a self-help group in 2003 by individual farmers and registered in the same year with Ministry of Gender and Social Services. The aim of the group was to combine efforts and initiate activities which would address high poverty levels in the community and thus improve household livelihoods. Its objectives were to: promote income generating activities; train members in various farming activities such as bee-keeping, indigenous poultry production and dairy goat keeping; improve food security through production of staple foods (e.g. maize) and horticultural crops; and, assist members meet their basic household needs through merry-go round activities. The group was motivated to start growing horticultural crops because they take shorter time to mature and there was a ready market for the produce.

Initially it began with 21 members, 14 of whom were women. It has a current membership of 22, comprising of 4 men and 18 women. Some men dropped out of the group after gaining knowledge and skills through group trainings offered by extension agents, while some women joined after witnessing the benefits that members were deriving from the group. Almost all members of the group are of a similar wealth standing. The group's current core activities include horticultural farming, bee keeping and indigenous poultry production.

Group members are aged between 24 and 70 years, with majority of them being in the 30-50 age range. Most members (67%) had attained some primary education level and the remaining 33% had some secondary education. Besides group activities, members took part in other non-farm activities individually. Four women were engaged in agricultural trading and one was involved in tailoring business.

#### **Governance structure**

The group is governed by an Executive committee comprising of six officials: chairperson, vice-chairperson, secretary, treasurer and two committee members. Office bearers are elected at an annual general meeting (AGM). Potential leaders are proposed by the group members and then voting follows. After the elections, there is a handing over ceremony where newly elected members take office in presence of all group members. The group looks for visionary leaders who are elected for a one year term. The officials can be re-elected as long as the members are satisfied with their performance. Although, men are the minority in the group, they dominate leadership roles. Out of the current six office bearers, there are only two women, the treasurer

and a committee member. This may reflect the wider community's cultural norms that tend to ascribe leadership roles to men and not women.

The group has two types of meetings; weekly meetings and the AGM. Weekly meetings are for reviewing group activities. If a member fails to attend three consecutive weekly meetings, he/she may be deregistered. However, a warning is first issued on the possibility of expulsion from the group. The AGM is held at the end of the year, and it is mandatory for all members to attend.

The group has a constitution which governs member conduct and activities. The major issues highlighted in the group constitution include meeting schedules, elections of officials, projects to be undertaken, member activities/responsibilities and contributions.

Decision making is a consultative process which involves interaction between members and the executive committee. Either an official or a member may give proposals but the final decision is made by members at a meeting. There is equal participation by both elected and ordinary members of the group. Every decision is made after consultation and consensus, and office bearers do not make decisions without members' involvement.

The elected officials are mandated by the group to arbitrate when there is a disagreement that cannot be solved through voting. The committee also reconciles members who may have conflicts related to group matters/activities. The committee summons the parties in a conflict and discusses, and if there is no solution, the entire group is involved. If the group does not arrive at a solution, the offender in the conflict is de-registered from the group. In order to instill commitment among members, the group uses the laid down procedures in the by-laws to punish the offenders.

The major conflict experienced by this group was failure by members to undertake assigned duties especially in horticultural activities. The group had farms under onions and kales and each member was allocated specific days to do watering, but some members did not honour their roles. This became a source of conflict which was threatening to break up the group. As a result, they suspended this activity for some time. Afterwards the group met and a resolution passed that each member contributes Ksh 20 per month to give one member to undertake the activity on behalf of the group. This contribution was considered as a motivation rather than a payment to the member who undertakes this activity. However, kales production was stopped due to low prices and unreliable rainfall.

To ensure transparency and accountability from members and leaders, all money received is recorded and members informed before it is given to the treasurer. The money is handed over to the treasurer in the presence of all members in attendance. In a subsequent meeting, members are shown the deposit slip to verify that the previous collection tallies with what was deposited.

## Enrollment of members into the group

Any person who is interested in joining the group pays a non-refundable membership fee of Ksh.100 and has to strictly adhere to the by-laws of the group. Before a member is admitted into the group, he/she has to go through the following procedure:

- A potential member expresses interest to join the group through any member who communicates this to the group.
- The group members then scrutinize the reputation of the potential member in his/her absence.
- All group members are involved in the decision on whether to admit or reject the potential member into the group.
- If the members are satisfied with the report from the executive committee, the new member is invited to attend the next group meeting. The member must be keeping indigenous chicken as a condition to be accepted in the group.
- During the meeting, the constitution is read to the new member and if the member agrees to abide by it, he/she gets admission into the group after paying registration fee of Ksh.100.

## Performance of group activities

The group is currently involved in horticulture farming, bee-keeping, and rearing of dairy goats and indigenous chicken. Horticulture farming involving onions and sukuma wiki was started in 2003, while the other activities were started in 2007. The group noted that all activities except horticulture were highly successful for various reasons as presented in Table A1.

**Table A1: Performance of activities undertaken by the group**

Activity	Year started	Performance rating	Reason for rating
1. Horticulture	2003	Not successful	<ul style="list-style-type: none"><li>• High input prices</li><li>• Low prices</li><li>• Unpredictable weather conditions such as drought</li></ul>
2. Bee keeping	2007	Highly successful	<ul style="list-style-type: none"><li>• Source of income and food</li><li>• Easy to maintain</li><li>• Ready market</li><li>• High returns</li></ul>
3. Dairy goats	2007	Highly successful	<ul style="list-style-type: none"><li>• Source of milk</li><li>• Easy to maintain</li><li>• Ready market</li><li>• Milk fetches high prices</li></ul>
4. Indigenous chicken	2007	Highly successful	<ul style="list-style-type: none"><li>• Easy to manage</li></ul>

			<ul style="list-style-type: none"> <li>• Very high hatching rates</li> <li>• Increasing demand for local chicken</li> </ul>
--	--	--	---

The major partner of this group has been the Government of Kenya through the Ministries of Agriculture, and Livestock Development which have offered training on horticulture, bee-keeping, and rearing of cattle and goats. The group also received a grant of Ksh 120,000 in 2007 from Njaa Marufuku Kenya (NMK) to start a bee keeping project. They purchased twenty five beehives that are jointly owned and whose returns go to the group kitty. The group used income derived from sale of honey to diversify into dairy goat keeping, where they have a goat placement programme for its members (i.e. the group buys goats for its members in turns). They have also purchased one beehive for each two group members to manage. The two members share proceeds from sale of honey equally to support them in meeting their daily needs. The group members have also been trained on financial literacy by Equity bank.

### **Production and marketing of indigenous chicken**

Production of indigenous chicken is one of the activities undertaken by Cheboror Kongei farmer field school. Women are involved in supply of breeding stock, daily management of the enterprise, and sale of chicken at the farm gate and in local markets, while men are involved in construction of chicken houses and sale of chicken in markets outside the local area (Table A2).

**Table A2: Participation of group members in chicken production**

<b>Activity</b>	<b>Persons responsible</b>	<b>Reason</b>
Construction of chicken houses	Men	<ul style="list-style-type: none"> <li>• Culturally, this is considered as tedious work and so undertaken by men</li> </ul>
Supply of breeding stock	Men and Women	<ul style="list-style-type: none"> <li>• Women in this community engage in small stock production and are knowledgeable in selection of breeding stock</li> <li>• Men are involved in selection of breeding stock because they are major decision makers and provide labour and capital for the enterprise</li> </ul>
Production	Women	<ul style="list-style-type: none"> <li>• The women spend most of their time doing household activities and are available to undertake production and management of indigenous chicken enterprise</li> <li>• It is their major source of income and are responsible for its production</li> </ul>
Trading of chicken beyond the farm-gate	Men	<ul style="list-style-type: none"> <li>• Time-consuming and involves a lot of travelling</li> </ul>
Marketing of chicken locally	Women	<ul style="list-style-type: none"> <li>• Women own and can sell chicken without asking their spouses</li> <li>• It is their major source of income</li> </ul>

While production is done individually, marketing of indigenous chicken and eggs is done collectively. The members acknowledged that as a group, they are able to negotiate for better prices and to deliver volumes to meet demand. Currently, the main marketing channel available for them is brokers. The brokers offer better prices than traders in the local market and save farmers time since they buy at the farm gate. However, the group is contemplating to penetrate into the outside market in order to get better prices.

All the group members are aware of the requirements imposed by the brokers. The main attributes checked by brokers who determine the price include size/weight and health of the birds. Revenues generated from collective sale of poultry are distributed to members depending on the number of birds a member delivered. However, earnings from sale of honey produced from the group hives and from goat milk are divided equally among the members regardless of gender or position in the group. All the members are involved in decision making regarding how much of the earnings are to be shared.

The main challenges facing the group include outbreak of diseases and low market prices. Diseases sometimes wipe out an entire flock and in such cases, members contribute money to assist their affected colleagues restock.

### **Financing of group activities**

This group largely relies on members' contribution and earnings from sale of honey, goat milk and vegetables to finance its activities. However, the group also received a grant from NMK in 2007 which they used to roll out the bee keeping project. This project has helped the group to diversify its income sources. Some of the money from these income generating activities has been helpful during annual renewal of the group certificate, issued by the Ministry of Gender and Social Services.

The group members normally get market information from local market centers and agricultural extension officers.

### **Services and benefits received from the group**

Members receive the following services and benefits through the group:

- i. Training: from extension officers from the Ministries of Agriculture and Livestock Development on good agricultural practices
- ii. Sharing of information, experiences and ideas among group members
- iii. Collective vaccination and treatment of indigenous chicken
- iv. Collective marketing of indigenous chicken, eggs and honey which enables them get good prices
- v. Dairy goat placement
- vi. Bee-hives placement

The community (non-members of the group) also benefits from the group activities in the following ways:

1. Those that have adopted bee-keeping are able to access honey harvest kits from the group at no fee
2. They buy honey from the group at a discounted price of KES 200 per kilogram compared to KES 500/kg for other buyers
3. They are also invited for training sessions organized by the group

### **Challenges and opportunities**

Despite reporting success in implementing their core activities, the group has some challenges. The horticulture activities have been affected by drought and high input prices especially chemicals to control diseases. The group noted the need for: training on rainwater harvesting so that they can use irrigation during the dry season; packaging of chemicals in smaller affordable quantities; and information on the right chemicals to use for various diseases and pests.

For indigenous chicken production, the main challenge has been seasonal disease outbreaks which wipe out the flock. On the other hand, bee-keeping activities have been hampered by inadequate training on honey harvesting.

### **Training needs**

The group identified the following as key training needs:

1. How to detect symptoms/signs of different poultry diseases in order to minimize losses during disease outbreak
2. Training on use of irrigation techniques for farming by the small scale farmers
3. Educational tours in order to provide exposure to new farming technologies
4. Developing market linkages and obtaining information on requirements for export markets that would assist the group better prices.

### **Reasons for success**

The group attributes its success to the democratic approach to activities and issues in the group; commitment to group activities; and, election of visionary leaders who are able to lead and guide its members to achieve their objectives.



## **ANNEX II: KANINI KASEO SELF-HELP GROUP**

### **History and composition of the group**

The group was formed in 2009 by individual members and registered in 2010 as a self-help group with the Ministry of Gender and Social Services. The idea of forming the group was mooted by the government agricultural extension staff in the area to facilitate distribution of free certified maize seeds which were to be given by the Ministry of Agriculture and to obtain financial assistance from any donor with interventions in that area.

At inception the group had 17 members who were all women. Current membership stands at 25 (5 men and 20 women). More members joined the group after observing the labour sharing initiatives among group members which did not only serve to reduce the burden of land preparation, but was also a source of income to the group since the group offered this service at a fee to both members and non-members. This initiative has enabled the group members increase their share contribution since each participant is paid Ksh 50 which is deposited into the group account every time they participate in this activity. This payment is made to the group by the individual who solicits this service from the group.

The group finances its activities through contributions from its members such as the chicken placement programme where each member was given KES 250 to purchase chicken. The group also has a farm and the proceeds from sale of produce mainly green grams and cowpeas are saved in a group account to be utilized later for the benefit of its members. Other contributions which members make to the group include sharing of ideas, group labor and contributing cash to run their activities.

The age-range for the group members is 31-70 years but majority of the members are between 45 and 50 years. About 80% of members have attained some primary education while the rest have some level of secondary education. Besides group activities, members take part in other non-farm activities such as teaching, electrical work, masonry and trading. However, most members are small scale farmers who normally grow maize, beans, green grams, pigeon peas and cowpeas. They also keep local breeds of livestock with all members owning indigenous chicken. The group is heterogeneous in terms of wealth status of the members, but there is no discrimination based on a member's wealth standing. Everyone is allowed to join the group regardless of wealth status as long as they abide by the constitution.

### **Governance structure**

The group is governed by a committee consisting of chairperson, vice-chairperson, secretary, assistant secretary, treasurer, three committee members and a coordinator. The leadership roles are dominated by women who are the majority in the group; all of them are women except the coordinator. These positions are supposed to be filled through voting by group members at the

annual general meeting (AGM). Potential leaders are proposed by the group members and then voting is done by acclamation. Members propose people whom they think are fit and capable to lead them. The elected officials are supposed to serve for one year. The group has a constitution which governs its members. The major issues highlighted in the constitution include elections rules, conditions for membership, disciplinary procedures, and deregistration and withdrawal of members from the group. Although the constitution stipulates that elections should be conducted annually, no election has been held since the inception of the group because the members are satisfied with the current leadership.

The group meets weekly for the purposes of a merry-go-round. If a member fails to attend three consecutive meetings without sending apologies or contributions, he/she may be deregistered but a warning is first issued on the possibility of expulsion from the group.

Decision making in the group is a consultative process which involves interaction between members and the office bearers. Decisions are made after discussions and concurrence between officials and members. There is equal participation by both elected and ordinary members of the group, and so office bearers do not make decisions without members' involvement.

The office bearers are mandated by the group members to arbitrate when there is disagreement. So far, the group has experienced only one dispute where an official withdrew Ksh 2,000 from the group account to contribute to a Harambee. This was resolved after the officials explained the short notice which necessitated the action before deliberation at a group meeting.

To ensure transparency and accountability, deposit slips are availed to members to confirm that weekly contributions and any other money received by the group has been put in the group's account. The members also have access to bank statements, scrutinize them and report any anomalies. Any member contributions to the group are recorded and banking slips kept by the secretary for future reference.

### **Enrollment of members into the group**

Any person interested in joining the group is charged a non-refundable fee of Ksh.100 and has to strictly adhere to the by-laws of the group. Membership into the group follows a laid down procedure:

- A person expresses his/her interest to any group member who communicates this to the secretary of the group
- The officials through the secretary communicate the message to the group members who then scrutinize the reputation of the potential member in his/her absence
- If the members are satisfied, the potential member is invited to attend the next group meeting

- During the meeting, the potential member is taken through the constitution of the group. If the person agrees to abide by the constitution, he/she gets admission into the group after paying a non-refundable membership fee Ksh.100.

### **Performance of group activities**

The group was involved in various activities which the members rated as shown in Table A3. Group farming and provision of labour were rated as highly successful.

**Table A3: Performance of activities undertaken by the group**

<b>Activity</b>	<b>Year started</b>	<b>Performance rating</b>	<b>Reason of rating</b>
Indigenous chicken production	2012	Not successful	<ul style="list-style-type: none"> <li>• Poultry disease outbreak which killed many birds</li> <li>• Inadequate feeds due to unfavorable weather conditions</li> </ul>
Merry-go-round	2011	Highly successful	<ul style="list-style-type: none"> <li>• Helped members to meet basic household needs</li> </ul>
Group farming	2011	Not successful	<ul style="list-style-type: none"> <li>• Inadequate rains resulted in low yields</li> <li>• Poor soil fertility</li> </ul>
Provision of group labour	2011	Highly successful	<ul style="list-style-type: none"> <li>• Earned income for the group</li> </ul>

The group received training from Africa Institute of Social and Economic Development (INADES) Formation on group formation, preservation of traditional crops, water harvesting techniques and soil conservation measures.

### **Production and marketing of indigenous chicken**

The group participates in production of indigenous chicken, where men and women participate in different activities as shown in Table A4. Women are involved in all production activities except construction of poultry structures. While women sell chicken in the local markets, men are involved in sales outside the area. This is because women have more bargaining experience (business language) than men, and are not afraid to carry chicken to the market (men are treated suspiciously when they are seen carrying chicken in the area).

**Table A4: Participation in chicken production activities**

Stages	Person responsible	Reason
Construction of chicken houses	Men	<ul style="list-style-type: none"> <li>• Culturally, construction work is done by the men in this community</li> </ul>
Supply of breeding Stock	Women	<ul style="list-style-type: none"> <li>• Women are more knowledgeable in selection of good breeds</li> <li>• Indigenous chicken is mainly a woman's enterprise</li> </ul>
Production	Women	<ul style="list-style-type: none"> <li>• It is their major source of income for daily household needs</li> <li>• Women spend much time at home attending to household chores</li> </ul>
Trading beyond the farm-gate	Men	<ul style="list-style-type: none"> <li>• It involves a lot of travelling using bicycles which is not convenient for women</li> </ul>
Marketing at the farm gate and in local markets	Women	<ul style="list-style-type: none"> <li>• Because they own the chicken</li> <li>• Brokers buy from the farm-gate and it is women who are mainly found at home</li> </ul>

Marketing of indigenous chicken and eggs is done by members individually. They are sold to brokers from Mwala market. All group members are aware of the requirements imposed by brokers. The main attributes checked by the brokers who determine the price include the size/weight and health of the birds. The group gets market information from their fellow farmers and neighbours. The revenues generated from farming and group labor is still in the account and no dividends have been given out.

The main challenges facing the group include poor prices offered by brokers and disease outbreaks. Due to unpredictable weather patterns in the area, yields from the group farm have been low and the group disposes them immediately.

### **Services and benefits received from the group**

The benefits members get as a group include welfare assistance among its group members and chicken placement. The group assists its members mainly by sharing information especially on the poultry management. The surrounding community has also benefited from the group through digging of water channels as a group for the community water project. The group has also assisted in constructing feeder roads.

### **Challenges and opportunities**

The group has faced numerous challenges. These include poultry disease outbreaks, high cost of poultry feeds, lack of farm inputs, low soil fertility, poor infrastructure, and unpredictable and inadequate rainfall that has affected yields. The members suggested that there is need for training and facilitation to enable them embrace rain-water harvesting for use in irrigation. They also

noted that only a few people have livestock which can produce enough manure for their farms, and so reducing fertilizer prices would help in improving soil fertility. Other suggestions for dealing with identified challenges include: training farmers on how to detect symptoms of various poultry diseases and how to prevent and even manage outbreaks; training farmers on preparation of poultry feeds using locally available materials and to design suitable chicken structures; provision of poultry vaccines in small doses that are affordable for farmers with fewer birds.

### **Training needs**

The group identified the following as areas in which they require and would benefit from training:

- i. Poultry management with regard to breeds, feeding, vaccination, and housing structures
- ii. Water harvesting techniques. The participants wanted to be trained on the cheapest, simplest and most effective methods of constructing sustainable water harvesting systems, which allow women to dedicate more time to income-earning tasks e.g. roof catchments, shallow wells, sand dams.
- iii. Soil conservation measures i.e. agronomic, vegetative such as planting vegetative strips, windbreaks and structural (digging of terraces and cut off drains).
- iv. Drought resistant crop varieties suitable for the area particularly for maize, cowpeas, pigeon peas, sorghum and millet.

### **Reasons for success**

The group attributes its success to trustworthiness, transparency and accountability, sound management and understanding among its members.