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# PARTNERSHIP FOR SAFE POULTRY IN KENYA (PSPK) PROGRAM VALUE CHAIN ANALYSIS OF POULTRY IN TANZANIA

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## DISCLAIMER

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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## **Acknowledgments**

In August 2010, Winrock International commissioned Mr. Raymond Mnenwa to undertake a study on poultry value chains in Tanzania. A number of institutions and individuals have contributed in one way or another towards the successful completion of this report. First, I wish to thank the various institutions and individuals who spared time for face-to-face discussions during the study. Secondly, I would like to thank the following persons: Dr Bonface Kaberia for providing a thorough introduction to the study and for the arrangements made for the study in Tanzania; Mrs Liwa for logistical support provided to me; and Mr. Joachim Balakana for data collection arrangements and support. Lastly, but not least, my heartfelt thanks to Ally Ngendello for providing useful information and arranging for interviews in Mwanza and Shinyanga.

## **Introduction**

### **Background**

This report summarizes the findings of a study conducted in Tanzania as one of the three studies commissioned by USAID in three countries of Tanzania, Uganda, and Ethiopia, following a successful implementation of the Partnership for Safe Poultry in Kenya (PSPK) pilot project by Winrock International. The goal of the project is to promote safe poultry production and marketing systems that incorporate freedom from poultry diseases, and generate high levels of income for smallholder families. The project provides skilled volunteer technical assistance to organizations, government agencies, NGOs, donor-funded projects, research centers, private firms, and private producers involved in the poultry sector. The technical assistance targets increasing efficiency, improving production and marketing, and improving biosecurity of smallholder poultry production. The project obtained a one-year extension in March 2010 to consolidate achievements made in the first year of implementation and also explore opportunities for replicating the initiative regionally. As part of this and for purposes of regional replication, the following two key activities were envisaged:

- Value chain studies to illustrate opportunities for poultry sector competitiveness in Uganda, Tanzania, and Ethiopia. Reports from these would be synthesized to provide a regional perspective for making the sector competitive.
- Key value chain actors from those countries would be engaged in study visits to Kenya with a view of sharing PSPK lessons learned and experiences in Kenya.

Based on this background, Winrock International was commissioned to conduct value chain analyses of the poultry industries in Ethiopia, Tanzania, and Uganda. The purpose of the studies was to complement the recently completed poultry value chain study in Kenya and provide a snapshot of the opportunities in the poultry subsector in East Africa. Three consultants, one from each country, were identified from a list obtained through credible sources. The Terms of Reference (TORs) were shared with them, and a final decision on when each could start was arrived at in August 2010. In Tanzania, Winrock International engaged Raymond Mnenwa to undertake the Tanzania poultry value chain analysis.

### **Objectives of the study**

The general objectives of the study were to conduct a comprehensive poultry value chain analysis based on the existing information combined with information from key informants in the subsector. To guide this study, some specific objectives are outlined in the TORs as follows:

- Provide a market outlook for poultry to 2020, covering demand for poultry and eggs in the country, as well as per capita consumption of poultry and eggs in 2010, and use these to project demand in 2020 based on growth in general population and urbanization.
- Provide supply outlook covering key poultry production regions in the country based on density of poultry populations (include maps) and cereal and oilseed production in key regions so that these can be overlaid with bird density to identify key production areas for interventions and investments.
- Describe the trade in poultry, eggs, and poultry meat covering imports and exports of live birds, day old chicks (DOCs), eggs, and meat to include domestic, regional, and international trade from 2002 to 2009;

- Provide an assessment of the enabling environment including government’s current policies which contribute or hinder the competitiveness of the industry in each country; import policy on poultry meat and taxes on poultry equipment and other inputs; credits or subsidies to feed millers, hatcheries, producers, and marketing agents; government projects that support the industry, e.g., health, production, etc.
- Conduct value chain mapping covering key channels for poultry and eggs from input delivery, farm production, distribution, processing, and consumption; key actors at each stage, e.g., numbers of participants; volume of sales; constraints faced by key actors which contribute or hinder the competitiveness of the industry in the country; and opportunities for contributing to competitiveness of the industry.
- Assess price mark-ups along the value chain price of poultry and eggs at each stage of the value chain for live poultry (1.2 kg live bird) and eggs (plate of 30 eggs or one egg).
- Support projects for the poultry industry public sector projects, private sector projects, and international donor projects.
- Determine interventions and investments that would positively impact the development of the poultry industry in each country; and that would positively impact smallholder involvement in contributing towards the competitiveness of the industry in each country.

## Structure of the report

The remaining part of the report is organized into four main sections. Section 2 covers a methodology for the study, including study areas, method, and approaches. Section 3 presents findings of the study covering poultry market outlook, trade in eggs and meat, and value chain mapping, support projects. This is followed by Section 4 which covers suggested interventions.

## Study Methodology

### Study areas and respondents

This is a national study; however, because of time and resource limitation, very few areas were visited to gather information from key informants to complement the information generated from secondary sources. The consultant visited Mwanza and Shinyanga in western Tanzania; Coast and Dar es Salaam in the Eastern Zone; and Tanga in the Northern Zone. The areas were selected due to their large numbers of poultry as well as their market potential. **Table 1** shows the categories and the number of respondents from each category.

**Table 1: Categories and respondents interviews**

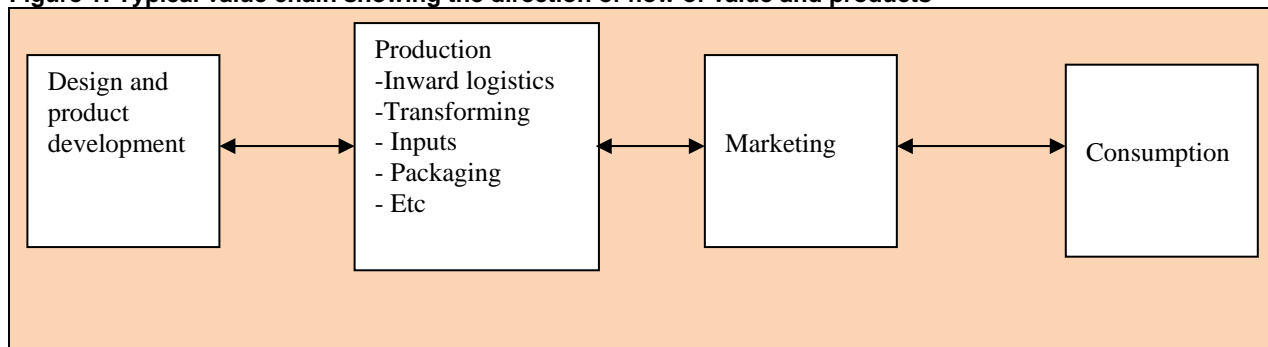
Category	Mwanza	Shinyanga	Coast	Tanga	Dar es Salaam	Total
Producers	0	15	5	0	0	20
Traders	10	11	0	5	2	27
Input suppliers	1	2	2	0	1	6
Government	1	2	1	2	6	12
Total	12	30	8	7	9	68

For each category, discussions were held regarding challenges, constraints, and opportunities in the poultry subsector.

## Study conceptual framework

Value chain analyses describe the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use (Kaplinsky and Morris, 2000). **Figure 1** presents the general form of a value chain. The figure shows the flow of both value and products. The figure illustrates that while value flows (leftward arrows) from the consumers to the primary producers, products flow in the opposite direction from the primary producers to consumers (rightwards arrows). The two way nature of the chain implies that for example, specialized design agencies influence the nature of the production process and marketing, but are in turn influenced by the constraints and requirements in these downstream links in the chain. It is important to emphasize that it is the constraints and requirements of the consumer that matter most in the value chain.

**Figure 1: Typical value chain showing the direction of flow of value and products**



Source: Kaplinsky and Morris, 2000

Kaplinsky and Morris (2000) reveals that in the real world, value chains are much more complex because the world of production and exchange are heterogeneous. Value chains differ both within and between sectors and are based on national and local contexts. So there is no mechanistic way of applying value chain methodology. Each chain will have particular characteristics, whose distinctiveness and wider relevance can only be effectively captured and analyzed through an understanding of the broader issues which are involved is needed. Consequently, the methodology used in this study proceeds as follows:

- description of the poultry industry in Tanzania: production, consumption, markets, etc.
- assessment enabling environment
- subsector analysis and mapping
- value chain mapping: coordination, prices, constraints, opportunities, projects, and interventions

## Study methodologies and work plan

The consultant used a combination of various methods. These included desk work, observation, interviews, and focus group discussion with key stakeholders. For desk work, the consultant used various relevant documents (**References**). The desk work was followed by consultations with the key stakeholders. The consultant held discussions with poultry keepers, traders, input suppliers, and government officials. For producers and traders, focused groups were held in Mwanza, Shinyanga, and Handeni. The information collected from secondary and primary sources was analyzed qualitatively and quantitatively, depending on the type of information and the nature of issues covered.

The assignment was conducted in 19 days from August 27, 2010, to September 20, 2010. The work plan for the study is provided in **Table 2**.

**Table 2: The study work plan**

Date	Activity	Duration	Location
27/08/2010	Designing data collection tools	1	Dar Es Salaam
28-29/08/2010	Reviewing literature on poultry	3	Dar Es Salaam
30/08-1/09/2010	Interviews with key actors	3	Mwanza/Shinyaga
3-6/09/2010	Interviews with key actors	4	Da Es Salaam
7-9/09/2010	Interviews with key actors	3	Tanga/Coast
10-11/09/2010	Data analysis	2	Dar Es Salaam
12-20/08/2010	Report writing and submission	3	Dar Es Salaam

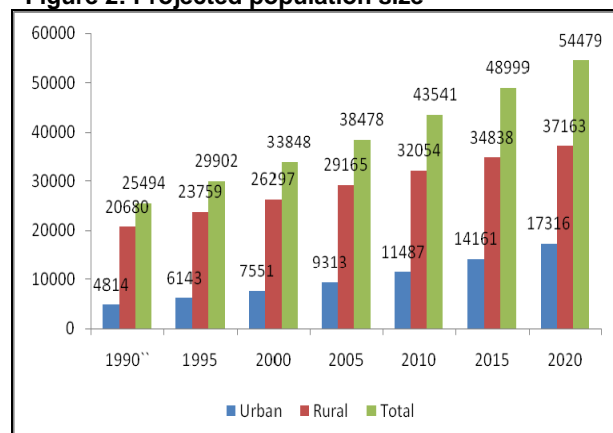
## Findings

### Market outlook

#### Demand for poultry and eggs

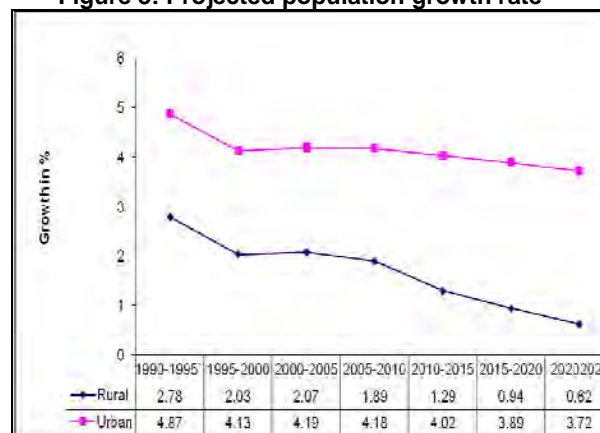
The demand for poultry and eggs is influenced by a number of factors, including population growth, urbanization, and income growth. **Figures 2 and 3** summarize the projections for urban and rural population size and growth rates in Tanzania.

**Figure 2: Projected population size**



Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2007 Revision*, <http://esa.un.org/unup>, May 2008

**Figure 3: Projected population growth rate**

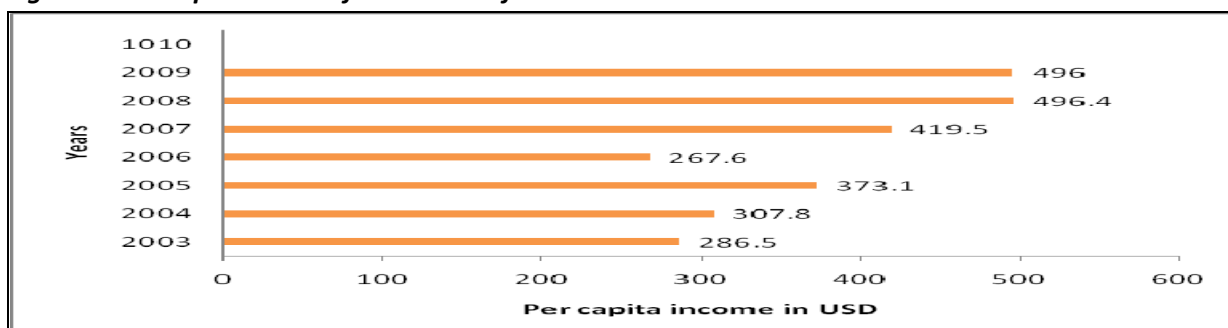


Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2007 Revision*, <http://esa.un.org/unup>, May 2008

The two figures show respectively that currently, Tanzania has more than 43 million people, out of which 32 million live in rural areas and 11 million live in urban areas growing at 1.3% in rural areas and 4.0% in urban areas. On the other hand, **Figure 4** presents the per capita income per annum for Tanzania since 2003.



**Figure 4: Per capita Income for Tanzania from 2003 to 2009**



Source: World Bank 2010, <http://search.worldbank.org/data>

The figure demonstrates that the per capita income has been growing though at a lower rate than the population growth. The figure shows that the average per capita income is USD 496 (equivalent to approximately Tzs 700,000). The per capita income grew at a rate of approximately 4% per annum between 2003 and 2010.

Based on the population size in **Figure 2** of 43 million people and the average consumptions rates for Sub Saharan Africa of 150 eggs and 10 kgs of poultry meat per annum (FAO, 2002), the potential demand for eggs and poultry meat is estimated at approximately 6,500 million eggs and 430,000 tons. These statistics imply that the potential demand for poultry and eggs surpasses supply, though the effective demand is likely to be lower because this is determined by many other factors including the level of income, and taste and preference.

#### Consumption of poultry and eggs in 2010

It is estimated that the per capita poultry meat and eggs consumption in the country is 1.2 kg of poultry meat and 17 eggs per annum. These levels are extremely low when compared to the overall per capita consumption levels for Sub Saharan Africa. The per capita consumption for Sub Saharan Africa is approximately 147 eggs and 9.5 kgs of poultry meat per annum. The per capita consumption levels in Tanzania are basically estimated based on per capita availability of poultry and eggs assuming that the poultry and eggs made available are actually consumed. However, most people in the country go without poultry meat and eggs due to uneven distribution and low purchasing power. Low purchasing power results in low domestic demand for poultry products. The pattern of the consumption of poultry products is influenced by income levels but more importantly by consumer tastes and preferences. Most of the poultry products are consumed in urban areas. Based on these figures, total consumption of poultry meat and eggs is estimated at 721 million eggs and 51,600 tons of poultry meat per annum.

#### Demand in 2020 projection

Demand in 2020 is estimated based on the average consumption rates for Sub Saharan Africa of 150 eggs and 10 kgs of poultry meat per annum (FAO, 2002) and the projected population in 2020 for Tanzania. It is, therefore, expected that the potential demand will be 8,100 million eggs and 64,800 tons of poultry meat per annum. These statistics imply the potential demand for poultry and eggs is far higher than the actual consumption of eggs and poultry meat. This suggests that many people in Tanzania go without

eggs and/or poultry meat, which is an indication that the subsector faces also a demand problem. Efforts to promote poultry production need to go hand-in-hand with stimulation of consumption of these products. It is important to note that demand for eggs and poultry meat can be influenced by many other factors. The main demand drivers include income, prices of substitutes, and changing lifestyles. Above, we have already indicated that the average per capita income is Tshs 700,000 (equivalent to USD 496) growing on average at a rate of approximately 4% per annum. This income level can buy approximately 2,300 eggs or 80 birds of 1.2 kgs each per annum. If Tanzanians were living on eggs only, then one would consume six eggs per day. And if they were living on poultry meat only, then they would be consuming 0.26 kgs of poultry meat per day. These figures are extremely low. However, the fact that the income is growing, demand for poultry meat is likely to grow considering that poultry meat is not an inferior good.

Poultry meat competes with red meat, fish, and pork. If supply of these products will go up, resulting in lower prices, the likelihood is that people will tend to substitute poultry meat with these products.

### Poultry production and supply

#### ***Production systems***

There are two poultry industry systems in Tanzania. These are traditional and commercial production systems. The traditional production system mainly comprises the small-scale village or backyard poultry system (local chicken production system), which is the dominant one. Indigenous chickens are the main types found in the traditional system and comprise over 70% of the national flock. The majority of chicken are kept in small-scale extensive traditional systems in rural areas; they supply 70% of the poultry meat and eggs consumed in rural areas and about 20% in urban areas. The traditional production system is performed by almost every rural household.

The other system is the semi-intensive poultry production system normally practiced in peri-urban and urban areas in the country on a commercial basis. According to Msami (2007), intensive poultry production is non-existent in Tanzania. Only semi-intensive operations can be found involving parent stock and hatcheries, but also raising commercial poultry (layers and/or broilers). These operations are found mainly in Pwani, Dar es Salaam, Arusha, Mwanza, Mbeya, and Ruvuma. The operations are medium-scale, embracing different levels of integration. Production of DOCs is carried out in hatcheries most of which are located in Dar es Salaam and Coast regions. **Annex 2** shows existing hatcheries and their capacities in Tanzania. A total of 28.7 million DOCs were produced in 2006/07 compared to 26.8 million produced in FY 2005/2006. As production of DOCs does not satisfy demand, importation becomes inevitable. In this regard about 782,550 chicks were imported in FY 2006/07 compared to 2.1 million which were imported the previous year. Moreover, 3.1 million eggs for hatching were imported in 2006/2007 compared to 8.4 million of 2005/2006. The decline in number of imported chicks and eggs is attributed to the imposition of an import ban as a result of the Avian Influenza (AI) threat.

The available information shows that factors constraining development of the poultry industry include prevalence of diseases, poor quality feeds, inadequate technical support services, low genetic potential of the local breed, and weak farmer organizations. The desk study has shown that some strategies to improve the poultry industry have included use of improved breeds for crossbreeding purposes; operationalization of programs to control diseases such as Newcastle Disease; promotion of the establishment of breeding (parent and grandparent) farms; and hatching facilities.

#### ***Poultry flock size***

There are no reliable up-to-date statistics on poultry production in Tanzania. Most of the information presented in this section has been borrowed from Msami (2007). According to Msami, the last census was

done in 2003. The estimates for 2002/2003 were in the order of 34,827,675 chickens (MOA/NBS 2002/2003), out of which, approximately 32,559,208 were local village chickens kept predominantly in the rural areas. Commercial birds included 589,563 broilers and 1,222,267 layer chickens kept by smallholder farmers, and 456,638 birds (both broilers and layers) on large-scale farms. There were 1,362,216 ducks and 213,545 turkeys. Other types of poultry kept include guinea fowls and pigeons. Over the period 1995 to 2003, the total chicken population on the mainland increased at a rate of 2.6% per year; this principally a result of an increase in the indigenous chicken population. Based on these figures, we can extrapolate the number of chickens. By extrapolation, assuming the same growth rate to have taken place in the period 2003 to the present, then the total number of chickens in 2010 would be 41,682,716. Msami (2007) reports that most chicken-keeping households (94%) keep less than 30 chickens per household and these households accounted for 79% of the chicken population as on October 1, 2003. Only 3% of households kept over 40 chickens per household, representing 21% of the total chicken population indicating a small number of large production units.

### ***Poultry production levels***

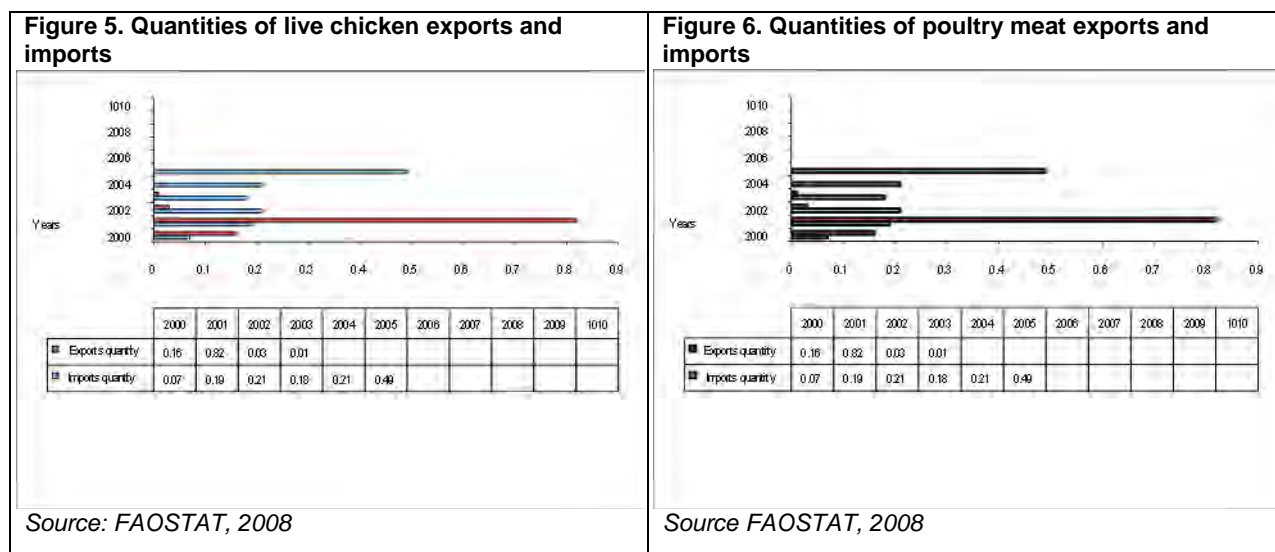
Similarly up-to-date figures for production of eggs are not available. Analysis, therefore, is based on the 2003 sample census. Using the statistics from the census, FAO (2007) reports that the number of eggs produced by smallholders in Tanzania during 2002/03 was 367,955,297; of which 351,941,008 eggs were produced on the mainland and 16,014,289 in Zanzibar. Most of the eggs produced in Tanzania were from Mbeya (16%); Arusha (9%); Mwanza (9%); Tabora (7%); Iringa (6%); and Dar es Salaam (6%). This represents 52% of the total egg production in Tanzania from smallholders (National Sample Census of Agriculture 2002/2003). According to Msami (2007), the difference (542,044,703) could be accounted for as a result of production from large-scale commercial farms having been considered. In Tanzania, 68% of eggs from indigenous chickens were sold. On the mainland the average price per egg was Tsh 300 (US \$ 0.02). The percentage sold can reach more than 80% as in Dar es Salaam (97%); Lindi (84%); Kigoma (83%); Dodoma (82%); and Arusha (81 %). This percentage can be as low as 38% in Mwanza, the highest egg producing region in the country. Eggs not sold are used for consumption by the family and some will be incubated for hatching.

### **Cereal and oil seed production**

<b>Year</b>	<b>Maize</b>	<b>Sorghum</b>	<b>Paddy</b>	<b>Wheat</b>
2000	2009.32	667.02	782.09	32.79
2001	2578.50	742.24	867.69	89.32
2002	2704.85	833.73	987.91	76.53
2003	2321.95	487.89	1094.24	73.72
2004	3157.42	757.42	1059.09	66.65
2005	3218.54	714.34	1168.29	101.91
2006	3423.03	711.63	1238.56	109.53
2007	3202.06	971.20	1341.83	82.78
2008	3555.83	861.39	1346.34	92.40
2009	3326.20	709.31	1334.80	95.12

## Trade in Eggs and Meat

### Imports and exports (birds, chicks, eggs, meat) 2002-2009



### Domestic markets

In 1986, the Tanzanian government implemented the Structural Adjustment Program (SAP), supervised by the International Monetary Fund (IMF) and the World Bank. Following SAP reforms, the Tanzanian economy was converted from enormous government interference to a market-oriented one with increased private sector involvement. In response to fiscal pressure imposed by the previous state monopoly and price control of food markets, the government began a program of food market liberalization in 1984. The current poultry markets are dominated by small traders who operate as village vendors, distant wholesalers, and retailers. The structure of the poultry marketing system for local chicken consists of farm level marketing, secondary traders marketing level, and retail level marketing.

According to Msami (2007), the small-scale farmers usually depend on itinerant middlemen to sell their produce and often end up being denied fair prices. The major means of transportation of eggs in Dar es Salaam is by means of bicycles, whereby several egg trays are packed on the back seat of the rider; a convoy of such bicycles from the site of production (from the outskirts of Dar es Salaam, mainly Kitunda and Kipunguni) is daily routine. Msami (2007) suggests that farmers should form a group or association that will assist with marketing of eggs and poultry meat. A good marketing channel among the poultry producers, retailers, sellers regulated by an association may help small farmers from being exploited by the traders. In Tanzania, local chicken is more popular because of the perceived taste, even in the main towns and cities. Farmers are generally confident that there will always be a market for their output, even if production rises. However, farmers do express concerns that they are being ripped off by middlemen along the marketing chain. Several poultry stakeholders talk about much needed improvements to marketing systems, and some go further to suggest the formation of marketing cooperatives as a possible solution.

There is no evidence to suggest that markets in Tanzania are uncompetitive. Tanzania has a more highly developed market system than a number of countries in Africa like Mozambique (Woolcock, 2003). For example in the Lake Zone of Tanzania, farmers have multiple choices in selling their chickens as they can take their chickens to Shinyanga town and/or Mwanza town and sell direct to a retailer at the market; and

they can sell to a trader who does the same thing, except in larger lots of around 100 birds. The trader would have bought the chickens from a number of farmers. These traders reside in the same village or come to the village to purchase chickens and use public transport to get to market.

For exotic chicken, the marketing system is composed of market retailers, fresh foods shops, supermarkets, hotels, and restaurants. Large-scale poultry farmers have their own transportation facilities, and some in Dar es Salaam have a cold chain system which ensures the maintenance of good quality eggs and dressed broiler meat. On the other hand, small-scale farmers sell live broilers directly to consumers or middlemen. The live broiler chickens are caught and transported to the market by different means (pickups, weaver baskets on bicycles, and motorcycles). At the market, they are placed in chicken stalls for display. From here, the birds are sold as live birds or slaughtered and sold as meat. Dressed chicken and table eggs are sold to the consumers through a number of channels. These are: 1) farm gate, e.g., at Interchick Company; 2) sales outlets (a series of which have recently been set up throughout Dar es Salaam); 3) distributors; 4) hotels, restaurants, and street food vendors; 5) supermarkets; 6) open markets.

Based on the findings in this study, the main impediments to the current poultry marketing system relates to its institutional framework. It was found that agricultural markets are ill-governed. The lower levels of institutions are still underdeveloped and unable to function as credible supporters to players at the national and export market. Especially, farmer organizations have continued to be weak and underdeveloped. Due to historical reasons, cooperatives are not developing as expected, even after substantial improvements in the cooperative policies. The institutional capacity to foster organization of poultry subsector actors is also lacking at the local level. Most of the local government authorities lack commitment to promote the actor organizations. Other institutional problems associated with the current poultry marketing system include weak legal framework to enforce contracts; long supply chains between known parties which usually lead to increased cost of trading; lack of standard measurement and quality control systems; and lack of market information.

### Mapping of poultry, grains, and key markets

#### ***Poultry production***

An assessment was made to determine the distribution of chicken population. On the mainland, Shinyanga, Mwanza, Tabora, Mbeya, Iringa, and Morogoro regions account for 45% of the total chicken population, and the number of chickens per household ranges from 9 to 15. Dar es Salaam had the smallest indigenous chicken population (182,448) but the highest number of chickens per household due to large numbers of commercial farms. The highest density of chickens was in Zanzibar, Dar es Salaam, Mwanza, and Kiliman. Sixty-two percent of smallholder households in Tanzania keep chickens with 3,017,004 smallholder households (2,950,268 on the Mainland and 66,736 in Zanzibar) keeping predominantly indigenous chickens (National Sample Census of Agriculture 2002/2003). For the period 1995 to 2003 the average growth rate of indigenous chickens was 2.2 % per year. The rate of growth was relatively higher for the period 1999 to 2003 (4.3%) than during 1995 to 1999 (0.13%). Of all the livestock kept in Tanzania, local chickens are the most widely and evenly distributed throughout the country.

The number of improved chickens kept by smallholders in Tanzania is very small. The improved chicken population as of October 1, 2003, was 1,811,829 of which 1,222,266 were layers and 589,563 broilers. They represent 3.6% and 1.7% percent of the total chicken population, respectively (National Sample Census of Agriculture 2002/2003). Most improved chickens are kept by a small number of households (8% of smallholder households kept 64% of the layers, while 65% of the broilers were kept by 7% of the smallholder households). The number of layers has increased sharply in the last nine years. It increased from 287,691 to 1,126,697 with a growth rate of 18.6% per year for the period 1995 to 2003. However,

the high growth rate of 26% experienced in the period 1995 to 1999 declined to 11.7% over the period 1999 to 2003. Assuming the growth rate of 18.6% to have prevailed in the period 1995 to 2007, the layers population as of October 1, 2007, is projected to be 2,418,268 as a standing population at any one time. Layer production is concentrated in Dar es Salaam (28%), Kilimanjaro (15%), Pwani (11%), and Dodoma (11%).

In Iringa, Morogoro, and Mbeya, layer production is moderate, while the remaining regions have insignificant layer production. Similarly, the number of broilers has increased in the last nine years. However, the rate of increase is much less than that of layers and the growth practically stagnated over the period 1999 to 2003. It increased from 184,002 to 565,712 chickens with a growth rate of 15% per year for the period 1995 to 2003. However, the high growth rate of 30% per year experienced during the period 1995 to 1999 had declined sharply to a very low level of 2% during 1999 to 2003. By projection with the given growth rate, the number of broilers in 2007 is expected to be 626,881.

The total number of chickens kept by large-scale farmers in the country as of October 1, 2003, was 456,638, of which 22,423 were indigenous, 312,043 were layers, and 241,592 were broilers. The chickens were kept on 393 farms. However, some of these farms kept chickens on a small-scale, and this did not represent the main enterprise of the farm. Only 50 farms kept sufficient chickens to be considered a large-scale enterprise (over 500). These had a total of 446,714 chickens (5,800 indigenous, 209,066 layers, and 215,225 broilers) as of October 1, 2003. In June 2006, one farm - Ruvu National Service or JKT Poultry Farm - maintained 3,800 PS for broilers and also had indigenous chickens (Kuchi ecotype and Vishingo or the naked neck ecotype) totaling 5,400 (MoLD 2006). The majority of the farms were located in Dar es Salaam, Pwani, Arusha, Mwanza, and Tanga regions.

The pattern of layer growth rate exceeding broiler growth rate follows the same trend as for that of smallholders, i.e., the growth rate for layers over the period 1995 to 2003 was much higher than that of broilers. In large-scale farms on the mainland, the population growth rate of layers was 12% per year, while that of broilers was only 4.1% per year for the same period. The number of layers in large-scale farms in Tanzania increased from 87,124 in 1995 to 216,474 in 2003, while the number of broilers only increased from 158,125 to 217,741 over the same period.

## **Enabling Environment**

### Import policy

The government has formulated policies for almost every sector in the country. These include Agricultural and Livestock Policy and the Agricultural Development Strategy; Trade Policy; Land Policy; Education Policy; Industry Development Policy; SMEs Policy; and others. These policies seek to promote a diversified and competitive export sector, enhance efficient domestic production. They provide opportunities for improving food availability and accessibility; access to markets; reducing income poverty of both men and women in the rural areas; and increasing access to social and amenities such as clean water, education, health, good governance, and rule of law. Specific actions taken to promote trade include lowering and removal of tariffs such as export tax on farm produce; facilitation of import licensing and registration; development and enforcement of quality standards through the Tanzania Bureau of Standards (TBS); export promotion; and export facilitation.

One of the fundamental issues regarding import policy in the poultry subsector relates to importation of veterinary products, DOCs, poultry meat, eggs, parent stock, equipment, and machinery. The import policy aims at ensuring that the products that are imported are of high quality and free from diseases and health risks. Tanzania has developed a combination of mandatory and voluntary standards, some of which

have been adopted from International Standards Organizations (ISO) to facilitate importation of products. These are outlined in various legislations which include Animal Diseases Act No 17 of 2003; Meat Industry Act No. 10 2006; Tanzania Food, Drugs and Cosmetics Act; Tanzania Bureau of Standards Act; Tanzania Revenue Authority Act; The Grazing and Animal Feeds Act 2010, and Tropical Pesticides Research Institute Act.

The NTP policy demonstrates that the government will implement measures to ensure that TBTs and SPS will not be used as unnecessary trade restrictive measures on imports. It will continue to observe and enforce international standards rigorously in order to protect economic activities particularly in the agricultural and livestock sectors from the dangers of exotic pests through SPS measures. Likewise, measures will be undertaken to protect its consumers against substandard and harmful products through application of suitable measures under the SPS and TBT agreements. Other initiatives will focus on raising awareness on international standards with respect to conventional exports and to new products adopted under economic diversification strategies. These measures will include building public and private sector capacity for conformity to prevailing standards as part of entry strategies in accessing new markets. As regards to export development, the government will seek membership, accreditation, and participation in international standard setting organizations.

The government recognizes that lack of adequate technical and financial capacities in local standard organizations is an impediment to market access. It will explore opportunities emerging in the Multilateral Trading Systems (MTS), regional groupings, and bilateral arrangements regarding the provision of technical assistance on standards and SPS and utilize them to build the requisite capacity. In addition, it will encourage and build a culture of strict adherence to standards, starting with those that are relatively easy to implement such as specification requirements based on weights and measures. Finally, according to the policy, initiatives will be undertaken to build international accreditation capacity on standards at the national level and in collaboration with regional economic partners.

#### Credits and/or subsidies to feed mills, hatcheries, and marketers

Based on secondary sources, this study has revealed some of the important information on availability of credits. Though the information presented is not specific to any given group, it provides some lessons which can be used to improve availability of credits to poultry stakeholders. Most of the information presented in this part has been extracted from Wangwe (2004). The financial landscape of Tanzania is comprised of four categories of institutions and banks (e.g., CRDB, NMB, KCB, Exim Bank); member based organizations and associations such as cooperatives (especially SACCOS and some cooperative unions); NGOs (e.g., PRIDE, MEDA, SEDA, and FINCA); large companies financing through contract farming; government and public sector institutions (e.g., SIDO, PTF, WDF, YDF, Local councils); and informal rural finance. According to the results of this study, the main sources of financial capital for most of the actors is own savings. It was reported that access to formal lending was difficult, and few participants reported to have accessed financial services through savings and credit institutions though this information is not surprising. It is widely held in literature that poor people are often discriminated against in the credit market<sup>1</sup>. According to a study commissioned by the Bank of Tanzania (BOT) in 1997

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<sup>1</sup> This is usually attributed to lack of sufficient information among lenders about the borrowers; lack of sufficient information among the borrowers on the availability of credits; lack of collateral; the high transaction costs that finance institutions incur when dealing with small borrowers in remote rural areas; and the high risk of default due to the occurrence of shocks or moral hazard. The literature also explains the workings of the credit market and how in recent years initiatives have been developed to address the failures listed above (Ellis, 1992; Matin et al., 2002; Moseley et al., 1998).

the unmet demand for rural financial services by formal financial institutions was significantly high, thus forcing rural households to rely on informal financial services by 82%. A follow-up survey in 2002 revealed that only between 6% and 8% of the total rural credit demand was met by the existing financial institutions (IFAD, 2002; URT, 2002).

It was learned that most poultry subsector actors lack the qualification for getting credits from banks and other financial institutions. Many actors are unable to meet credit conditions which include loan security, interest rate, business plan, permanent business premises, and reliability of the business activity. Lack of adequate knowledge on credit processing and management could be one of the sources of fear among many poor people on loan acquisition. People are worried over the consequences of inability to repay loan especially loss of security asset such as houses. The actors also have little knowledge on how to get connected to lending institutions, due to lack of experience on borrowing from formal institutions. Inadequate savings mobilization in many places in Tanzania further enhances the problem. It was reported that saving and credit systems were weak. Due to inadequate access to financial services, many actors do not grow into medium- and larger-scale enterprises. Many actors persistently operate at a very low scale, which is in many cases due to limited vision and ability to manage larger enterprises. The results from this study highlight the need for an intervention in developing financial systems that can work to avail financial services poultry subsector actors.

Efforts are needed to link poultry subsector actors to financial institutions. For poultry keepers, for instance, arrangements could be made to channel their loans through their buyers who can receive loans on their behalf under contract farming system. Because lack of financial education is one of the bottlenecks to accessing financial services from formal financial institutions by many actors, this study suggests that training on financial education be provided to the actors. Credit guarantee arrangements can also be sought, as one of the problems limiting access to credits is lack of collaterals. During the field work the need for land titling was echoed as one of the best ways of solving the problems related to collaterals. The important issue that this study raises is that land can be important collateral for many actors. Innovative ways in which to facilitate land titling in the project areas, in addition to other measures are needed. One obvious strategy would be to involve the local governments, local people through their institutions in land use planning, management, and titling.

Lessons that can be drawn from the experience of commercial banks like Exim Bank are as follows:

- Security in rural areas is problematic in the absence of formal registration of assets that could function as collateral titles and even when they are registered their market value is low. There is need to innovatively search for alternative ways of managing to provide financial services without necessarily demanding physical collateral.
- Short-term lending is not appropriate for most of production activities in the rural areas. Longer term credit is needed.
- Linking with intermediate institutions which are closer to the farmer clients reduces the cost of collecting and processing information about potential borrowers. Linkage to SACCOs and community banks has proved useful in cutting down administrative costs, enhancing loan recovery, and improving reach without having to physically locate branches in all areas of operation.

Lessons to be drawn from the experience of SACCOs to date are as follows:

- Poor infrastructure poses a challenge to the spread of rural financial services by NGOs in the country.
- The financial institutions that have utilized the knowledge and proximity of established institutions in the rural areas such as SACCOs have managed to enhance reach and loan recovery.
- Unlike banks that experience low loan repayment rates from peasant borrowers, SACCO's loans have lower default rates. Borrowers know that the loans come from savings of the community. Community pressure, access to information, and close follow-up all have been combined to enhance access to credit even without having to use conventional forms of collateral.



- Building competence in SACCOs through capacity building initiatives deserves priority to enable these institutions to operate more efficiently and competitively. SACCOs and community banks will need assistance in acquiring technical and managerial competence and institutional capacity building. However, the main challenge that these institutions will face is that of managing the transition from that kind of dependence towards sustainability.

Lessons that can be learned from NGO-microfinance institutions include the following:

- Working through groups has helped to introduce peer pressure in loan recovery and in providing information about borrowers at low cost. Experience has shown that new and appropriate methods of lending have been used which included providing very small loans without collateral at full cost interest rates that were repayable in frequent installments, and that the vast majority repaid on time.
- Staffing of the financial institutions need to give weight to competence, incentives, and monitoring performance on a continuous basis. Capacity building deserves high priority.
- Collaboration with foreign entities helps in starting up and building capacity that is needed initially. However, the challenge of reducing dependence and attaining sustainability is facing many NGO-MFIs.

Lessons to be learned from credit arrangements contract farming are:

- Instead of dealing with individual farmers, the contracting companies have learned that it works better when they deal with the primary cooperative society leaders who distribute the money paid in advance to farmers to purchase inputs
- The companies providing loans for agricultural inputs have also learned that performance improves when complementary technical assistance is also provided. The companies have been providing extension services to advise the farmers on various farming methods and techniques to enhance productivity and incomes generated by the farmers.

### Government interventions

There is increased government interest to make the livestock sector vibrant and expand production and productivity on a sustainable basis. The mission of the Ministry of Livestock Development and Fisheries is: *“To ensure that livestock resource is developed and managed sustainably in collaboration with other stakeholders for improved human livelihoods.”* The main objective of the Livestock Policy of 2007 is to make livestock contribute towards national food security through increased production, processing, and marketing of animal protein to meet national nutritional requirements and improve standards of living of people engaged in the livestock industry through increased income generation from livestock. The policy would achieve these through the promotion of integrated and sustainable use and management of natural resources related to livestock production in order to achieve environmental sustainability; strengthening technical support services; develop and introduce new technologies; and human resources development within the livestock industry.

The Local Government Reform Program implemented since 1998 has transferred decisions on development to the lowest level of government. The goal is to improve participation of most people in decisions that affect their livelihood, including provision of services to poultry keepers. However, for poultry production, the general intention is compromised by two constraints: 1) inadequate organization of the subsector, and 2) the low education among poultry keepers. Both act to reduce the influence of poultry keepers in sharing the resources available and the impact in decisions taken in government, both local and national.

The Agricultural Sector Development Strategy (ASDS) is another important milestone of government commitment towards supporting the livestock sector. The objective of the ASDS is to create an enabling

environment for improving agricultural productivity and profitability; improving farm incomes; reducing rural poverty; and ensuring household food security. At the heart of ASDS is a sector-wide approach to:

1. Change the function of central government from an executive role to a normative one
2. Empower local government and communities to reassume control of their planning processes
3. Establish an enabling environment which attracts and encourages private sector investment in agriculture (MALD,2003).

There are several legislations relevant to livestock development that have been revised or enacted. The most notable are:

- The Veterinary Act No. 16 of 2003, which among other things mainstreamed the use of para-vets and community animal health workers (CAHW) in providing services in rural areas. Many pastoral areas have already taken advantage of the new law to strengthen support services by training and deploying para-vets and CAHWs with assistance from local and international NGOs, such as VETAID, FARMAFRICA, HPI, WorldVision, and religious organizations, e.g., ELCT. National networks of some of these institutions have been formed, e.g., the Community Animal Workers Network (CAHNET).
- The Meat Industry Act 2006 provides, among other things, for the establishment of the Meat Board and other stakeholder organizations to promote production, processing, and marketing of meat and meat products. Further, the act formalizes and enhances the role of the private sector in the development of the subsector. The implementation of this act is at its inception phase.
- The Grazing and Animal Feeds Act 2010 is intended to recognize pastoralism as a sustainable livelihood system in the semi-arid areas, promote sustainable use of rangelands and promote the supply of good quality animal feeds in the country. The act gives powers to the minister responsible for livestock development to designate grazing areas and control the use of the designated areas in order to ensure improved productivity and sustainable use of designated grazing land.

The Government of Tanzania has been implementing a number of national projects. These projects include the Agricultural Sector Development Program (ASDP); the Participatory Agricultural Development and Empowerment Project (PADEP); and the District Agricultural Development and Investment Program (DADIP). These projects have components for livestock development.

The picture one gets from a scan of national policies and government projects is that Tanzania has a very good set of policies, laws, and regulations. The initial challenge, however, is how to translate the policies and projects into practical solutions at local level to ensure effective livestock development in Tanzania. Sectoral policies and projects are not supported with a well functioning regulatory, administrative system and government support at all levels to link the sectoral and the operational functions in livestock production systems in Tanzania. For the sectoral policies and projects to function, there should be a strong and practical legislation, regulatory system, and support program at the local level.

The regional and local governments have vital roles in providing support, regulatory services, and advisory services to poultry keepers and traders at the markets. In line with the local government's reforms, the local government authorities are the major public service providers to agricultural development. For faster development of the sector, local governments have to adopt policies, practices, and guidelines which are in line with various national trade policies governing agricultural marketing. The local governments are charged with the responsibility to maintain a conducive environment for the growth of economic activities including the establishment and development of agricultural marketing systems. The challenges of the government are to make the local authorities realize that it is their responsibility to facilitate the development of agricultural marketing systems in their areas. Since the

majority of the people in Tanzania depend on agriculture and livestock for their livelihood and employment, services to the sector should be given a due priority.

For the above to succeed, changes in the mindsets of the national and local authorities are needed for them to be able to deliver services to poultry keepers. The public sector needs to pose as service providers, as opposed to the current situation whereby they are acting as control systems and administrators. The government institutions at all levels are supposed to be market/customer oriented in which case poultry keepers are their customers. They must implement those activities or services demanded by poultry keepers. They must go out and identify the problems facing poultry keepers and find solutions with the poultry keepers, including identification of service providers who can provide the services needed by the poultry keepers.

The government is supposed to emphasize building the capacity of private service providers at grassroots level. Efforts should be made to facilitate contractual arrangements between actors along commodity value chains. Market agents should be made to understand that for sustainability all the actors along the commodity chain should benefit from the business. For instance, if poultry keepers are not getting enough profit, they will reduce production, thereby affecting the whole commodity value chain. The main challenge is how to build strong contractual arrangements along the commodity value chains. This is a process of creating collaborative mechanisms; civil society organizations; companies; traders; financial institutions; and other types of institutions such that each participant sees the importance of the other.

## **Poultry Value Chain Mapping**

### Subsector analysis

#### ***Subsector map***

A subsector encompasses all the firms that buy and sell from each other in order to supply a particular set of products or services to final consumers. It includes input suppliers, producers, traders, processors, exporters, retailers, etc., and can be defined by a particular primary or finished product or service and the market, e.g., poultry for regional markets, poultry for local markets, etc. From the point of view of the producers, a subsector can be identified based on the types of products produced. In this study we have two types of subsectors, namely, poultry and eggs subsectors.

During the study, respondents were requested to identify and map the players involved in poultry subsectors in Tanzania. **Figure 7** presents poultry and eggs subsector map. As indicated in the figure, the poultry subsector was found to be characterized by a variety of actors, playing slightly different but often overlapping roles, which are distinguished by scale of operation, and buyer/seller clients they serve. The actors exhibit different degrees of vertical integration, with some serving the same functions that two or more other intermediaries may be simultaneously performing. The figure shows that the actors in the poultry subsector include inputs suppliers; poultry keepers; traders; processors; exporters; retailers, and consumers.

#### ***Market channels***

**Figure 7** also shows the important market channels. The poultry marketing systems consist of different marketing chains and channels. Marketing channels are alternative routes of product flows from producers to consumers (Kohls and Uhl, 1990). Thus poultry marketing channels are different passages or outlets through which poultry products are distributed to consumers. On the way to the consumers, the products change ownership from time to time among the poultry marketing players. The present study has identified a number of marketing channels, namely, primary market trader channel and village trader channel.

**Channel I: Wholesale trader channel.** This channel involves traders who buy in large quantities from primary markets and village traders. Wholesale traders of different sizes and specializations dominate the interface between producers and retailers and to a lesser extent slaughter houses. It is estimated that this channel handles approximately 5% of the birds that are marketed. Traders in this channel are also involved in cross border trade of essentially live animals. Cross border trade with Kenya is the most developed cross border market outlet.

**Channel II: Primary market trader channel.** This channel constitutes an important outlet of poultry products from poultry keepers in the country. Approximately 7% of the poultry offtake pass through this channel. The main suppliers to this channel are producers and village traders who handle up 150 birds per week. The District Councils oversee the operations of these markets and charge a levy and issue movement permits for the animals to other designated market centers. Primary markets operate with very basic infrastructure. Primary markets are relatively small and are located relatively near to the poultry keepers. In the primary markets, various types of traders are found including wholesalers.

**Channel III: Village trader channel.** This channel involves poultry selling by producers to customers at the farm gate or at the village market in the producing areas. The main players in this channel are local traders and some distant traders who go to the villages. Other players include individuals who buy poultry for special purposes including ceremonies, rituals, and food. Poultry keepers in this channel sell poultry either to small, village-based traders and primary market traders. Usually the poultry is either collected by the buyers at the farm gate though sometimes poultry keepers deliver poultry to primary markets. In most cases, transactions between the poultry keepers and their customers are spot market in nature and involve cash payments, though sometimes credit transactions were also reported. This channel handles approximately 8% of the poultry products that go to the market. Village traders collect from farmers on average 30 to 50 birds and 100 eggs per week per trader.

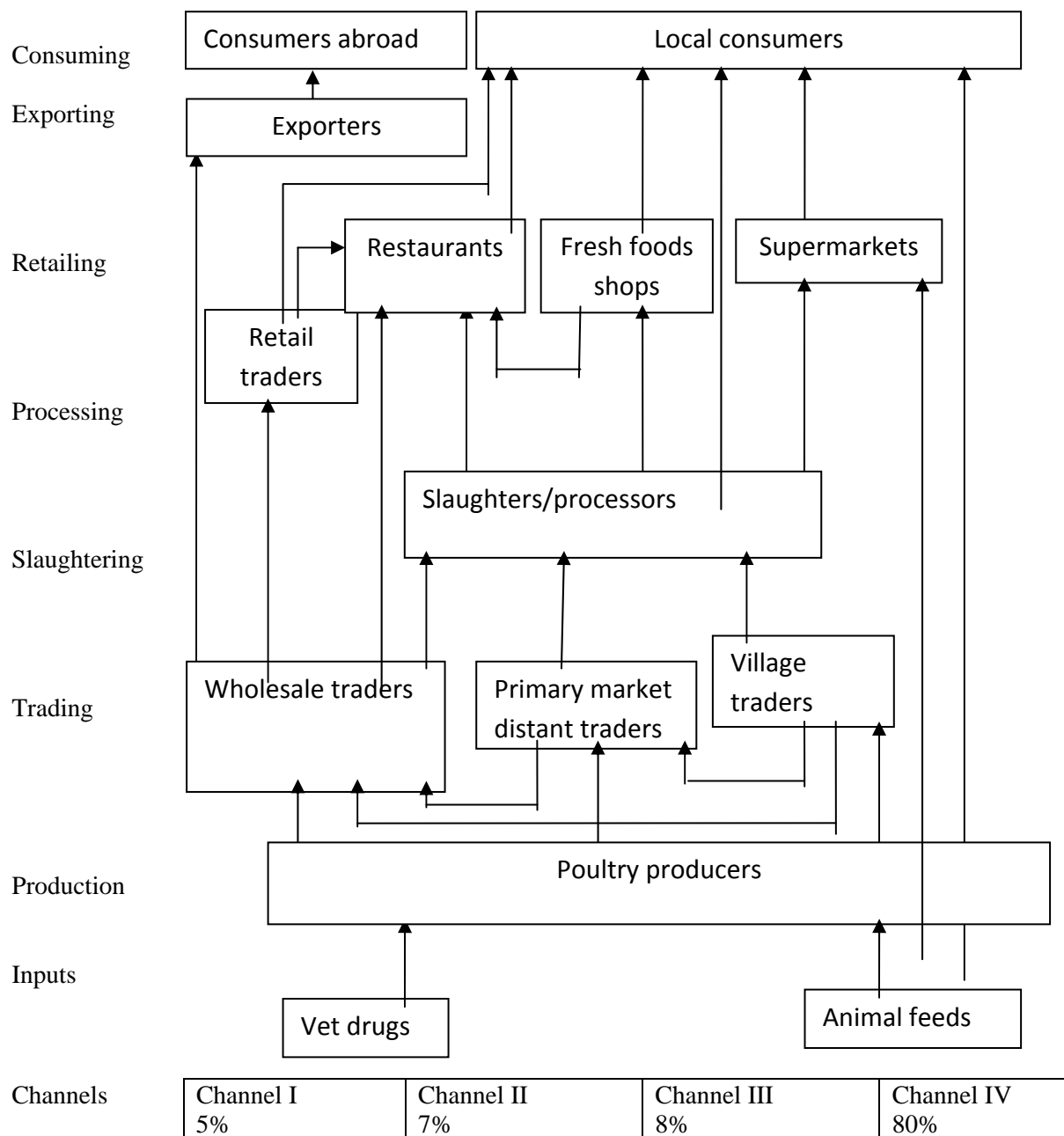
**Channel IV: Consumer market channel.** Selling poultry products directly to consumers is the oldest and shortest channel. This channel involves poultry products selling by producers to household consumers mostly at the farm gate or at the local market in the producing areas. The farmers themselves and their relatives in their homesteads may consume part of the poultry produce. The popularity of the direct sales channel is dwindling, however, due to the increasing number of households keeping poultry and the growing number of alternative market channels and intermediaries. Yet this channel handles large proportions (approximately 80%) of the marketed poultry products.

### ***Subsector organization***

**General management.** Chicken management in the traditional poultry production system involves disease control, feeding, and housing. Chicken under traditional production system are free ranged. Chicken management is mainly the activity of women and children. Women and children are responsible for checking whether all the chicken are back from feeding, as well as for the cleaning of houses and cages, preparation of eggs and nests, and watering. Men are usually responsible for construction of houses and cages.

**Disease control.** Especially the traditional system, poultry production in Tanzania faces critical disease challenges. Diseases account for 75% of the deaths with New Castle Disease accounting for 80% of the deaths caused by diseases. Other diseases include chicken pox, fowl typhoid, coccidiosis, and coryza. Based on the information collected from the respondents for this study, the level of disease control is generally low. Most chicken keepers use traditional methods to control diseases including the use of botanicals, disposing the flock before the outbreaks, and exchanging chicken for goats to reduce the risk.

**Figure 7: Poultry sub sector map**



**Feeding and housing.** This study joins the findings of others that poultry keepers practice backyard type of feeding and housing. Generally, farmers allow their chicken to look for grains, forages, insects, and kitchen remains. Housing is meant to protect the chicken from predators during the night. At night, the chickens assemble themselves in the poultry houses and/or cages usually constructed for this purpose. In areas where security is not good, chickens are kept inside the household houses.

**Breeding.** This study reveals that there is no planned poultry breeding in the traditional system. Stock breeding is generally on natural occurrence basis, and no control for inbreeding is done.

**Production.** In the traditional farming system, chicken production is not planned. Chickens are not considered as an important economic activity. Chickens are kept by the way, and the flock growth is taken for granted.

**Marketing.** Chicken producers have various market outlets including farm gate traders and wholesale distant traders. Most frequently, farmers who are near primary and secondary markets sell their chickens directly to distant traders or through brokers who are stationed in the markets.

### ***Key actors***

The main types of key actors found in the market channels include poultry keepers, traders, processors, and exporters. In this section we are providing a brief description of the key actors.

**Traditional poultry keepers.** Traditional poultry keepers are the primary producers of poultry products in the country. Most of the poultry in the country is kept under traditional extensive production systems. The traditional systems account for approximately 70% of the flock, supplying most of the poultry meat and eggs consumed in rural areas and about 20% in urban areas. The traditional poultry keepers own an average of 10 birds per household (Agricultural Sample Census, 2003). The poultry keepers are critically constrained by low productivity of their production system; poor resources including skilled human resources; and inadequate organization capacity.

**Commercial poultry keepers.** On the other hand, commercial poultry production is mostly practiced in urban and peri-urban areas, and productivity levels are relatively higher. Majority of commercial poultry farms are found in Dar es Salaam, Coast, Arusha, and Kilimanjaro regions.

**Village-based small traders.** A village-based small trader is a middleman who buys from poultry keepers in small quantities. These traders are usually found in the villages or nearby villages and primary markets. Sometimes these traders assume broker responsibilities. Under such circumstances, the agreed prices are the basis for negotiations between the traders and poultry keepers. It is a common practice for the traders to negotiate lower prices with the poultry keepers so as to reap substantial differences between the buyer's price and the producers' prices. The difference usually is part of the commissions to the traders. Thus the trader's commission is the difference between the small trader's buying price (poultry keepers' selling price) and the price agreed between the traders and buyers. Village-based small traders face some constraints, including inadequate information flow and sharing, and inadequate commitment of poultry keepers to the quality of their poultry as well as lack of organization.

**Primary market trader.** Primary market traders play an important role in collecting poultry and eggs and delivering them to either wholesalers and/or retailers in nearby urban areas. These traders buy relatively larger numbers of poultry and eggs (approximately 150 birds and 50 trays of eggs) compared to village-based small local traders who handled approximately 50 birds per week. Most of these traders are local traders who have graduated from the role of village small traders after they have accumulated some capital. Similarly, these traders were constrained by inadequate information flow and sharing; inadequate commitment of poultry keepers to quality of their products; and lack of organization.

**Wholesale traders.** Most of the secondary market traders are distant traders who are found in various places in the country. In most cases, these traders require poultry consignments in larger numbers (approximately 500 birds and 100 trays of eggs per week), and they collect poultry products from secondary markets. Usually the consignments purchased by distant traders are transported away to distant markets.

**Poultry slaughter facility owners.** Poultry slaughter facilities in the country areas are generally inadequate. The available poultry slaughter facilities are owned by commercial poultry producers

including Mkuza Poultry Farm and Goldern Chicks in Kibaha; Interchick in Dar es Salaam; and Pride Meat in Morogoro. It was noted that these facilities deal with poultry reared under commercial production system. Slaughter facilities for traditional poultry are generally lacking implying that most of the traditional poultry slaughtering is informal and unregulated.

**Poultry meat processors.** Processing of poultry meat into different cuts and preparation of other meat products (including sausages) are not well developed in the country. There are emerging integrated processors who prepare different meat cuts to supply specific orders for food service (hotels, supermarkets, and some institutions). Processing of poultry meat into sausages was reportedly nonexistent.

**Retail traders.** There are a variety of retailers in the poultry industry. These range from the smallest ones who own a few cages in town to supermarkets.

**Consumers.** These are the final users of poultry meat and eggs. They are the main target in the marketing system, and all the other players work hard to satisfy the consumers. The consumers normally use poultry meat and eggs as food. There are household consumers and consumers away from home. Most of the household consumers buy meat from fresh food shops and retailers. Consumers away from home buy from restaurants, hotels, and *nyama choma* businesses.

**Inputs suppliers.** This is a group of service providers of veterinary drugs; animal feeds; research and extension services; financial services; facilitation.

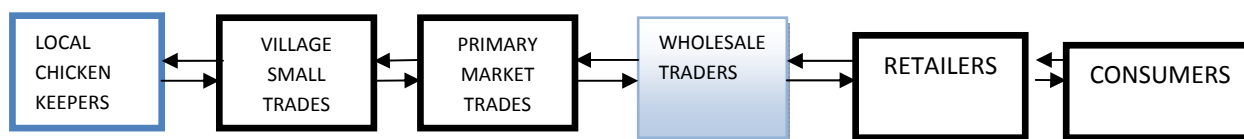
## Value chains analysis

### ***Value chain maps***

Value chains can be defined in terms of a finished product. In this study, two main types of poultry value chains were identified. These are 1) local chicken value chains; 2) exotic chicken value chains. In order to enhance an understanding of the value chains and their relevant strands, a value chain mapping exercise was executed. The process involved identification of the position of the participants within the chain and identification of the performance requirements pertaining to the participants. The value chain mapping and analysis also assessed the overall chain structure, including different strands; key segments; nodes and actors; flows of products; information and finance; product transformations; and value added. Typical nodes in natural resource-based value chains are primary production, primary trading or processing, retailing, and consumption. Below are presented typical value chain maps for the two value chains.

**Local chicken value chain map.** The flow of value and products in the local chicken value chain are shown in **Figure 8**. The main players in the local chicken value chain include, therefore, consumers, urban retailers, wholesalers, and poultry keepers. These participants play various roles in the value chain each contributing to the value of the product. For instance, poultry keepers are primary producers of chicken while the other participants add time, form, and space value to the meat products by transporting and storing the products before they are delivered to the consumer. It was found that small traders form the main outlets for local chicken and eggs from local chicken keepers in this chain.

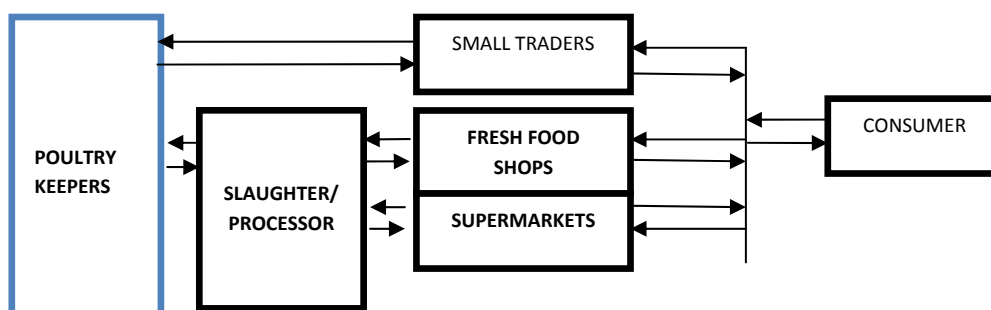
**Figure 8. Local chicken value chain map**



The village small traders have information about the required type and quality of chicken and eggs needed by wholesalers in urban areas. Once the traders have collected chicken and eggs from local chicken keepers, they transport the chicken and/or eggs to primary markets. From the primary markets chicken and/or eggs are sent to wholesale markets and finally to retailers.

**Exotic chicken value chains map.** The exotic chicken value chains involve poultry keepers, small traders, slaughterers, processors, retailers, supermarkets, and consumers. The main feature of this chain is that it involves slaughtering and/or processing. The layout of the exotic chicken value chain participants and a description of their relationships and transactions with each other are given in **Figure 9**.

**Figure 9: Exotic chicken value chain map**



Comparison of **Figure 9** with **Figure 8** shows that the exotic chicken value chain is relatively shorter than the local chicken value chain, based on fewer middlemen in the chain. Thus, the major difference between the exotic chicken value chains and the local chicken value chains lies in the type of products and presence of slaughter/processors in the exotic chicken value chains. While the local chicken value chains deal with primarily local live birds, the other value chains deal with exotic live birds, exotic eggs, and processed poultry meat.

### *Value chain management*

**Approaches to value chain management.** Value chain empowerment is the process of enabling stakeholders to manage, administer, and own their socio-economic activities. Usually there are three approaches to promoting effective participation of farmers in value chains. The first approach is to promote vertical integration where farmers are facilitated to engage in more marketing functions other than production such as sorting, grading, transportation, processing, and selling. This approach in the case of poultry production is limited by spatial problems (infrastructure and long distances from markets) inadequate information flow, inadequate business skills and entrepreneurship, and inadequate processing technology and know-how. The approach is also constrained by inadequate farmer organizations. The second approach is to promote horizontal integration where farmers are left with the role of production while other marketing activities are done by other marketing participants. This approach has also proved to be inadequate, as the tendency has always been to marginalize farmers both economically and socially due to market inefficiencies and inadequate commitment of the state to protect farmers and inadequate competencies among the farmers to cope with the market dynamics.



Since both vertical and horizontal approaches have shortcomings, some measures are necessary to improve the position of farmers by putting in place a system which ensures 1) coordination of and partnership among the different players so that they inform each other of the needs of the market, and 2) improved overall efficiency of the poultry marketing system through improved poultry handling techniques, use of standardized weights and measures, use of entrepreneurial skills by market agents and dissemination of market information for the industry. These can be achieved through effective value chains development. In this way, the farmers would benefit from the improved market access and prices resulting from market efficiency improvements, the success of which would depend on the efforts put in place to promote partnership among the different players in the value chains. In effective value chains, the different actors have a shared vision, work as partners, are committed to quality, and all are concerned with the sustenance of the value chain as a whole.

**Analysis of value chain management.** The value chain analysis involves an assessment of partnership among the actors, commitment to quality, information flow, and welfare distribution. Value chain partnership is an important factor for chain coordination and development.

- **Value chain coordination.** In view of the assessment made during this study, poultry value chains in Tanzania are governed through spot market, meaning that there is no contracting among the players. Reports from stakeholders indicate that currently the poultry value chains in Tanzania are characterized by inadequate or weak producer organizations and poor coordination; inadequate promotion of partnership building; inadequate information flow and sharing; and inadequate commitment of poultry keepers to quality of their chicken products. The assessment shows that the players in the value chain do not have a common vision and do not share information on prices and market opportunities. In view of this, the participants do not seem to care about the sustenance of their value chains through cooperation. The relationships between buyers and poultry keepers seem to be short lived.

For partnership building, efforts are needed to coordinate the chain players by bringing them together and forging an understanding among them regarding the need to cooperate for their business performance. Partnership between traders and local chicken keepers does not exist. Lack of collective action among the poultry keepers could be one of the reasons for the inadequacies found in the poultry chains. Efforts are needed to strengthen the existing farmer groups and/or promote group formation, so as to enable poultry keepers to participate in the management of the value chains. This should involve facilitating the development of common vision among the players in the chain, trust building, development of joint action plans, negotiation, and market intelligence.

The study also investigated the commitment of the value chain partners to quality and consistency, which are important factors of partnership. The quality and consistency of the poultry products is crucial for poultry marketing. The buyers have specific requirements regarding the quality of poultry and eggs which include breeds, size, maturity, and shape and color of eggs shells and yoke. Change of attitude among the poultry keepers is necessary so that they can focus on the buyers' needs instead of the cash needs. Poultry business entrepreneurship is crucial in this case. A shift from a production-oriented development approach to a market-oriented approach is needed. Promotion of business thinking and decision making, especially in risk taking, should be priorities in facilitating poultry production and marketing. The poultry keepers have to produce according to the demand and requirements of the market surrounding them within the country.

During the study, constraints and opportunities for inclusion of producers in the management of poultry value chains were identified. It was found that all the poultry value chains are characterized by a combination of vertical and horizontal integration of market functions but more to say is that all the marketing activities are random without prior arrangements. To participate in the value chains,

some vertical integration aspects are necessary, whereby poultry keepers are facilitated to engage in more marketing functions (e.g., selection, grading, transportation, and selling to lead buyers). Power relations also determine the position of poultry keepers in the chain. Power relations in the poultry chains were evaluated based on who has the control over information, quality, and innovations. Based on the assessment made during the study, chain cooperation between poultry keepers and other market players was considerably inadequate. The players did not have common vision, trust, joint actions, or negotiation. Information sharing among the actors was generally lacking, and poultry keepers are the hardest hit of all. Poultry keepers are ill informed of the prices and quality requirements in various markets. This situation has tended to marginalize them.

- **Market prices as a measure of welfare.** Price analysis is important in determining the potential of various market segments to provide profit opportunities to players in value chains. Prices were collected at various nodes and compared for farm gate, primary markets, wholesale markets, and retail markets. This exercise, however, faced a number of challenges, one of them being the problems associated with the weights and measures used. In buying and selling poultry, no standard units were used when this study was being carried out. Poultry were sold based on their size, health condition and type, determined through observation and experiences. These criteria were notably variable and unreliable.

**Table 3** presents the prices as reported by the poultry keepers. The table shows that prices varied with the type of market agent, the position they occupied in the marketing system, and the market segments.

**Table 3: Poultry prices (in Tshs) per animal in various market segments in the Eastern Zone**

Market segment	Exotic chicken			Local chicken		
	Live	Meat	Egg	Live	Meat	Egg
<b>Producers</b>						
Buying price						
Selling price	3500		200	6000		150
<b>Village traders</b>						
Buying price				6000		150
Selling price				7000		200
<b>Primary market traders</b>						
Buying price				7000		200
Selling price				8000		250
<b>Producer/processors</b>						
Buying price						
Selling price	3000	3500				
<b>Fresh foods shops</b>						
Buying price		3500	200			
Selling price		5000	250			
<b>Urban retailers</b>						
Buying price	3500		200	8000		250
Selling price	4500		250	10000		300

As expected, producers were getting the lowest prices from small traders compared to other buyers. Up the value chain, prices are higher. Substantial differences in buying prices and selling were observed among the buyers, which imply that poultry keepers could get better prices if they had assumed some of the marketing functions. Buying prices for wholesale market traders and processors in the commercial sector were, however, similar because they bought from the same sources, i.e., secondary markets.

## Constraints And Opportunities For Various Actors

### *Constraints facing value chain actors*

Poultry development in Tanzania is constrained by many factors at various levels. During the study, focus group discussions were held to discuss these constraints. The stakeholders involved in the study identified and ranked them. **Table 4** summarizes the outcome of the focused group discussions and consultation with key informants.

**Table 4: Constraints facing different actors in the poultry industry**

Value chain nodes	Constraints	Overall rank	
		Traditional	Commercial
Production	High incidence of diseases	1	
	High mortality rates of chicks	2	
	Poor quality of vet drugs	3	4
	Unreliable markets	4	
	Inadequate education	5	
	High prices of vet drugs	6	3
	Lack of extension services	7	
	Lack of capital	8	
	Inadequate breeding	9	1
	Poor quality of feeds		2
Village trading	High incidence of diseases	1	
	High prices of vet drugs	7	
	Unreliable markets/infrastructure	3	
	Inadequate education	6	
	Lack of capital	2	
	Inadequate transportation	4	
	Levies and taxes	5	
Wholesale trading	High incidence of diseases	1	
	High prices of vet drugs	7	
	Unreliable markets/infrastructure	6	
	Inadequate education	5	
	Lack of capital	4	
	Inadequate transportation	2	
	Levies and taxes	3	
Primary market trading	High incidence of diseases	1	
	High prices of vet drugs	7	
	Unreliable markets/infrastructure	3	
	Inadequate education	6	
	Lack of capital	5	
	Inadequate transportation	4	
	Taxes and levies	2	
Retail trading	High incidence of diseases	1	
	High prices of vet drugs	5	
	Unreliable markets/infrastructure		
	Inadequate education	4	3
	Lack of capital	3	2
	Inadequate transportation		
	Levies and taxes	2	1

Across the different levels in the poultry value chains, various constraints are notably common and combine to limit the development of the subsector. These core constraints are explained below to demonstrate their effects and how the actors rank them.

**High incidence of diseases.** Livestock diseases were mentioned by respondents for this study as the most important constraint. Diseases cause loss in production/productivity and increase cost of production in

terms of cost of control. Diseases are reported at various levels along the production and marketing chain. New Castle Disease is cited as one of the important diseases. Poultry keepers in the traditional farming system do not devote efforts and money on poultry disease control, as poultry is considered as a 'by-the-way' activity that does not require specialized attention and commitment of resources. In the commercial poultry production system, serious attention is paid to control diseases. Disease control in the traditional farming system is constrained by lack of adequate knowledge about diseases among the local farmer and inadequate availability of drugs at affordable prices/packages. As coping strategies, poultry keepers in the traditional systems use herbs, timing, and local surgery to control and cure diseases.

Prevalence of diseases was also reported by traders, especially for local chickens. Traders along the chain make little or no effort to manage poultry diseases. Traders reported that they do not apply vaccination or treatment of their animals between purchase point and point of delivery. The only method they use is to spend limited time before they offload the stock. Based on the field discussions with the traders, it is apparent that the prices of drugs are high, and that if they incur costs on drugs, their business would not pay. High mortality rates were reported due to diseases, especially for local chickens. Traders lack adequate knowledge on early identification of disease and disease control. Because of the inadequate actors' commitment to sustaining the value chain, producers sometimes deal with the disease outbreaks of diseases by selling the animals just after seeing signs of diseases. In such a case, the interest is to transfer the potential losses to other actors without due consideration of the overall effect on the sustainability of the value chain. Not only does this have economic implications, it poses potential health risks in view of the current bird flu threat. An effort is needed to establish a system which focuses on managing the diseases at the production level to safeguard quality in the overall as well as sustain better margins and protect lives.

**High mortality rates of chicks.** High mortality rates are reported in all the various functional levels of the chain. FAO (2007) reports that the total number of egg production per hen per year range from 6-20 and that in general, egg productivity of scavenging poultry in Tanzania is low, chick mortality is high (30-80%), and hatchability is high (50-100%). According to FAO (2007), in addition to genetic effect, this low egg production could be improved and even doubled without any detrimental effect on hatchability through rational feeding. The improvement of egg production could also be achieved by early weaning of the chicks but its effect on chick survival and female reproductive life needs to be known (Minga, 1996). At the trader's level, mortalities are attributed to the fact that most of the farmers do not vaccinate their flocks, while at the same time, traders do not vaccinate the birds soon after buying them and before selling them.

**Unavailability of vet drugs.** Unavailability of drugs, especially vaccines, was echoed as one of the problems facing poultry keepers. Drug supply is currently undertaken by the private sector after the liberalization of the sector. Most of the inputs suppliers are stationed in the urban areas. Vet drugs are also available in the open markets which operate only in some days of the week. The distribution of drugs in the rural areas especially vaccines is limited by poor infrastructure, including roads and electricity. Prices for most of the drugs are also reportedly high. It costs Tshs 4000 to buy vaccine that can be used for 100 birds. The price is reasonable, but because most households own small flocks, it is uneconomic to use the vaccine unless the farmers decide to do it in a group.

**Unreliable markets.** This study has found that poultry marketing in Tanzania is highly disorganized, thereby affecting poultry production and its profitability, particularly for smallholder farmers. The system is characterized by weak support services including market information, regulatory services, financial services, technical services, and government commitment to protect the poor. There is inadequate infrastructure for processing and marketing of poultry products in the country. Although there were at least a few stakeholder organizations in some areas, they were weak, and most had weak financial bases and were informal, in that they had not been registered into any of the several registration options

(cooperatives, association, CBOs, NGO, etc). FAO (2007) concludes that as poultry production in Tanzania is increasing, the improvement of the present marketing systems for poultry meat and eggs is a prerequisite for both producers and consumers. A good marketing channel among poultry producers, retailers, and wholesalers which is regulated by the relevant authority may help prevent undue exploitation of small farmers. It is important that special attention is paid to the collection, storage and transportation of these products.

**Inadequate education.** Inadequate technical and business skills were highlighted as one of the limiting factors for poultry production. One of the dimensions of inadequate skills is the general low level of education among the population in many places in the country, including majority of poultry producers. Another dimension of the problem relates to lack of tertiary training and inadequate extension services. Most of the poultry subsector actors have hardly received any training, nor have they been provided with adequate extension services in relevant technical aspects. Essentially, lack of skills is one of the causes of low productivity and poor marketing of poultry products. Especially for poultry producers, training faces both demand and supply problems. While training opportunities are few, producers can hardly afford to pay for the costs of the training. Many actors do not see training as important. Clearly, as a result of low education levels, many actors follow the advice of technical staff with difficulties. It is the opinion of the Study Team that although investment in education is a medium to long-term strategy, efforts can be made to improve skills of the actors through tailor made training in technical, financial, entrepreneurship, and business development. It is also proposed that efforts should be made to provide business coaching TOT to extension and community development staff so they can provide business coaching services to actors.

**Lack of extension services.** Extension or/and training in technology use, treatment and control of poultry diseases, market information, and regulatory services are crucial for poultry development. Until the mid eighties the above services were provided by the government. The adoption of the economic reform programs dictated that only regulatory and control of epidemic diseases remain to be core government services. The reduced involvement of the government in the provision of extension services has undermined these services. Extension services are still seen as public good to be funded by government, although delivery need not be done by government. Extension services can be better provided under public private partnership arrangement.

**Poor quality of animal feeds.** The quality of almost all the commercial feeds being sold to farmers is lower than the requirements of the poultry, leading to the low performance of the chickens. There should be regular testing of the quality of the feeds and raw materials to eliminate this problem.

**Inadequate capital.** Financial services were described as inadequate by stakeholders consulted for this study. It was reported that actors need financial services to acquire capital for investment in improved technologies. The main sources of financial capital for poultry subsector actors include own savings, relatives, and microfinance institutions. Limitations of financial capital are an outcry of many during the consultations. Inadequate of capital can be attributed to lack or few financial institutions in the study areas; but more importantly due to lack of financial education.

*Constraints facing value chain facilitators*

Constraints facing various service providers are shown in **Table 5**. The constraints were reported during the field work by various stakeholders who were consulted.

**Table 5: Constraints facing different actors in the poultry industry**

Value chain nodes	Constraints	Rank
Veterinary drugs suppliers	High prices of vet drugs	1
	Lack of knowledge among farmers	2

	Cumbersome customs procedure	3
	Inadequate regulations of the sector	4
	Erratic power supply	5
Feeds producers and suppliers	Unavailability of enough raw materials	1
	Inadequate government policy	4
	Inadequate capital	6
	Erratic power supply	3
	Fake feeds	5
	Inadequate supply ingredients	2
Extension services providers	Inadequate motivation for staff	2
	Inadequate working tools and facilities	1
Financial service providers	Inability of actors to meet credit conditions	1
	High cost of credits to poultry subsector actors	2
	Inadequate financial education among actors	3

**Veterinary drugs suppliers.** It was reported that veterinary drugs suppliers are constrained by high prices of drugs in the market. Moreover, many times, the quality of the drugs sold in the market is not of high quality due to lack of adequate quality control. The stakeholders also complained of lack of proper regulation and erratic power supply. It was reported that drug imports face difficulties at the port due to cumbersome customs procedures. Another issue that was raised by stakeholders is the lack of knowledge among poultry keepers of how to use drugs. Improper application of drugs was reported.

**Feed producers and suppliers.** Feed producers reported a number of constraints, including:

- Unavailability of enough raw materials. Feeds millers compete with humans for maize, cassava and other food materials. It is important to start thinking how to get alternative raw materials for feed millers.
- Inadequate government policy. Frequently, the government imposes bans on exportation of maize from one region to another in cases of shortages.
- Inadequate capital. Millers need enough capital to buy stocks of raw materials. Many feeds manufacturers complained of lack of adequate capital.
- Erratic power supply. Power cuts in Tanzania are a norm and this was reported as an important bottleneck to feeds manufacturing.
- Fake feeds. Due to lack of quality control, fake feeds are sold in the markets which compete with the genuine feeds.
- Inadequate supply ingredients. Ingredients for feeds formulation such as minerals and vitamins are not readily available. These are imported and only three importers have permits to import them.

**Financial services.** The financial landscape of the study areas is comprised of five main providers, namely, formal financial institutions; semi-formal financial institutions; NGOs; government credit programs; and informal rural finance. According to the results of this study, the main sources of financial capital for most of the actors is own savings. It was reported that access to formal lending was difficult and few participants reported to have accessed financial services through savings and credit institutions though this information is not surprising. It is widely held in literature that poor people are often discriminated against in the credit market<sup>2</sup>. According to a study commissioned by the Bank of Tanzania

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<sup>2</sup> This is usually attributed to lack of sufficient information among lenders about the borrowers; lack of sufficient information among the borrowers on the availability of credits; lack of collateral; the high transaction costs that finance institutions incur when dealing with small borrowers in remote rural areas; and the high risk of default due to the occurrence of shocks or moral hazard. The literature also explains the workings of the credit market and

(BOT) in 1997 the unmet demand for rural financial services by formal financial institutions was significantly high, thus forcing rural households to rely on informal financial services by 82%. A follow up survey in 2002 revealed that only between 6% and 8% of the total rural credit demand was met by the existing financial institutions (IFAD, 2002; URT, 2002).

Most poultry subsector actors lack the qualification for getting credits from banks and other financial institutions. Many actors are unable to meet credit conditions which include loan security, interest rate, business plan, permanent business premises, and reliability of the business activity. Lack of adequate knowledge on credit processing and management could be one of the sources of fear among many poor people on loan acquisition. People are worried over the consequences of the inability to repay loans, especially loss of security assets such as houses. The actors also have little knowledge on how to get connected to lending institutions due to lack of experience on borrowing from formal institutions. Inadequate savings mobilization in many places in Tanzania further enhances the problem. It was reported that saving and credit systems were weak. Due to inadequate access to financial services, many actors do not grow into medium and larger scale enterprises. Many actors persistently operate at a very low scale, which is in many cases due to limited vision and ability to manage larger enterprises. The results from this study highlight the need for an intervention in developing financial systems that can work to avail financial services to the poultry subsector actors.

Efforts are needed to link poultry subsector actors to financial institutions. For poultry keepers, for instance, arrangements could be made to channel their loans through their buyers who can receive loans on their behalf under contract farming system. Because lack of financial education is one of the bottlenecks to accessing financial services from formal financial institutions by many actors, this study suggests that training on financial education be provided to the actors. Credit guarantee arrangements can also be sought, as one of the problems limiting access to credits is lack of collateral. During the field work, the need for land titling was echoed as one of the best ways of solving the problems related to collateral. The important issue that this study raises is that land can be important collateral for many actors. Innovative ways in which to facilitate land titling in the areas with high population of poultry, in addition to other measures, are needed. One obvious strategy would be to involve the local governments, local people through their institutions in land use planning, management, and titling.

**Extension services providers.** Extension services are highly needed by poultry producers. To acquire a bigger share of the market, poultry producers should employ some aspects of product and functional upgrading. Production process upgrading will only succeed if technical advice and extension services are provided to poultry producers. An assessment of technical services reveals that, the primary providers of technical services in various fields are the District Councils (DCs). Regional and local governments have vital roles in providing extension services and advisory services to farmers. In line with the recent government decentralization process, the local government authorities are the major public service providers to the community and agricultural development. Technical services provided by the local governments are usually constrained by inadequate budget. The DCs are also responsible for providing overall technical support for group mobilization and formation of cooperative societies. The DCs also provide registration services and auditing of cooperative societies on behalf of the Registrar of cooperatives.

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how in recent years initiatives have been developed to addresses the failures listed above (Ellis, 1992; Matin et al., 2002; Moseley et al., 1998).

## **Supporting Projects for Poultry Industry**

### **Newcastle Disease Control**

ND is a major problem in the development of village chickens in Tanzania. The mortality rate due to ND can reach as high as 90% and sometimes devastates whole flocks during outbreaks. Control of ND in village chickens in the past had very limited success. Most of the vaccines used were heat sensitive and supplied in vials with large number of doses (usually 1,000 doses), which were not affordable for most rural farmers. Moreover, the effective cold chain system required for the distribution of these vaccines is lacking or deficient in most rural areas. However this obstacle has recently been overcome through the development of a thermo-tolerant ND vaccine I-2 that was developed in Australia and is extensively used in Tanzania. Administered by eye droppers, the I-2 vaccination techniques are easy, effective and sustainable. I-2 vaccine can be without refrigeration for up to two weeks and is in small vials so that large losses are eliminated.

For three years (2002–2005), the Southern Africa Newcastle Disease Control Project (SANDCP) implemented a community-based ND control program, with the aim of improving the livelihoods of poor villagers in Tanzania through increased numbers of birds and eggs. The SANDCP has produced and tested both the vaccine and extension materials. The project focused on an integrated program encompassing institutional strengthening of the government livestock sector and NGOs, and promoting rural community participation and ownership in the ND control. The pilot efforts have had a resounding success.

SANDCP made significant achievements in capacity building, community development, and poverty alleviation through developing and implementing a model for ND control that is sustainable. As a result Tanzania is now doing well in the control of ND in village chickens and continuing to produce and use increasing amounts of I-2 ND wet vaccine. Factors that contributed to the success of the SANDCP project included: a proven technology in the thermotolerant I-2 vaccine and the delivery mechanism; quality control of vaccine production and distribution; an organized campaign approach to vaccination of chicken populations; significant and demonstrable benefits to users that were realized under operational conditions; community consultation, participation, and careful training and extension to maintain quality control in the field.

There has been significant government support to the vaccine production activities at CVL which has led to improved vaccine production. During the fiscal year 06/07 (starting July 1, 2006 up to April 2007), CVL produced 14,496,000 doses of I-2 ND vaccine as a 'wet' vaccine. Production of the I-2 vaccine was in accordance to the improved standards to ensure good vaccine potency and efficacy under difficult field conditions. CVL endeavors to ensure that the successes of the activities will be sustained, and the laboratory is capable of producing sufficient quantity vaccine of an appropriate standard for use throughout the country. CVL has managed to achieve provisional registration of the I-2 vaccine with TFDA to better guarantee its quality and effectiveness to users and potentially expand sales networks within country and new markets in neighboring countries.

### **Poultry breeding**

In order to attain high productivity in village chickens, genetic improvement and the rearing of crosses between the local chicken and the pure breeds such as the Rhode Island Red (RIR) have been attempted on several occasions in Tanzania by the Ministry responsible for livestock. The success and impact has not been felt so far, possibly because it was a top-down approach with limited sensitization of farmers.

### **Animal Health**



The GoT has been involved in the control of notifiable diseases like fowl typhoid and Newcastle disease both in commercial and traditional poultry rearing systems. The PACE project greatly strengthened the national epidemio-surveillance and disease reporting network, and the control of notifiable diseases utilizes the facility for disease surveillance and monitoring. The MoLD has defined ND as a priority disease and formulated a national ND control policy including cost effective strategies. A similar strategy is envisaged for fowl typhoid. The implementation of strategies for ND control in local chickens and the monitoring and evaluation of progress have been carried out with great success (National ND Control Strategy 2007, under formulation). Meat and food inspection of locally processed or imported products to safeguard public health is implemented both by the GoT and TFDA. The definition of legally enforceable standards for products and services has been achieved through the EAC framework. Licensing and control of importers, wholesalers, retailers, and private veterinary practitioners is carried out by TFDA, VCT. TFDA is involved with enabling role by licensing appropriate vaccines/pharmaceuticals and facilitating imports. Zoo Sanitary Inspectorate Services is active in regulating the import of DOCs, breeding stock, and hatching eggs

Human resources development and capacity building at Sokoine University of Agriculture (SUA) have the responsibility to train high-level manpower in the country both at undergraduate and postgraduate levels. The annual intake of veterinary students has remained constant for the last 25 years, and there have been a total of 378 graduates since the inception of the degree (340 males and 38 females) (Mgassa, 2005). Tertiary training in livestock is done at Tengeru Livestock Training Institute (LITI) on ND control. Training was conducted in seven districts of five regions in Tanzania. The training was in the form of basic sensitization and awareness courses on important aspects of ND, coupled with a more specialized training in the control of the disease using the wet (liquid) form of I-2 vaccine currently being produced at CVL. The first workshop was sponsored by the Regional Land Management Unit (RELMA) and was organized for districts of Arumeru (Arusha); Mafia (Coast); Singida (Singida); Dodoma rural; and Dodoma urban (Dodoma region). The second series of ND seminars were in response to request by three DCs (Kilosa, Kilombero and Ulanga) of Morogoro region under Eastern Zone Client Oriented Research (EZCORE) projects.

In a bid to improve local chicken production in rural areas, the EZCORE has been educating smallholder farmers about improving local chicken production. In the period 1999 to 2007, EZCORE Project conducted a series of Farmers Fora with participants drawn from the eastern zone districts of Muheza, Kilosa, Kilombero, and Ulanga.

### **Ongoing poultry projects at Sokoine University of Agriculture**

Currently there are two ongoing projects on rural chickens at Sokoine University of Agriculture. (Msoffe, P.L personal communication): 1) Welcome Trust funded project on the improvement of livelihoods of the poor through education on the health and productivity of local poultry. The main activity for the project is training selected district veterinarians, extension staff and farmers. 2) A collaborative research project with the University of California Davis (UCD) on village level biosecurity as a measure to control (to prepare for) Avian Influenza. The main activity is the training of grassroot policy makers, extension staff and farmers on ND vaccination and disease identification. The author is implementing a project entitled Enhancing Rural Livelihoods through the Control of Newcastle Disease and the prevention of Avian Influenza in Tanzania. The development goal of the project is to improve the livelihoods of resource poor women, children, and HIV/AIDS affected households, by making available an affordable, reliable vaccine for the control of ND in village chickens and increased awareness of the prevention of zoonotic diseases such as HPAI. The activity will be for one year from February 2007 –January 2008, and will be based at CVL, Tanzania. Radio interviews will be recorded in Dodoma and Mtwara Regions. CVL has received development aid from the US Government towards preparedness for an Avian Influenza outbreak. The aid is in the form of laboratory equipment, reagents, and human capacity building. During the period June 18-29, 2007, the personnel from University of Minnesota in collaboration with National Veterinary

Services Laboratories, Ames Iowa (the OIE reference Lab on HPAI) will be engaged in the installation of laboratory equipment that arrived recently at CVL from the US and thereafter conduct training on their use. The training will involve all laboratory personnel of CVL virology and also lab personnel from Muhimbili National Hospital and National Institute of Medical Research (NIMR).

### **Dissemination of thermo-stable New Castle Disease vaccine in rural chicken of Mwanza Region, Tanzania**

The Lake Zone Agricultural Research Development Institute (LZARDI), based in Ukiriguru, Mwanza Region of Tanzania, implemented this project in partnership with the Ministry of Agriculture Training Institute (MATI) and the Veterinary Investigation Centre (VIC), also based in Mwanza. FARM-Africa's Maendeleo Agricultural Technology Fund (MATF) provided a two-year grant support which commenced in March 2005. The project aimed to increase rural chicken productivity and utilization through the use of thermo-stable vaccine among extension farmers to prevent poultry mortality from the New Castle Disease (NCD). The project also aimed to promote market development strategies and opportunities for the surplus chicken and thereby improve household incomes. The target districts were Kwimba, Missungwi, and Sengerema.

### **Improvement of Local Chicken Production and Marketing Project (TANA 74)**

This project is part of Oxfam's Tanzania Agricultural Scale-Up Programme (TASU) being delivered in 31 villages in Bariadi and Maswa district within the context of the Government of Tanzania's District Agricultural Development Plans (DADPs). Implementation of activities has involved close collaboration between Oxfam, Tanzania Society of Agricultural Extension and Education (TSAEE) as the lead partner, working with the District Councils through the District Contact person (DCP) and Ward Agricultural and Livestock Extension Officers (WALEO). In addition, local partners have been brought on board for sustainability of service provision. The process of engaging area based local partners to work with District Councils and the local communities has established the basis for stakeholders' ownership of the project, and hence sustainability. There are 143 groups involving 4,617 chicken keepers, 51% of which are women.

## **Interventions and Investments**

Generally the poultry industry in Tanzania is still underdeveloped and flock sizes are uneconomical. Marketing margins are relatively higher and lucrative. The study findings have shown that better profit margins are enjoyed by brokers and traders. This study has demonstrated that the subsector faces both demand and supply problems. The current supply level seems not sufficient to meet the potential demand. The main weak point lies on the production side. Business services to the subsector are limited thus requiring nurturing and subsidized support over a period of time. Partnership among players in the subsector is generally lacking. The current situation in the poultry subsector warrants intervention to promote value chains development as this approach is likely to ease the problems that are facing the subsector. Below are a set of interventions that are required.

## **Production**

One of the important issues that require attention relates to production systems. Currently, the poultry production systems, especially the traditional poultry production systems, are not business-oriented. Consequently, poultry production activities are inadequate and underdeveloped, as keeping poultry has continued to depend on poor animal husbandry practices which employ minimum inputs to achieve minimal returns. Inadequate technical and business skills were highlighted as the limiting factors for identification and implementation of IGAs. Most of the IGA operators have hardly received any training,

nor have they been provided with adequate extension services in relevant technical fields. Although investment in education is a medium- to long-term strategy, efforts can be made to improve skills of the poultry keepers through tailor made training in technical, financial, entrepreneurship, and business development so that they can improve their production systems. It is also proposed that efforts should be made to provide business coaching skills to extension and community development staff so they can provide business coaching services to poultry keepers.

Managing chicken diseases and pests is another area that requires attention. This is not a serious problem in the commercial production system, but due to cultural considerations, diseases are a critical challenge in the traditional production systems. Efforts are required to institute a durable disease control system which ensures that all the birds are vaccinated and treated all the time.

## **Marketing**

The current marketing organization lacks coordination. The transactions are random and are characterized by high risks and uncertainties. Because of this, disease epidemics appear to be a problem, and investments in poultry production have remained low. Chicken marketing is highly informal involving traders who are unskilled and is based on brokers' systems which are prone to moral hazards. Generally, there are no well-developed marketing systems and structures for indigenous poultry. Efforts are needed to organize poultry marketing in the country. Marketing system organization can be facilitated through value chain development. Managing markets through value chains starts with the recognition that the chain actors depend on one another for their business performance. This situation seems to be lacking among the key players in poultry chains. For partnership building, efforts are needed to coordinate the chain players by bringing them together and forge an understanding among them regarding the need to cooperate ensuring that quality products are supplied. Value chains can be coordinated through chain leaders, whereby one chain actor takes the lead in coordinating the value chain. Usually this role is assumed by downstream actors in the chain, such as trading agents and/or supermarkets. Value chains can also be coordinated through joint organization/associations - chain actors may join forces and establish a joint unit for chain coordination (e.g., livestock keepers and traders can work together in a single cooperative). Another approach to chain coordination is through third-party facilitation. An external chain facilitator has the advantage of being perceived by all participants as working for the value chain as a whole, rather than for any single chain actor. Each of these models of chain coordination has advantages and disadvantages. The most important consideration is, however, that the chain coordinator has the capacity to stand above the chain actors, and guard and promote the common interest.

## **Processing**

There is inadequate infrastructure for processing and marketing of livestock and livestock products in Tanzania. Processing is seen as an engine for the development of poultry value chain. The main challenge in promoting poultry processing is to how to create an effective processing industry. The Study Team proposes a two stage processing system for Tanzania. The first stage would be the initial activities (selection, grading, and production of quality animals) performed by poultry keepers through their groups. The performance of this stage will require capacity building for poultry keepers in terms of technical know-how, appropriate organization of their groups, and effective follow-up by the key buyers in collaboration with the extension staff.

The second stage would be promotion of industrial processors who will use poultry as their raw materials to produce finished products. To ensure compliancy to quality requirements, the processors, in collaboration with development facilitators, would be obliged to provide some technical support to the

poultry keepers regarding information management, quality management, innovation management, chain cooperation. As for production, the services from the lead partners would ensure uniformity, reliability, and the required quality of the products from poultry keepers. The poultry keepers would supply labor for all initial operations including management of selection and grading and production of quality animals.

## **Policy reforms**

Poultry marketing in Tanzania is informally regulated. Much of the difficulty that marketing agencies face in the market are related to the lack of coordination which is reflected in poor grading and standardization of quality, inadequate safety and disease control, usage of unofficial weights, and measures. With globalization, regionalization, and changes in tastes and preferences in the domestic and foreign markets, Tanzania needs to improve both public and private standardization capacity that can be used by producers to certify their products so as to improve competitiveness. A number of reforms are proposed so as to bring quick wins. These relate quality control legislation. The current legislations lack focus and have been the main source of inadequate coordination. A review is proposed to harmonize the various legislations governing the TBS, TFDA, TPRI, Marketing Boards, AHS, and local governments so as to specify mandates and responsibilities for vet drug availability, disease control, grading, and standardization.

This study has indicated that quality control and assurance can effectively be implemented through value chain development. Through value chain development producers, transporters, processors, and marketing agencies are coordinated toward delivering products of the required quality in the market. Before trade liberalization, coordination of production, transportation, processing, and marketing were done by public institutions including marketing boards. Because coordination was done by the public institutions, all the regulations geared to facilitating the operations of the public institutions. Following the economic reforms which started in 1980s, active participation of the public sector in productive sectors has been curtailed, paving a way for the participation of the private sector. However, while allowing the operations of the private sector was a necessary condition, it was not sufficient for complete marketing reforms. It was especially important to formulate, for example, in the livestock sector, the Livestock Marketing Legislations which would specify the role of the government in facilitating the development of value chains, the roles and conduct of various players in the value chains, rules, procedures, and regulations for facilitating contracting and enforcement of contracts.

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## **Annexes**

### **Annex 1: Terms of Reference (TOR) for Value Chain Analyses of Poultry Industries in Ethiopia, Tanzania and Uganda**

Winrock International (WI) has been commissioned to conduct value chain analyses of the poultry industries in Ethiopia, Tanzania and Uganda. The purpose of the studies is to complement the recently completed poultry value chain study in Kenya and provide a snap shot of the opportunities in the poultry sub-sector in East Africa. The project manager, Dr. Bonface Kaberia, met with the international consultant, Gregory Sullivan, to discuss and draft a TOR for each country national to undertake the work. The objective is to have a uniform approach that is compatible in all the countries. The key to each country study is for the national consultant to address the following components.

#### **Market Outlook for Poultry to 2020 (1 day)**

- Collect recent publications on demand of poultry and eggs in each country
- Per capita consumption of poultry and eggs in 2010 and use to project demand in 2020 based on growth in general population and urbanization
- Any other pertinent data on demand drivers in each country (income, relative prices of substitute meats and changing life styles)

#### **Supply Outlook (2 days)**

- Key poultry production regions in each country based on density of poultry populations (include maps)
- Cereal and oilseed production in key regions can be overlaid with bird density to identify key production areas for interventions and investments
- FAOSTAT historical data could be collected on production and consumption.

#### **Trade in Poultry, Eggs and Meat (1 day)**

- Statistics on imports and exports of live birds, DOC, eggs and meat to include domestic, regional and international trade from 2002 to 2009
- Key domestic live bird markets and how they link production of poultry by rural households to key consumer markets (overlay on map with production areas) (secondary and terminal markets)
- Maps of the country showing the density of poultry, grain supplies, and key markets

#### **Enabling Environment (2 days)**

Understand each government's current policies which contribute or hinder the competitiveness of the industry in each country. Person will need to interview a few key public and private sector stakeholders.

- Import policy on poultry meat and taxes on poultry equipment and other inputs
- Credits or subsidies to feed millers, hatcheries, producers, and marketing agents
- Government projects that support the industry, e.g. health, production, etc.

#### **Value Chain Mapping (6 days including field interviews)**



Describe key channels for poultry and eggs from input delivery, farm production, distribution, processing, and consumption

- Identify key actors at each stage, e.g. numbers of participants, volume of sales
- Identify and rank constraints faced by key actors which contribute or hinder the competitiveness of the industry in each country
- Identify and rank key actors' opportunities for contributing to competitiveness of the industry

**Price Mark-ups along the Value Chain (2 days – visits to markets and interview traders in both major urban markets and major rural markets)**

Price of poultry and eggs at each stage of the value chain for live poultry (1.2 kg live bird) and eggs (plate of 30 eggs or one egg)

- Farm gate price (cost of production plus gross profit margin)/bird or egg
- First market (village market) (Collectors cost plus profit margin)/bird or egg
- Secondary market (rural) (Collectors cost plus profit margin)/bird or egg
- Wholesale Terminal market (urban – Addis Ababa, Kampala, Dar es Salaam)/bird or egg
- Retail price cost (cost of processing plus profit margin)/kg of meat or egg
- Hotel-Restaurant-Institutional (cost of processing plus profit margin/kg of meat or egg)

**Supporting Projects for the Poultry Industry (2 days – interviews with key government officials and representatives of donor agencies)**

- Public sector projects (name, costs of project and time frame with a brief description)
- Private sector projects (name, cost of project and time frame with a brief description) (Commercial producers)
- International donor projects (name, cost of project and time frame with a brief description)

**Interventions and Investments (3 days)**

- USAID is generally interested in knowing what the possible interventions that would positively impact the development of the poultry industry in each country
- Interventions that would positively impact on smallholder involvement in contributing towards the competitiveness of the industry in each country

Total number of days for national consultant = 19 days

## Annex 2: Hatching Capacity of Existing Hatcheries in Tanzania

S/No	Regions	Name	Capacity (No. of chicks for 3 weeks)
1	DAR ES SALAAM	Amadori/Pollo-Italia	160,000
		Interchick	240,000
		Twiga Hatcheries	120,000
		Ideal Chicks	274,050
2	COAST	Kibaha E. C	180,000
		Ruvu KJT	30,000
		Kiluvya Poultry Products	153,000
		Mkuza Chicks	150,000
			9,000
		Tomato	
3	ARUSHA	Tanzania Poultry Farms	180,000
4	KILIMANJARO	Kilacha	30,000
		Kibo Hatcheries	60,000
5.	IRINGA	CEFA/Matembwe - Njombe	30,000



### Annex 3: List of Respondents

Sno	Names	Location	Organization	Contacts
1	Dr Michael Madege	Mwanza	VIC-Mwanza	
2	Lucas L. Massanja	Mwanza	Trader	0782-319300
3	Joseph k. Mkenga	Mwanza	Trader	0765-944963
4	Damian W. Shirima	Mwanza	Trader	0755-512533
5	Babu N. Makere	Mwanza	Trader	0787-966745
6	Ulimwengu H. Bakuza	Mwanza	Trader	
7	Hamis Ally Said	Mwanza	Trader	0682493443
8	Mohamed Hassan	Mwanza	Trader	
9	Athman Mussa	Mwanza	Trader	
10	Jumane Haji	Mwanza	Trader	
11	Ramadhan Hasan	Mwanza	Trader	
12	Ali M Ngendello	Mwanza	LZRDI	
13	Dickson Musula	Shinyanga	Inputs supplier	0754-367268
14	Anthon Kajunga	Shinyanga	Kajunga Farm	0713-647849
15	Doto Jige	Shinyanga	Mwalugoye Producer Group	
16	Joyce Joseph	Shinyanga	Mwalugoye Producer Group	
17	Christina Kashinde	Shinyanga	Mwalugoye Producer Group	0686-885350
18	Magreth J Koyi	Shinyanga	WELEAD	0713-483047
21	Theonestina Bairu	Shinyanga	TAHEA/District Livestock Office	0754-555660
22	John Kaijage	Dar Es Salaam	Ministry of Livestock and Fisheries	0655-532073
23	Agathe Kasigaire	Dar Es Salaam	Producer	0752-626133
24	Idd Mohamed	Dar Es Salaam	Producer	0713-292989
25	Edna Macha	Dar Es Salaam	Producer	0713-418809
26	Ally Yamtu	Dar Es Salaam	Trader	0655-089894
27	Yahya Msuya	Dar Es Salaam	District Livestock Office	0713-610952
28	Habiba Tamba	Dar Es Salaam	District Livestock Office	0713-297848
29	Zaina Mkomwa	Dar Es Salaam	District Livestock Office	0712-953867
30	Abdala Bawazir	Dar Es Salaam	Input supplier	0715-861173
31	Bakari Kabwe	Kibaha	District Livestock Office	0754-816617
32	Petre Kisaka	Kibaha	Producer	0688-387812
33	Baluya Mjika	Kibaha	Producer	0787-916700
34	Matha Atanak	Kibaha	Producer	0754-933314
35	Mackenzie John	Kibaha	Producer	0753-608373
36	Pulina Kapalasula	Kibaha	Producer	0754-536317
37	Julius Mabelle	Kibaha	Input supplier	0655-949843
38	Zainab Gombo	Kibaha	Input supplier	0762-941658

39	Issa Muhidini	Handeni Tanga	Trader	0655-804196
40	Maneno Mohamed	Handeni Tanga	Trader	0756-846997
41	Mchayungu Msambaa	Handeni Tanga	Trader	0719-003670
42	Hashim Nyanganya	Handeni Tanga	Trader	0713-595701
43	Miraji Shabani	Handeni Tanga	Trader	0786-245793
44	Agathe Mbelwa	Handeni Tanga	District Livestock Office	0757-780945