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# POULTRY SECTOR ACTION PLAN

**JANUARY 2009**

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## TABLE OF CONTENTS

<b>SUMMARY .....</b>	<b>5</b>
AZERBAIJAN AND THE POULTRY SUB-SECTOR .....	5
TABLE EGG VALUE CHAIN .....	5
CHICKEN MEAT VALUE CHAIN .....	6
POULTRY SOCIAL ORGANIZATIONS.....	7
POULTRY SUB-SECTOR ENABLING ENVIRONMENT .....	8
ACTION PLAN – AND RECOMMENDATIONS .....	8
<b>SECTION 1. OVERVIEW .....</b>	<b>10</b>
<b>1A. INTRODUCTION.....</b>	<b>10</b>
1A1. POULTRY SUB-SECTOR ASSESSMENT GOAL AND OBJECTIVES.....	10
1A2. ASSESSMENT METHODOLOGY.....	10
1A2. CONCEPTUAL OVERVIEW OF A POULTRY SUB-SECTOR TRANSITION .....	1011
1A4. POULTRY INDUSTRY TRENDS .....	12
<b>1B. AZERBAIJAN – COUNTRY BRIEF .....</b>	<b>17</b>
1B1. POPULATION TRENDS .....	17
1B2. DEMOGRAPHICS .....	18
1B3. POULTRY SUB-SECTOR STRUCTURE .....	19-23
<b>SECTION 2. POULTRY SUB-SECTOR ASSESSMENT FINDINGS .....</b>	<b>24</b>
<b>2A. MARKET ANALYSIS – POULTRY PRODUCTS.....</b>	<b>24</b>
2A1. IMPORTS .....	24-25
2A2. EXPORTS .....	26
2A3. INDUSTRY TRENDS .....	27
2A4. PRICE TRENDS .....	27
<b>2B. TABLE EGG VALUE CHAIN .....</b>	<b>29</b>
2B1. OVERVIEW .....	29
2B2. TABLE EGG MARKET SITUATION .....	29
2B3. TABLE EGG VALUE CHAIN MAPPING .....	30
2B4. TABLE EGG VALUE CHAIN TECHNICAL ANALYSIS .....	33
2B5. TABLE EGG VALUE CHAIN SWOT ANALYSIS .....	33
2B6. TABLE EGG VALUE CHAIN DEVELOPMENT STRATEGY .....	34
<b>2C. CHICKEN MEAT VALUE CHAIN .....</b>	<b>36</b>
2C1. OVERVIEW .....	36
2C2. CHICKEN MEAT MARKET SITUATION .....	36
2C3. CHICKEN MEAT VALUE CHAIN MAPPING .....	37
2C4. CHICKEN MEAT VALUE CHAIN TECHNICAL ANALYSIS.....	42
2C5. CHICKEN MEAT VALUE SWOT ANALYSIS .....	42
2C6. CHICKEN MEAT VALUE CHAIN DEVELOPMENT STRATEGY .....	43
<b>2D. FEED INGREDIENTS AND MILLING .....</b>	<b>43</b>
2D1. OVERVIEW .....	43

2D2. PRIMARY INGREDIENTS .....	44
<b>2E. POULTRY SUB-SECTOR ENABLING ENVIRONMENT .....</b>	<b>44</b>
2E1. OVERVIEW .....	44
2E2. EDUCATION, TRAINING, AND CERTIFICATION .....	45
2E3. POLICY AND REGULATORY .....	46
2E4. FINANCIAL SERVICES.....	48
<b>SECTION 3. POULTRY SUB-SECTOR ACTION PLAN.....</b>	<b>52</b>
<b>3A. ENHANCING THE AZERBAIJAN POULTRY SOCIETY .....</b>	<b>52</b>
3A1. OBJECTIVES .....	52
3A2. ACTIONS .....	53
3A3. BENCHMARKS .....	54
<b>3B. BUILDING CUSTOMIZED POULTRY BUSINESS SIMULATION MODELS.....</b>	<b>54</b>
3B1. OBJECTIVES .....	54
3B2. ACTIONS .....	56
3B3. BENCHMARKS .....	56
<b>3C. DEVELOPING STRATEGIC PLANS .....</b>	<b>56</b>
3C1. OBJECTIVES .....	56
3C2. ACTIONS .....	56-57
3C3. BENCHMARKS .....	57
<b>3D. INCREASING PRODUCTIVITY .....</b>	<b>57</b>
3D1. OBJECTIVES .....	57
3D2. ACTIONS .....	58
3D3. BENCHMARKS .....	58
<b>3E. ACCESSING FINANCE .....</b>	<b>59</b>
3E1. OBJECTIVES.....	59
3E2. ACTIONS .....	59
3E3. BENCHMARKS .....	59
<b>ANNEX A. ACTION PLAN TIMELINE .....</b>	<b>60-62</b>

## Acronyms

<b>AI</b>	Avian Influenza
<b>DOC</b>	Day old chicks
<b>MDPM</b>	Mechanically deboned poultry meat
<b>MT</b>	Metric Tons
<b>PSCEP</b>	Private Sector Competitiveness Enhancement Program
<b>SPS</b>	Sanitary and Phyto-Sanitary
<b>TBT</b>	Technical Barriers to Trade

## Terminology

- Pullet is a female chicken not yet in egg production
- Hen is a female chicken laying eggs
- Parent breeder stock, are mixed male and female chickens producing fertile eggs to be set in incubators for hatching
- Straight run means mixed male and female chickens
- Layer type chickens are a breed with egg production traits
- Broiler type chickens are a breed with meat production traits
- Dual purpose breed is a breed of chicken with a mix of egg and meat production traits
- Spent hens are hens that have finished their egg production cycle and are ready for slaughter
- Halal is an Arabic word meaning lawful or permitted.
- Haram, which means unlawful or prohibited. Halal and haram are universal terms that apply to all facets of life. However, these terms are often used in relation to food products, meat products, cosmetics, personal care products, food ingredients, and food contact materials. All foods are considered Halal except the following, which are haram: swine/pork and its by-products, animals improperly slaughtered or dead before slaughtering, animals killed in the name of anyone other than ALLAH (God), alcohol and intoxicants, carnivorous animals, birds of prey and land animals without external ears, blood and blood by-products, foods contaminated with any of the above products
- Hierarchy of terms used in this document:
  - Agriculture sector:
    - Poultry sub-sector:
      - Chicken meat value chain
      - Table egg value chain
- Conversion rate of \$1.00 equals 0.807 Manat (AZN)

**Thanks:** The author would like express his thanks to the entire PSCEP team for their assistance during this consultancy. Thanks also to Tom Deeb, Consultant, for sharing information and contacts; and to Chingiz Orujov for facilitating meetings and providing translation services.

## Summary

This section summarizes major findings from the assessment and outlines recommendations made in the proposed action plan. The summary presents these findings in a question and answer type format.

### Azerbaijan and the poultry sub-sector

***What are important demand side elements for expanding the poultry sub-sector?***

Azerbaijan has a growing population, with increasing income, and residing more and more in urban areas. These urban areas are also attracting larger supermarkets to accommodate the increase in wealth and offering greater variety of products to consumers.

***What factors contribute to global chicken meat consumption?*** World poultry meat production in developing countries has exceeded that of developed countries during the last decade, with an annual rate of growth of 7.4% during the last four decades. The demand for animal protein tends to be income-elastic and follows changes in the Gross Domestic Product (GDP) of a country. It has been well established that as incomes rise, so does consumption of meat products, especially chicken meat. Azerbaijan has experienced a relative rapid increase in GDP and household level income over the last eight years.

***What are the global eggs consumption patterns?*** The high-income countries of the world consume about 190 table eggs per capita per year, middle-income countries consume about 109 table eggs per year, and low-income countries consume about 30 table eggs per capita per year. Per capita consumption of table eggs in Azerbaijan is about 96 eggs per year, a bit low for a middle-income country, thus room for growth.

***What is the competition for chicken meat?*** Chicken meat produced in Azerbaijan competes with lower cost sausage products and frozen leg quarters from the US. It competes in the same price range with imported whole frozen birds and most chicken parts; and is significantly cheaper than beef, lamb, and fish products. Per unit of animal protein – table eggs are perhaps the best buy in Azerbaijan today.

***What are the opportunities for the poultry sub-sector?*** The major opportunity is for poultry companies to understand changes in consumer behavior and to position products to take advantage of this behavior in a positive way. One key tactic will be to lower costs of production through increases in productivity; and expanding demand, through promotion and by offering new value added products.

### Table egg value chain

***How are table egg companies structured?*** The table egg value chains in Azerbaijan are vertically integrated commercial companies with large volumes of production. These Companies include feed mills, hatchery, pullet rearing, layer, and packaging/distribution enterprises. Only one of the identified companies has a parent stock enterprise and thus they rely on importing fertile hatching eggs or day-old-chicks.

***What is the current level of table egg production?*** Current national production of table eggs is estimated by the consultant to be about 811 million table eggs. The State Statistical Committee has reported 2007 egg production to be just over 871 million eggs. There are about 4 large table egg producers with about 80% of national production of over 650 million eggs per year; 8 medium sized producers with about 16% of the national production of over 130,000 million eggs per year, and 6 small producers with 4% of national production of over 31 million eggs per year. It should be noted that this level of production probably represent 60 or 70% of capacity, in that most table egg producers, especially the medium and small firms, are not operating at full capacity.

***What is the current estimated value of table egg production?*** If we assume production at 820 million table eggs per year this is equivalent to about 96 eggs per capita. Also, the wholesale value of these eggs, at today's wholesale price of \$1.933/dozen would equate to about \$132 million.

***What are their strengths?***

- Vertically integrated
- Growing consumer purchasing power
- Access to rail lines for ingredient imports
- Growing urban consumer population
- Relatively low energy costs
- Fulltime veterinarians
- Relatively good infrastructure (roads, water, power, rail access)
- Unused capacity for expansion

***What are the opportunities?***

- Investment in new technologies to increase productivity (e.g. incubators, added value processing equipment)
- Consumer education
- Industry promotion to expand demand – fresh and Azeri made
- Reduce day-old-chick costs by investing in parent stock
- Equity financing available
- Possibility to lower costs through improved management systems
- Export potential to neighboring CIS countries

## **Chicken meat value chain**

***How are companies structured?*** The commercial chicken meat production system can be characterized as large in scope, vertically integrated, serving between 45 and 55% of the domestic market. Most chicken meat is sold as whole frozen birds in a poly bag; however some companies are selling tray packs of whole birds, thighs, drumsticks, wings, liver, heart, and deboned white meat. They also sell bulk cartons of wings, thighs, necks, from broilers and deboned white meat from spent breeder birds. They own and operate a feed mill, hatchery, grow-out buildings, processing, and distribution enterprises. Only one of the six chicken meat producers has parent stock and produced hatching eggs for their own use and some local sale.

***What is the current level of chicken meat production?*** The commercial chicken meat industry produces about 40,500 MT of processed per year. The State Statistical Committee reports about 49,000 MT of chicken meat per year in 2007. The consultant is not sure where this difference comes from. It is possible that 4 to 5,000 MT is produced by the small broiler producers, but this is doubtful. The bulk of this tonnage is sold as whole frozen broilers with an average dressed weight of 1.0 to 1.25 kilograms. Industry leaders interviewed feel that 70 to 80% of this volume is sold as whole frozen birds with 20 to 30% sold as cut-up parts. These proportions are changing as the largest chicken meat producers invest in upgrading their processing lines and packaging so they can serve the growing demand for chicken parts.

***What is the current estimated value of chicken meat production?*** If we consider 75% of 40,000 MT of production, or about 30,000 MT sold as whole frozen birds per year. The wholesale value of this 30,000 MT, sold at about \$4.46/kg, is valued at \$136 million dollars per year. Likewise, if 25% of the 40,000 MT or 10,000 MT is sold as chicken parts, at about \$6.50/Kgs, then the wholesale value is estimated to be \$65 million dollars per year. Therefore, the total wholesale value commercial chicken meat is estimated to be \$201 million dollars per year.

***What are their strengths?***

- Vertically integrated
- Growing consumer purchasing power
- Access to rail lines for ingredient imports
- Growing urban consumer population
- Relatively low energy costs
- Fulltime veterinarians
- Relatively good infrastructure (roads, water, power, rail access)

***What are the opportunities?***

- Expansion of cut-up market
- Added value products
- Investment in new technologies to increase productivity (e.g. incubators, added value processing equipment)
- Consumer education
- Industry promotion to expand demand – fresh and Azeri made
- Reduce day-old-chick costs by investing in parent stock
- Equity financing available

## **Poultry social organizations**

***Overview:*** In principal, the Azerbaijan Poultry Society unites 29 companies for the purpose of lobbying government on behalf of both the table egg and chicken meat industries. The current situation seems to be quite limited in that the Director and two part time staff do not receive the support necessary to maintain an active and vibrant organization. Strengthening the Society, both directly by the project and through increased support by member companies is an integral part of the proposed action plan. The consultant recommends utilizing the Society as the primary vehicle for the delivery of technical assistance, thus encouraging active participation by members. It will also

enable Society staff to provide information services, effective advocacy, drafting of policy memoranda, and promoting industry products through national promotion campaigns. This arrangement will be formalized in a three way memorandum of understanding between the Project, Society, and Companies participating in the plan.

## **Poultry sub-sector enabling environment**

**Overview:** This is perhaps the most disappointing finding of this assessment. There is essentially very, very little formal poultry education in Azerbaijan today. Moreover, the education that exists is poor in quality and out dated in context. The commercial poultry companies are required to send staff to Russia or Kazakhstan for formal training.

Company leaders expressed their desire for assistance in upgrading the technical skills of staff. The proposed action plan is focused on increasing Company productivity, through skill development and improved information management systems.

## **Action Plan – and recommendations**

### ***What is the recommended focus of the action plan?***

The proposed action plan has five components. They are: A) Enhancing the Azerbaijan Poultry Society, B) Building customized poultry business models, C) Developing strategic plans, D) Increasing productivity, and E) Accessing finance.

**Component A. Enhancing the Azerbaijan Poultry Society.** The objective of this component is to facilitate the development of the Azerbaijan Poultry Society by securing the support of most, if not all, of the major poultry sub-sector companies. By the end of the PSCEP project this Society should be able to provide members with the following types of activities and services:

- Facilitate access to regulatory information
- Facilitate domestic and international industry networking
- Promote Industry to the public (especially on Avian Flu issues)
- Facilitate access to consumer preferences
- Facilitate access to technical production and sanitary information
- Facilitate access to industry linkages and comparative international benchmarks
- Facilitate access to domestic market supply information,
- Facilitate access to management, consumer, supplier, and marketing information

**Component B. Building customized poultry business simulation models.** The objective of this component is to teach company representatives to build their own technology driven business models to be used for strategic planning, enterprise management, financial analysis, and accessing finance. Each model will be customized for company use and information provided by the companies will remain confidential.

**Component C. Developing strategic plans.** The objective of this component is to teach company representatives to develop company strategic plans, enterprise monitoring tools, and financial reporting systems. Information generated from these activities will be



utilized for measuring productivity, identifying opportunities for technical improvements, and evaluating different financing scenarios.

***Component D. Increasing productivity.*** The objective of this component is to build capacity of technical staff of each enterprise within each company in order to increase measurable performance benchmarks over time. For example, the Project will conduct technical training for feed mill, breeder, hatchery, grow out, layer, processing, and other enterprise managers in order for them to increase enterprise level productivity. Productivity benchmarks will be established and monitored over time, and then utilized in the company simulation model to evaluate the impact on profitability and other financial parameters.

***Component E) Accessing Finance.*** The objective of this component is to work with Company managers on the following tasks: 1) determine the impact of an investment in a technology on Company profitability, 2) facilitate the identification of vendors of such technology, 3) introduce Company managers to financial institutions, and 4) assist Company managers in the negotiation of loan packages.

***How will the action plan be implemented?*** A series of workshops delivered in collaboration with the Poultry Society, by short-term technical experts and a local professional value chain manager. The workshops are front loaded into the 2009 project year in order to focus on accessing investment finance in the following years.

## Section 1. Overview

### 1A. Introduction

#### 1A1. Poultry sub-sector assessment goal and objectives.

The *goal* of this assessment is to develop a detailed action plan for assisting the poultry sub-sector in Azerbaijan, where proposed assistance would lead to increases in sales, investment, and jobs. The specific *objectives* of this consultancy were to assess the current state of poultry value chains, with emphasis on the chicken meat and table egg value chains. Value chain methodology was utilized to identify constraints on the value chains and to recommend actions and tasks that could be implemented by the project to mitigate such constraints.

#### 1A2. Assessment methodology

The methodology used in this assessment involved accessing a set of information sources in order to triangulate and ground truth findings during the assessment. It should be noted that most companies interviewed were not very open to sharing price and cost information, and often the technical information offered, was suspect. Nevertheless, a general understanding of the poultry sub-sector in Azerbaijan today was developed in a short period of time. The consultant utilized the following sources of information during the assessment:

- Interviewed poultry company managers and conducted site visits.
- Accessed the database of The State Statistical Committee of the Republic of Azerbaijan.
- Conducted interviews with financial institution managers, importers, wholesalers, and retailers.
- Surveyed retail and semi-wholesale stores for current product prices.
- Interviewed independent Azeri consultants familiar with the poultry sub-sector.
- Interviewed donor supported project managers.
- Reviewed historical project documents from USAID, World Bank, European Commission, and various NGOs operating in Azerbaijan.
- Searched the USDA database for international poultry trends.

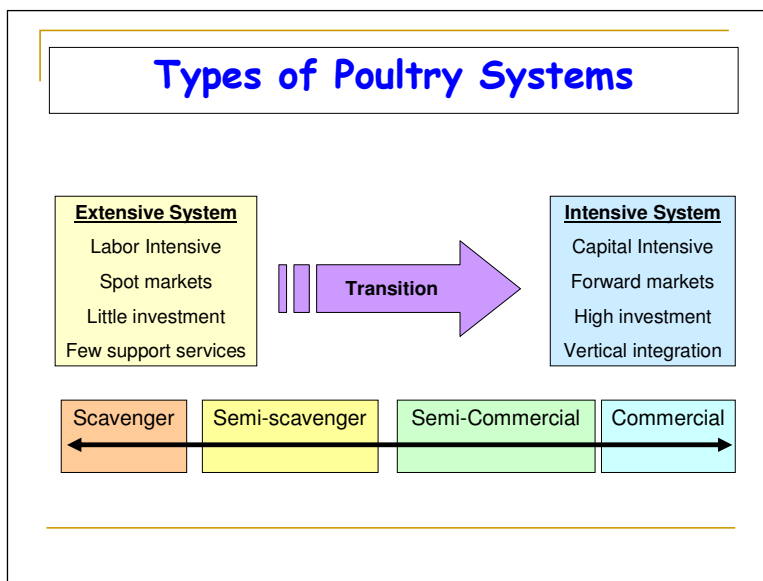
Notes: 1) The consultant has endeavored to reference each source of information and hopes that no omissions have been made. 2) Many companies interviewed were reluctant to share any cost or price information. They did share technical information, but much of this information was considered “ball park” in nature. Nevertheless, a general view of the situation was obtained and recommendations made are considered realistic and practical.

#### 1A2. Conceptual overview of a poultry sub-sector transition

### ***Conceptual overview of a poultry sub-sector transition***

Poultry production systems evolve or transition over time due to the prevailing conditions in a given country. Conditions include macro and micro-economic factors, availability of appropriate education and support services, and market demand for products. The following four types of systems are defined in general terms to help the reader understand the basic requirements of one system transitioning to a more intensive system.

**a) Backyard scavenger system.** The primary poultry production system in many developing countries is by far the traditional backyard scavenger system where small numbers of domestic fowl for home consumption with small, mostly seasonal surpluses being sold in village markets. Birds scavenge around the household for whatever source of food they can find. Flock size is usually less than 10 birds and the hens each produce about 60 eggs per year. Domestic fowl, compared to improved breeds, are relatively disease resistant however mortality rates are usually high. This backyard system is defined as an extensive system, whereas commercial systems are defined as intensive systems.



**b) Semi-scavenger system.** A semi-scavenger system is the next step in the transition towards commercial poultry activities. In this system dual purpose birds (bred for meat and egg production) are managed in rudimentary housing with basic equipment, are supplied with at least fifty percent of their feed needs, and receive medications. Flock size ranges from 10 to 500 birds with mixed breeds and average egg production is in the range of 125 to 150 eggs per year.

**c) Semi-commercial system.** A semi-commercial system transitions the poultry producer to more intensive management practices. Typically, these systems are small-scale and range in size from 500 to 5,000 birds that are housed in total confinement and provided with all of their feed needs. This system is usually utilized by producers that have transitioned from semi-scavenger systems and have developed their management capabilities, found market outlets for their products, and can obtain working capital for purchasing their feed needs.

**d) Commercial system.** Commercial systems are large-scale production operations utilizing capital intensive equipment and technologies. These systems often vertically integrate production, processing, hatchery, and feed mill functions into a self contained and independent system.

## 1A4. Poultry industry trends

### *Global table egg trend – Significant growth in middle income countries.*

Eggs are an excellent source of low-priced protein and are consumed worldwide. On a global basis, commercial layer type chickens will each produce between 265-320 eggs per year.

Egg consumption averages 190 eggs per capita in high-income countries, compared to 109 in middle- and 30 in low-income countries in 2000. From 1980 through 2000, consumption declined by 14 percent in the high-income countries, but showed a nearly 10 percent growth in middle income countries.<sup>1</sup> By 2001, middle-income countries accounted for the largest share of total world production, about 66 percent, compared with 24 percent in high-income countries. World chicken egg production increased more than four fold between 1961 and 2001. China produces about 41 percent of the world production, followed by the EU and the United States.

In the United States, the grade and size of eggs are regulated by law. These egg grades are AA, A, and B, and must have sound, whole shells and must be clean. In the US, egg size is determined by the weight of a dozen eggs, not individual eggs, and range from Peewee to Jumbo. Table eggs can stay fresh for 3 to 5 weeks in a home refrigerator, according to the USDA.

Egg consumption in many countries has been increasing at a slower pace than the four per cent gains witnessed during the mid-1980s. A decrease in egg consumption by developed countries has contributed to the general slower year-to-year increase in consumption. Egg consumption is also subject to different types of food scares associated with salmonella and avian flu.

China is the number one egg producer in the world.<sup>2</sup> In 1991, China produced nine million tons of eggs, a figure that rose to about 433 billion eggs in 2003. While per capita consumption of eggs has been declining in Japan in recent years, China's per capita consumption has been steadily increasing. In the Americas during 2000, the US (259 eggs per year) and Mexico (327 eggs) are the largest egg consumers. Examples of low egg consumers include India (36 eggs), Brazil (89 eggs), and Indonesia (44 eggs). Examples of high egg consumers are Taiwan (358 eggs), Japan (346 eggs), and China (308 eggs).

A key trend in developed countries is consumer demand for free-range chickens and organic eggs, particularly in the United Kingdom and other EC countries, with sales of free-range and organic eggs increasing over the last few years.

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<sup>1</sup> Source: Foreign Agriculture Service, Commodity and Marketing Program.

<sup>2</sup> Elsevier Food International, Vol. 9, Number 3, September 2006

**Table eggs: Per capita consumption, including egg products, selected countries (pieces per person)**

	1995	1996	1997	1998	1999	2000*
United States	236	238	240	245	256	259
Canada	198	203	207	210	212	212
France	264	258	254	259	266	262
Germany	225	227	227	226	226	227
Bulgaria	151	132	125	141	149	150
Romania	129	177	180	190	178	178
Russia	212	198	201	210	207	205
Ukraine	168	164	155	157	158	154
Turkey	121	123	128	122	87	91
China	246	252	272	288	295	308
Japan	342	344	353	348	347	346
Thailand	132	137	146	140	135	141

Source: Foreign Agriculture Service, Commodity and Marketing Program.

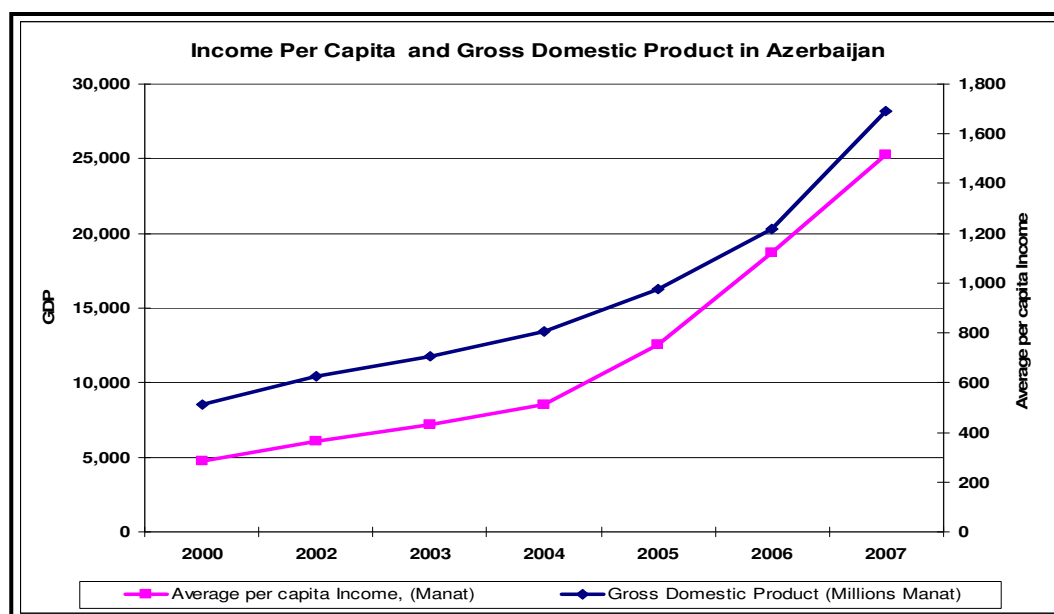
\* Estimated

### *Global chicken meat consumption trends.*

The demand for animal protein tends to be income-elastic and follows changes in the Gross Domestic Product (GDP) of a country. It has been well established that as incomes rise, so does consumption of meat products, especially chicken meat.

Figure 2 illustrates a relatively rapid growth in GDP and average per capita income over the last seven years in Azerbaijan. This growth would support the notion of increasing demand for meat products, especially the more affordable chicken meat products, relative to beef, lamb, pork and fish.

**Figure 2. Growth in Azerbaijan's Gross Domestic Product and Average Per capita Income since 2000.**



Source: Azerbaijan State Statistic Committee

World poultry meat production in developing countries has exceeded that of developed countries during the last decade, with an annual rate of growth of 7.4% during the last four decades.

Worldwide, chicken (primarily broilers, but also spent breeder hens and males, and spent table egg layers) continues to be the most popular poultry meat, representing about 85% of the total poultry meat output.

Worldwide, broiler meat production in 2001 was estimated at 70% of total poultry meat production. Whereas, turkey, duck, goose, and other species (guinea fowl, pheasants, quail, squab, and ratites) only account for 7.5%, 4.2%, 2.8%, and 0.5%, respectively, of the world total poultry meat production (FAO, 2001).

In recent years, (except for turkey meat) chicken, duck and goose meat production in developing countries exceeded that of developed countries. The US leads the world in chicken (14 million MT) and turkey (2.4 million MT) meat production. China, on the other hand, is the worlds' largest producer of duck (1.9 million MT) and goose (1.8 million MT) meat.

### ***Trade in Poultry Meat Products***

The poultry sector of the global meat supply has experienced a dynamic growth in production, consumption, and trade since the mid 1980's, primarily paralleling economic prosperity in developing countries.

Most of the growth in production is attributed to:

- Intensification of production
- Vertical integration of the industry
- Relatively low feed prices, and
- Further processing.

Poultry meat and eggs continue to be the most efficient and economical way to convert feed grains to animal protein.

Broiler supply and demand is expected to grow more internationally, especially for frozen whole birds, parts, bone-in-leg quarters, and boneless dark meat, driven primarily by large fast-food chains.

Historically, introduction of many novel poultry products into the market was an attempt to find outlets for meat trimmings, low-value cuts, and parts from the processing of whole birds. Later, expansion of food service and fast-food chains, increasing demand for finger foods, availability of mechanically deboned poultry meat (MDPM) for frankfurters and luncheon meats, and development of marinating technologies have all contributed to the product diversification at the retail level.

Most of these value-added products, formulated primarily to suit the local palate, not only target the changing needs of consumers (i.e., convenience, nutrition, health, quality, variety, shelf-life), but also allows a marketing edge over imports. Many exotic recipes and ready-to-cook marinated stick products from Asia, developed primarily for domestic

markets, are now in demand by the poultry importing countries elsewhere (Europe, Japan, Australia, New Zealand).

Consumers worldwide demand a protein supply that is safe, wholesome, nutritious, abundant, and affordable. However, food safety standards are currently not uniform, or equally enforced, around the world.

**Broiler Meat: Per capita consumption summary of selected countries (Kgs per person)**

	2004	2005	2006	2007	2008 (preliminary)
United States	44.6	45.4	46.1	45.1	45.1
Russia	11.7	25	16.7	18.3	19.8
Saudi Arabia	34.5	38.3	35.6	36.9	37.1
South Africa	20.5	22.5	25.1	25.7	26
Ukraine	10.1	9.1	11.2	13.2	17.1
Thailand	10.2	12.3	12.5	12.6	12.3
Venezuela	30.3	33.3	32.4	34.7	39.4
Japan	13.5	14.8	15.2	15.3	15.2
EU-27	14.3	15.2	14.4	15.5	15.9

Source: Foreign Agriculture Service/USDA/Office of global analysis

Figure 3 below illustrates the trend in US per capita consumption of meat products where consumption of chicken meat surpassed pork meat in the early 1980's and beef meat in the early 1990's. Much of the recorded increase in demand was do to the changes in consumer behavior, product diversity, and fast food industry expansion described above.

**Why is this important?** Price sensitive consumers will continue to seek out affordable meat products, and chicken meat will continue to compete on price with beef, pork, and lamb.

**Figure 3. US Trends in per capita meat consumption.**

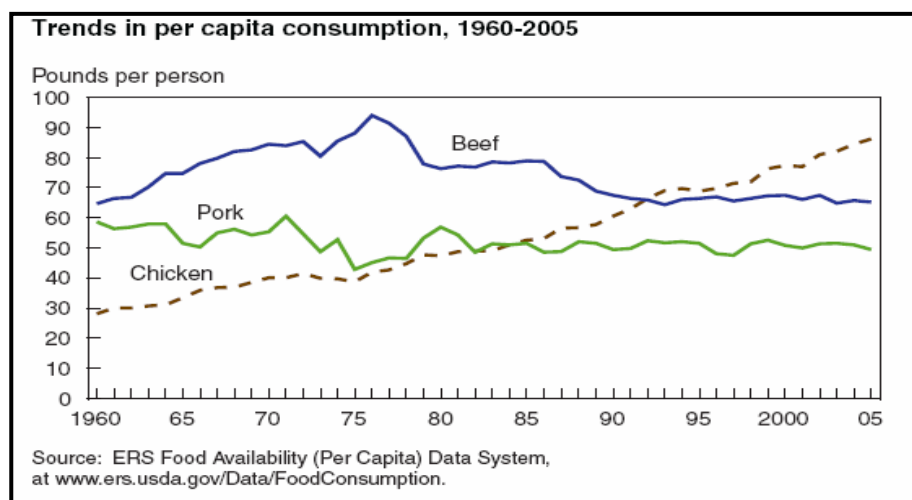
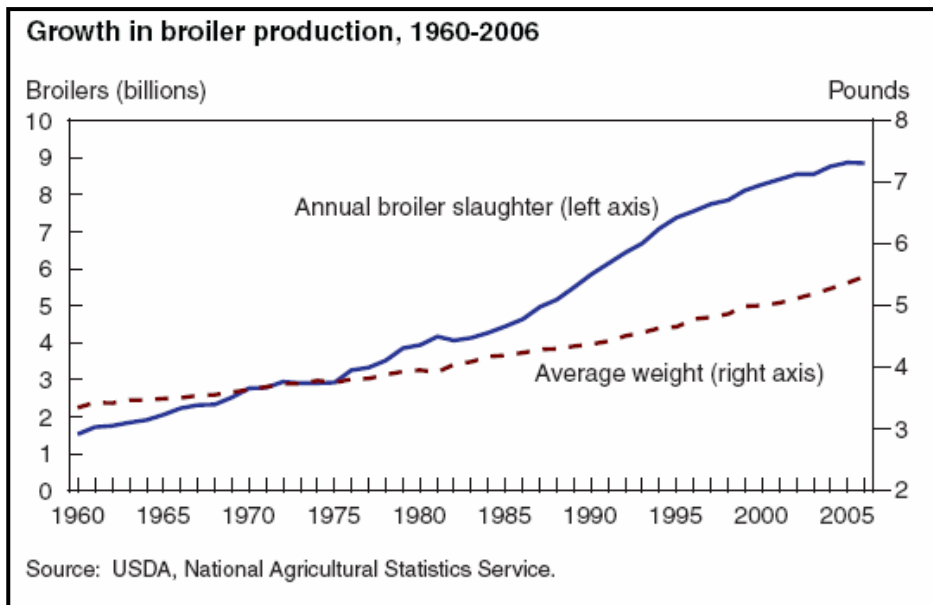


Figure 4 below illustrates the growth of the US chicken meat industry over time, responding to consumer demand as well as the changes in the average broiler body weight. This increase in average broiler body weight was required to meet the demand for the deboned white meat market, where larger birds yield more white meat.

**Why is this important?** The Azeri chicken meat industry must recognize this emerging opportunity for providing urban consumers with more and more affordable, safe, and convenient meat products. This assumes an expanding market for chicken parts and added value chicken meat products.

**Figure 4. Growth in the US broiler industry.**





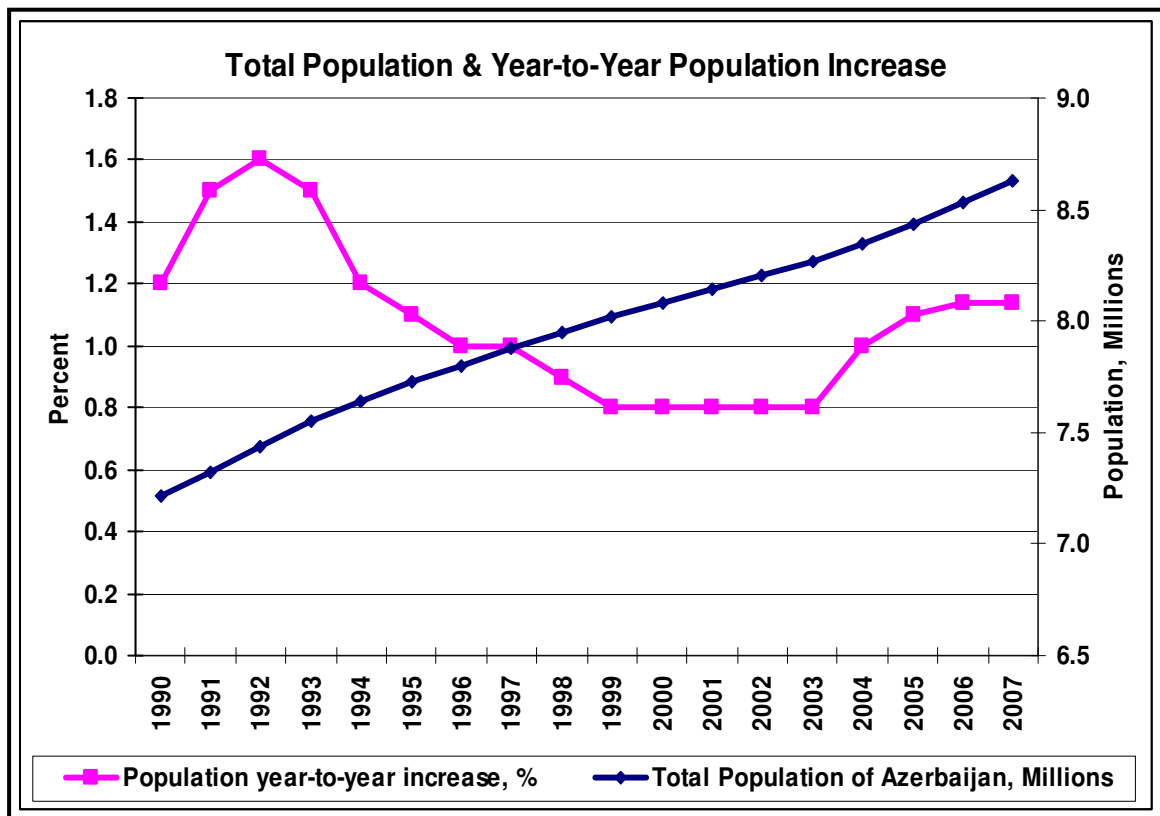
## 1B. Azerbaijan – country brief

The following information on national population trends, the growing primary market of Baku, urbanization trends, and the major urban areas of Azerbaijan are important in that they illustrate the potential growth in demand for poultry products. The fact that Azerbaijan has a growing population, that is increasingly urbanized, and with greater household income all bodes well for the poultry industry.

### 1b1. Population trends

The total population of Azerbaijan currently stands at an estimated 8,629,900 and is growing by about 100,000 inhabitants per year, representing about a 1.1% annual increase in recent years. This growth rate is up from about 0.8% annual growth between 1999 and 2003. These rates are estimates in that the last formal census was made in 1990.

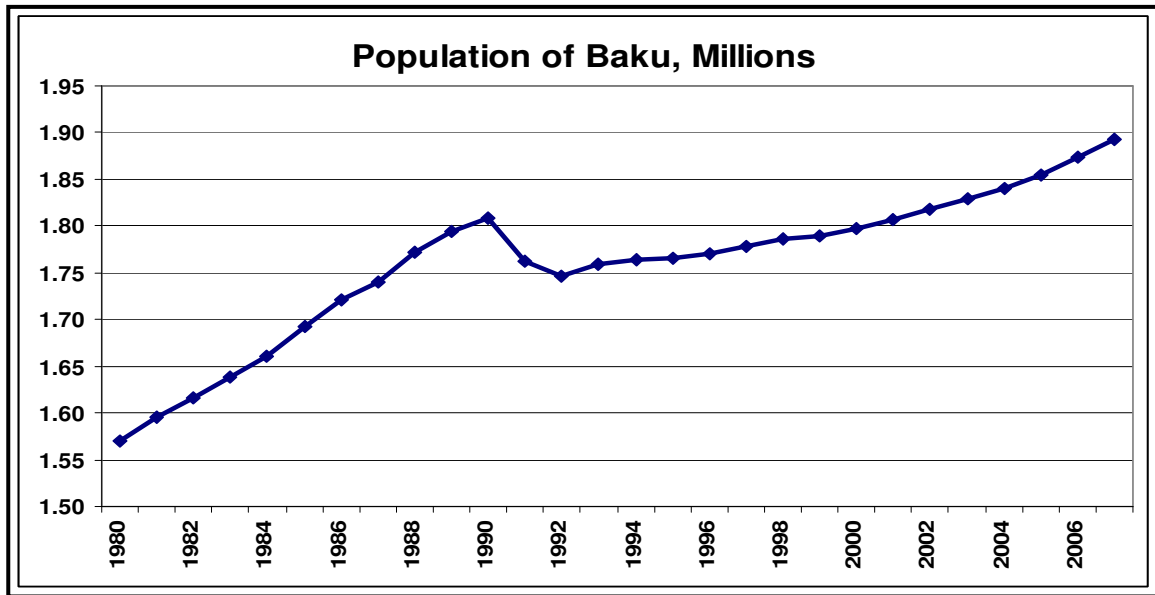
Figure 5. Total population and year-to-year population increases.



Source: Azerbaijan State Statistic Committee

Baku is the primary market for poultry products and is expanding more rapidly than other urban areas of Azerbaijan. Most all of the poultry company leaders interviewed have stated that they market the largest proportion of their products in Baku. Those that are shipping frozen products as far as a days drive still market most of their production in Baku.

**Figure 6. Yearly increases in the population of Baku**



Source: Azerbaijan State Statistic Committee

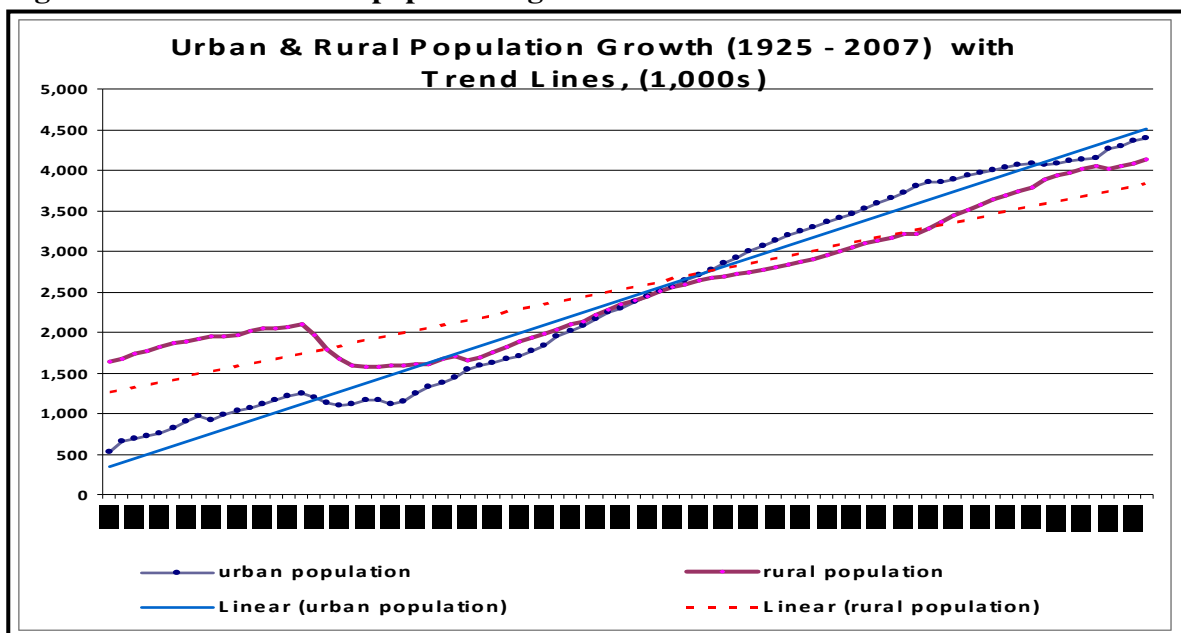
**1b2. Demographics**

Figure 7 below illustrates the changes in rural and urban populations over the last 82 years. The rate of urban growth has been accelerating, relative to rural growth, since the early 1970s, with some re-convergence in the early 2000s.

*Why is this important?*

The expected growth in demand for added value poultry products will come from urban consumers to a greater degree, than from rural consumers.

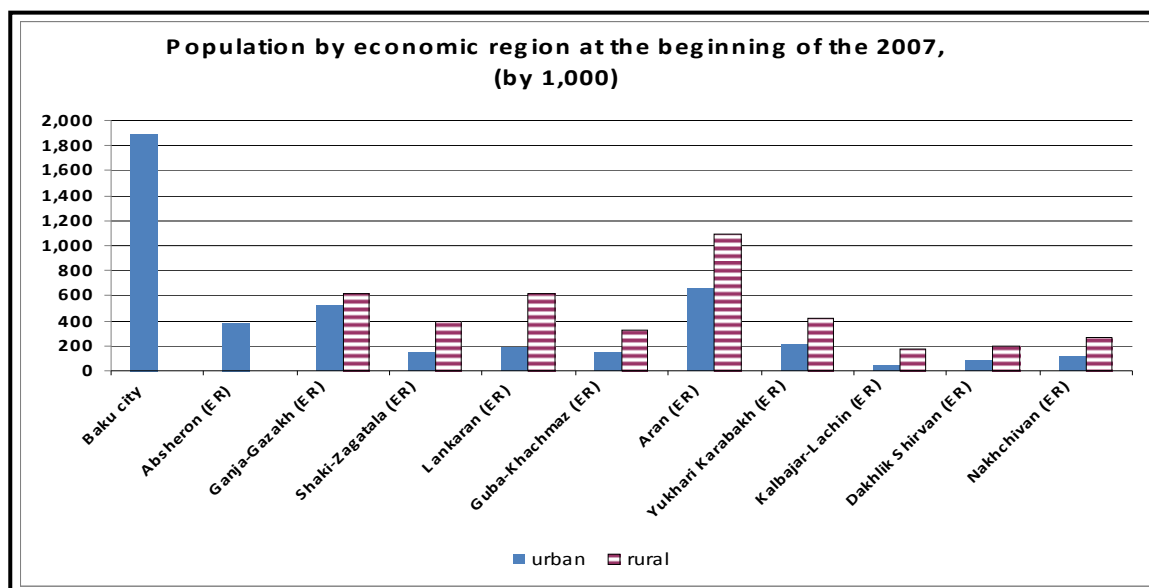
**Figure 7. Urban and rural population growth and trends.**



Source: Azerbaijan State Statistic Committee

Figure 8 below presents the relative mix of rural and urban populations in the major economic regions of Azerbaijan.

**Figure 8. Urban and rural populations by major economic regions.**



Source: Azerbaijan State Statistic Committee

The following section will briefly characterize the existing poultry systems in Azerbaijan today, with detailed value chain assessment presented in the next section of this document.

### 1b3. Poultry sub-sector structure

There are four major types of poultry systems operating in Azerbaijan today, they include:

- Backyard –scavenger system
- Semi-commercial chicken meat production
- Commercial table egg production
- Commercial chicken meat production
  - There are also a few mixed table egg and meat producers

#### *Estimates of the backyard poultry – scavenger system in Azerbaijan.*

The State Statistical Committee of the Republic of Azerbaijan reported in the 1999 population census that the average rural household size of 4.62 persons and urban households average 4.34 persons. There are an estimated 895,043 rural households and 1,013,271 urban households in Azerbaijan, according to 2007 estimates. Also, the average household in Azerbaijan owns 10.7 chickens, primarily as backyard flocks used for household consumption.

Thus, gross estimate of the backyard flock size is therefore at least 9,577,000 birds, based on 10.7 birds per 895,043 rural household. There is certainly some percentage of the one

million urban households that keep backyard chickens as well, but they were not considered in the calculation.

### ***Semi-commercial chicken meat production***

This system of chicken meat production is organized around numerous relatively small hatcheries that act as a lead firm in the value chain. The system can be characterized as follows: Hatcheries import or purchase locally, fertile hatching eggs from mostly broiler stock. The hatcheries then sell day old chicks to private broiler growers that can be grouped into three relative sizes. Small broiler growers with 200 birds per cycle, medium growers with 200 to 1,000 birds per cycle, and large growers with over 1,000 birds per cycle. This broiler grow-out is a seasonal activity that begins in the spring time and runs for six to eight months with 3 to 4 growing cycles possible. Birds are marketed by growers or sold to traders, and are sold on a live weight basis in regional green markets. Feed is produced by the growers and is of relatively poor quality. Mortality rates are also very high. Yet, these growers appear to be generating sufficient incomes from sales, for the grow-out practice to continue if not expand.

### ***Commercial table egg production***

The commercial table egg production system can be characterized as large in scope, vertically integrated, with controlling domestic market share, and very vulnerability to avian influenza and feed grain shocks.

Current national production of table eggs is estimated by the consultant to be about 811 million table eggs. The State Statistical Committee has reported 2007 egg production to be just over 871 million eggs. There are about 4 large table egg producers with about 80% of national production of over 650 million eggs per year; 8 medium sized producers with about 16% of the national production of over 130,000 million eggs per year, and 6 small producers with 4% of national production of over 31 million eggs per year. It should be noted that this level of production probably represent 60 or 70% of capacity, in that most table egg producers, especially the medium and small firms, are not operating at full capacity.

Each company owns and operates its own feed mill, feed ingredient procurement (mostly imports), hatchery, pullet rearing facilities, caged layer facilities, egg packaging, and distribution. Eggs are distributed by company employees in cases of 180 ( six flats of 30 eggs) to both semi-wholesale and retail shops. They produce both white and brown shelled eggs with no price differential between the two. Day old chicks are mostly imported and reared in company facilities under controlled lighting and automatic feeding systems. Manure is dumped in land fill and not seen as a marketable resource for small land owners. Eggs are supposedly sorted into big, medium, and small; but no evidence of this was found. Semi-wholesale and retail market survey did not identify and price for size differentiation. Egg production was reported to be about 300 to 320 eggs per hen per year.

### ***Commercial chicken meat production***

The commercial chicken meat production system can be characterized as large in scope, vertically integrated, serving between 45 and 55% of the domestic market. Most chicken

meat is sold as whole frozen birds in a poly bag; however some companies are selling tray packs of whole birds (1, 2 or 3 per tray), thighs, drumsticks, wings, liver, heart, and deboned white meat. They also sell bulk cartons of wings, thighs, necks, from broilers and deboned white meat from spent breeder birds. They own and operate a feed mill, hatchery, grow-out buildings, processing, and distribution enterprises. Only one of the six chicken meat producers has parent stock and produced hatching eggs for their own use and some local sale.

***Why are there no or very few semi-commercial table egg producers?***

The consultant did not find any evidence of semi-commercial table egg production in Azerbaijan. In many countries farms with 500 to 5,000 layers would constitute important income generation for a household or as part of a larger farming system. The possible reasons that this system does not exist in Azerbaijan include: 1) competition with the low-cost, high volume, commercial egg producers is great, 2) seasonal production of eggs from backyard flocks limits local sales opportunities, 3) the need for working capital (feed) for 20 weeks during rearing, and 50 to 60 weeks during the laying period is difficult to obtain, and 4) disease related risks, over a relatively long period of time (70 to 80 weeks), are substantial for farmers with limited access to qualified veterinary medicines and services.

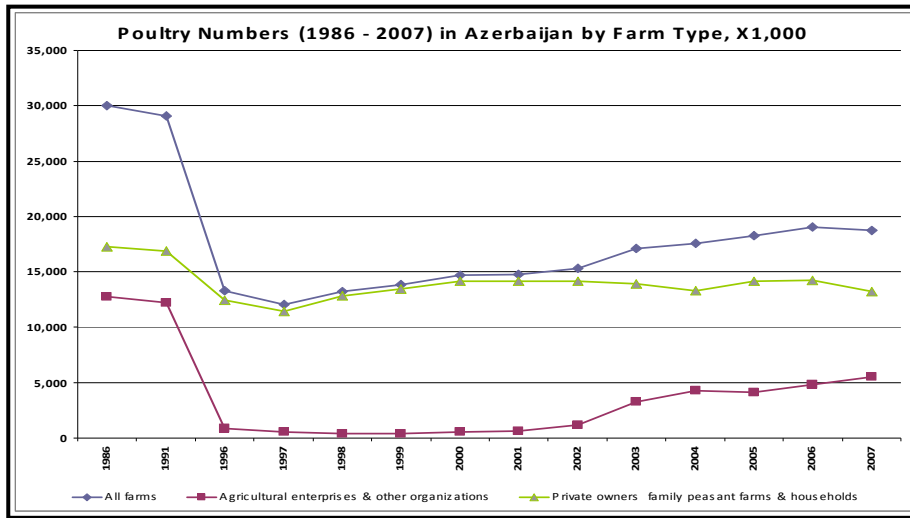
***Poultry value chain participants include:***

- Importers of hatching eggs (broiler)
- Importers of day-old-chicks (layers)
- Parent breeders
- Hatcheries
- Importers feed grain and oilseed meal
- Importers of chicken meat products
- Feed mills and grain storage
- Transporters of imported feed ingredients to feed mills
- Suppliers of various imported inputs (medicines, vaccines, equipment)
- Grow-out farms (broilers)
- State and private veterinarians
- Formal and informal processors (slaughtering facilities)
- Government meat safety inspectors
- Formal integrated processors of chicken meat
- Formal and informal wholesale vendors of live and slaughtered birds
- Formal and informal retail vendors of live and slaughtered birds

***Poultry population trends in Azerbaijan.***

The figure 9 below illustrates how, between 1991 and 1996, the numbers of poultry in Azerbaijan plummeted with the collapse of the Soviet Union. Between 1996 and 2007 the number of poultry in the private sector (mostly backyard flocks and some early privatized commercial firms) held relatively constant. Whereas, the growth of the commercial poultry industry started to take off in 2002 with continued growth through 2007.

**Figure 9. Historical numbers of poultry.**



Source: Azerbaijan State Statistic Committee

Figure 10 below illustrates the changes over time of chicken meat production and table eggs in Azerbaijan as reported by the State Statistical Committee.

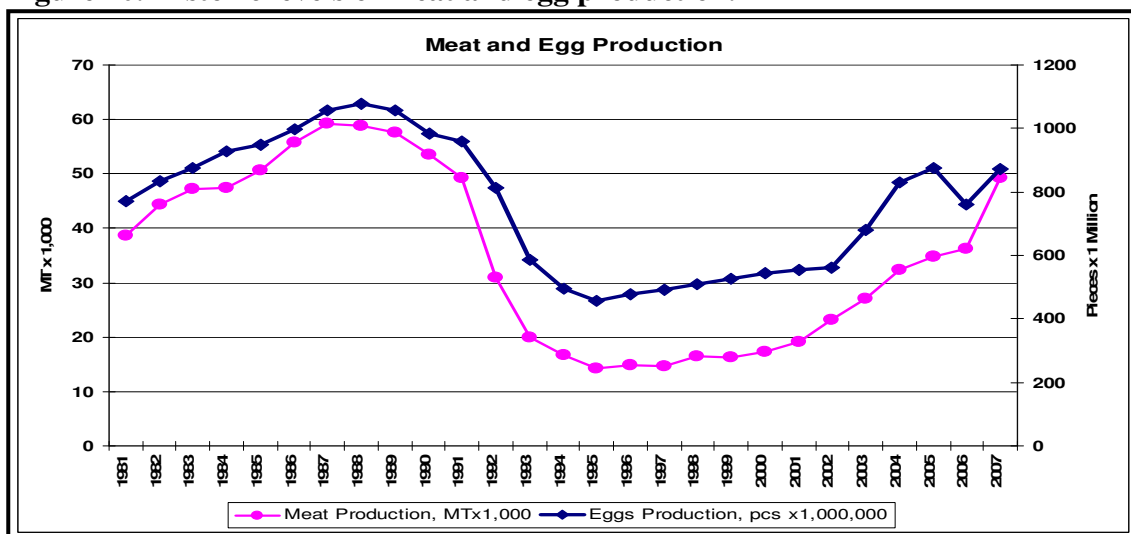
**Table egg production trends in Azerbaijan.**

The National production of eggs peaked at 1.076 billion eggs in 1988, and then production plummeted to 456 million eggs in 1995, rebounding to 875 million eggs in 2005 and achieving 871 million eggs in 2007. There was a significant drop in egg production in 2006 to 761 million eggs due to the reported cases of avian influenza.

**Chicken meat production trends in Azerbaijan.**

Similarly, the National production of chicken meat peaked in 1987 at 59.2 thousand MT; and then dropped to 14.3 thousand MT in 1995. Production continued to climb and reached 34.7 thousand MT in 2005 and 49.2 thousand MT in 2007.

**Figure 10. Historic levels of meat and egg production.**

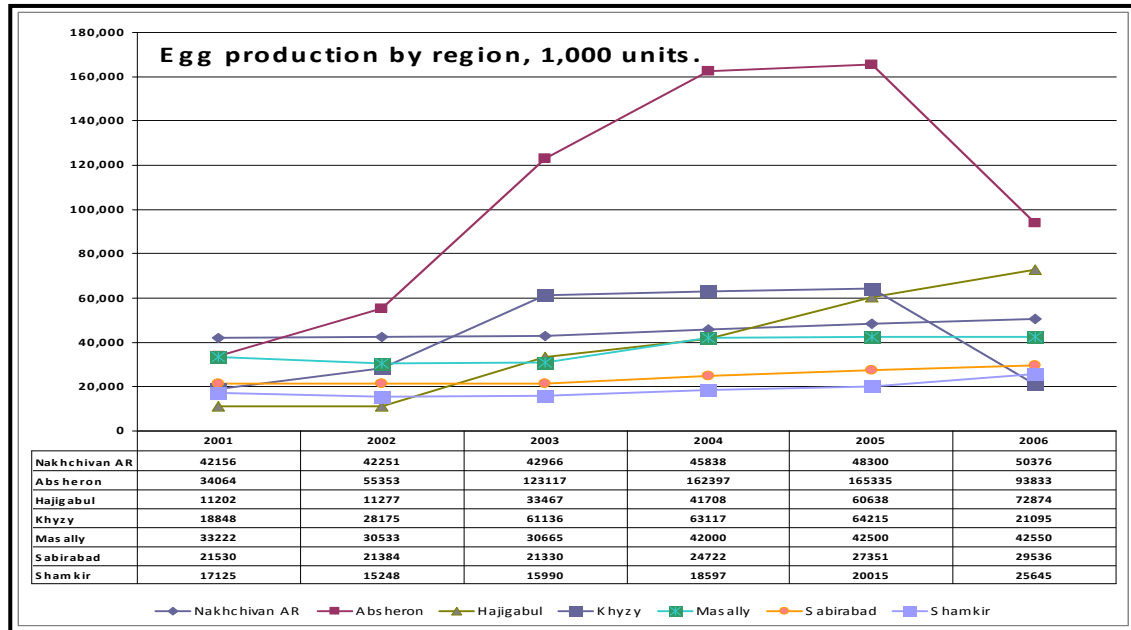


Source: Azerbaijan State Statistic Committee

**Table egg production trends in Azerbaijan.**

Figure 11 below illustrates the geographic distribution of poultry egg production by major economic region of Azerbaijan. For example, one can see how one large commercial table egg operation can plummet almost in half as the case of Absheron and Khyzy. One can also see the continued growth in a second region such as Hajigabul.

**Figure 11. Table egg production by major economic region.**



Source: Azerbaijan State Statistic Committee

## Section 2. Poultry Sub-sector Assessment Findings

### 2a. Market Analysis – poultry products

#### 2a1. Imports

##### *Table eggs – few if any imports.*

There are no, or very few, table eggs imported to Azerbaijan today, and industry leaders claim that domestic production satisfies demand.

##### *Chicken meat – 40 to 50% of market?*

The largest imports are from: USA, Brazil, Turkey, France, Germany, Poland, and transshipments from UAE.

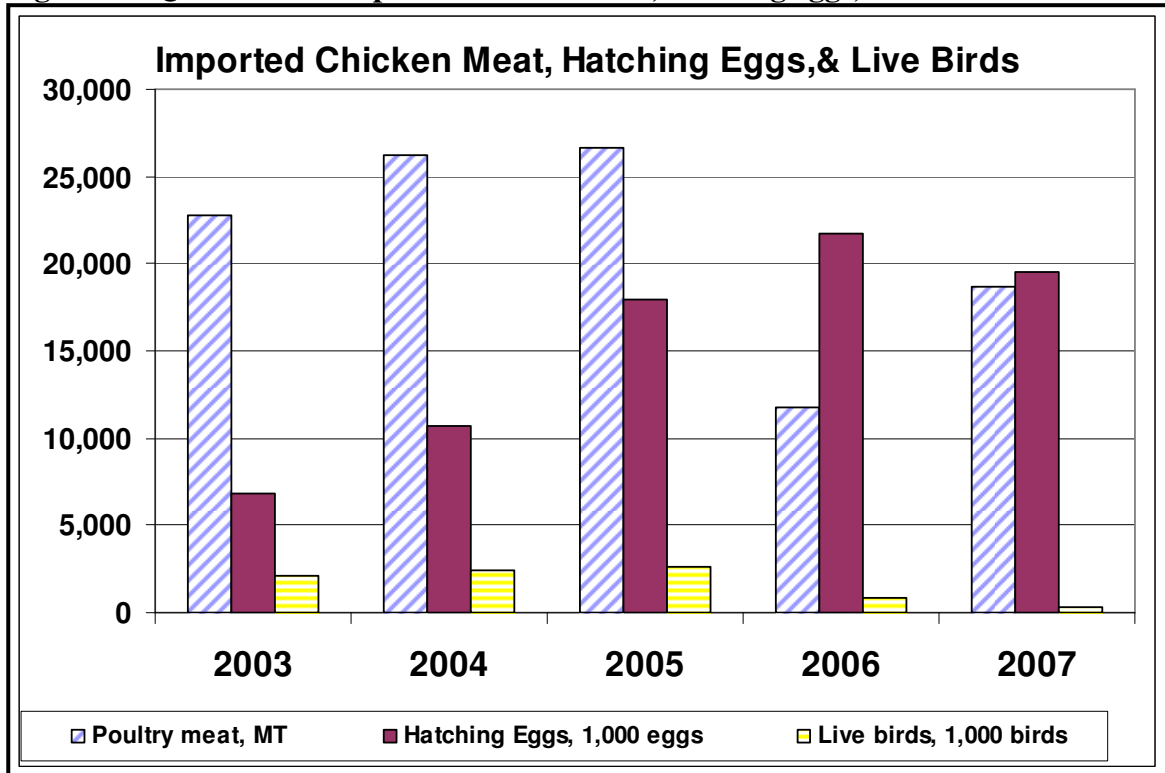
- Whole frozen birds (Brazil, USA, France).
- Frozen chicken parts - deboned white meat- (Brazil, Turkey, France)
- Frozen leg quarters, thighs, and sausage, drumsticks from USA.
- Mechanically deboned chicken meat from USA

Information on imports presented in Figure 12 below provides a view of chicken meat, hatching eggs, and live bird volumes and trends. These numbers indicate three important trends.

- First, the total quantity of imported chicken meat has decreased in the last two years. Furthermore, total imports of chicken meat did not exceed 26,000 MT during this period of time. This figure is almost half as much as reported by poultry industry leaders.
- Secondly, the demand for imported hatching eggs has increased consistently between 2003 and 2006 and slightly lower in 2007. The 2006 level of 21.72 million hatching eggs is substantial and indicates the growing demand for domestic poultry products. These hatching eggs would be for both broiler and table egg production.
- Thirdly, the number of live birds imported (day-old-chicks) has been decreasing over recent years with peak imports in 2005 of nearly 2.6 million chicks. It is assumed that most of these chicks are for the semi-commercial chicken meat producers that import over 90% from Iran and Turkey. There are also imports of live bird parent stock over the last two years from Holland and Germany.



**Figure 12. Quantities of imported chicken meat, hatching eggs, and live birds.**

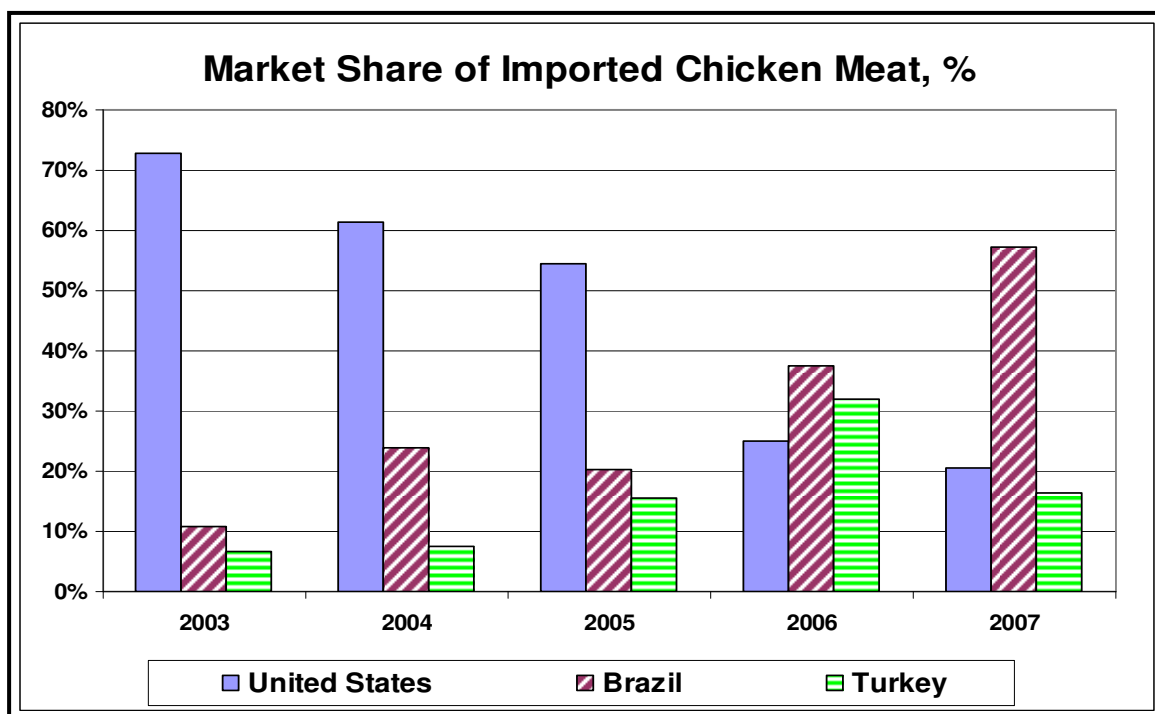


Source: Mr. Mirsahab Mirzayev, private survey.

Figure 13 below provides a recent historical view of imports as they relate to the source, quantities, and types of products imported. The following important observations can be made from this information.

- First, clearly the volume of poultry meat from the US has decreased (as a percent of total imports) with increases from Brazil and Turkey.
- Secondly, the largest volume of poultry meat originating from the US is bulk packed leg quarters and thighs. Whereas, the major imports from Brazil are whole frozen birds and some deboned white meat. Most imports from Turkey also include whole frozen birds and deboned white meat, and some added value products. This seems to indicate that the consumer, with its increasing levels of income, prefers the whole frozen bird to the bulk packed and low cost thighs. Perhaps the low cost thighs are viewed locally as a poor mans meat and thus a willingness to pay a premium for whole frozen birds.

*Figure 13 Market share by source of product as a percent of total imports.*



Source: Mr. Mirsahab Mirzayev, private survey.

### *Hatching eggs – mostly imported.*

Broiler breeder parent stock and broiler hatching eggs (Turkey, Iran, Holland)  
Table egg (layers) parent stock (Turkey, Iran, Holland)

### *Day old chicks – mostly for replacement layer flocks and broilers.*

**Broiler or layer parent stock** (Holland, Turkey, and Russia). There are one or two broiler breeder parent flocks and only one layer parent stock producers in Azerbaijan. These parent stock farms usually buy hatching eggs and sometimes import day old parent stock chicks for their own commercial use.

**Day old layer stock** (Turkey, Iran). Most of the commercial table egg producers import day old chicks for replacement stock. This is true because there are no parent stock farms in Azerbaijan producing quality day old chicks in large volumes for sale. This requires the majority of table egg producers that have large flocks of 50,000 to 100,000 or more liquidated at a time and thus need to import large quantities of replacement stock.

## **2a2. Exports**

Historically Azerbaijan poultry producers exported limited amounts of table eggs to regional countries, including Kazakhstan, Russia, Georgia, and Iraq. There are negligible if any exports of table eggs to these countries today.

### 2a3. Industry trends

There appears to be consolidation within the industry with the larger companies forcing out other large sized and some medium sized companies. The small and medium sized companies producing primarily broilers for regional live bird markets seem to be stable.

### 2a4. Price trends

#### *Major meat products and table eggs.*

The figure 14 below illustrates the evolution of consumer prices over the last nearly three years. One can see the following: 1) Table eggs, imported chicken leg thighs, and boiled sausage are consistently the lowest cost meat items in the market, 2) whole frozen chickens are within the consumer price range associated with these low cost meat items, 3) Lamb, beef, pork and chicken meat products all experienced a rapid rate of price increases starting about February 2008, expanding through May 2008 and somewhat stabilizing during the summer months of 2008. These increases are associated directly with increases in world cereal and energy prices that crippled many industries during this period of time.

**Figure 14. Average monthly consumer prices of meat and eggs.**

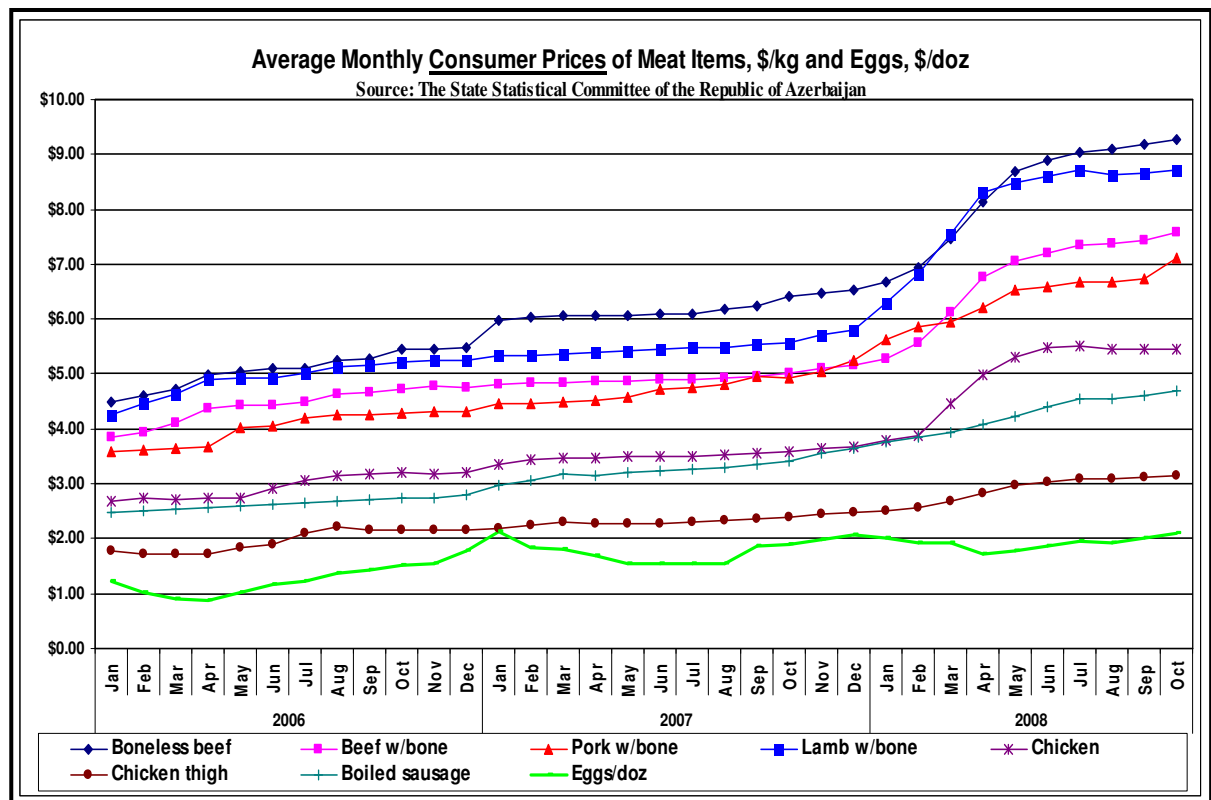
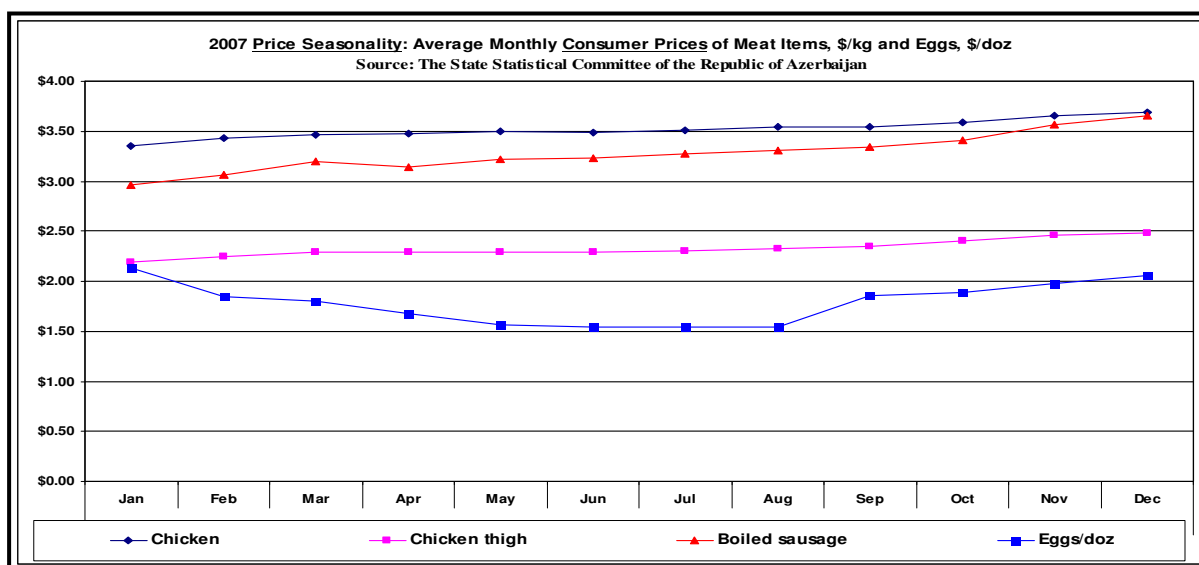


Figure 15 below illustrates the seasonality changes in consumer prices for major meat and table egg prices during 2007. One can see seasonal effects of table egg prices, with prices significantly lower in spring and summer months, then increasing consistently into the fall and winter months. This seasonality effect is due to backyard flocks producing considerable eggs during this period, and lower demand for eggs by urban consumers as

they orient diets towards fresh seasonal products. There is a less of a seasonal effect on major meat item prices.

**Figure 15. Consumer price seasonality during 2007.**



Source: Azerbaijan State Statistic Committee

**Growth of supermarkets in Azerbaijan.** Baku and other major urban centers have experienced relatively rapid growth of the number of supermarkets in recent years. There are currently an estimated 15 supermarkets serving most urban centers. They include such companies as Ramstore, CitiMart, Ekvator, Elita, Grand Stores, and New World Center. Other growing outlets of poultry products include large numbers of mini-markets, green markets, and the traditional small grocery store.

These expanding market channels will continue in importance and present a real and growing opportunity for Azeri poultry producers to exploit. This will require, in part, product diversification and addressing food safety concerns.

#### ***Estimated consumption of chicken meat in Azerbaijan.***

Based on the State Statistics, a gross estimate of chicken meat consumption in 2007 is about 8,000 MT per month or 96,000 MT per year. The estimated level of chicken meat imports is about 4,500 MT per month (54,000 MT/year) and domestic commercial production about 3,500 MT/per month (42,000 MT/year). (Note these import numbers do not match with the import numbers provided by the independent consultant and presented later in this document). There is also the semi-commercial production of chicken sold live or fresh at an estimated 5,000 MT per year, plus the spent hens and breeders from the commercial companies that could total an estimated 2,000 MT/year. Total consumption of chicken meat in 2007 is therefore estimated to be 103,000 MT per year (~48% domestic and 52% imports). This equates to about 11.9 Kgs of chicken meat consumed per capita.

## 2b. Table egg value chain

### 2b1. Overview

There are approximately 18 table egg producers in Azerbaijan. At least three of these have closed in recent months or will close this spring after their latest production cycle.

Company/Director	Region	Production
İsmayıl	Ceyranbatan	9,855,000
	Nefçala	1,971,000
	Biləsuvar	13,140,000
	Lənkəran	6,570,000
	Quba	9,198,000
Əlvan	Sabirabad	13,140,000
	Pirsaat	32,850,000
	Buzovna	13,140,000
Vasif	Ramana	6,570,000
Maqsud	Sumqayıt	6,570,000
Əsgər	Sumqayıt	6,570,000
İlqar	Xırdalan	19,710,000
Adışirin	Hacıqabul	98,550,000
Məhərrəm	Hövsan	65,700,000
Tofiq Tağıyev	Gorədil	229,950,000
Mahir	Giləzi	262,800,000
Yaşar	Gəncə	3,285,000
Nazim Məmmədov	Şəmkir	19,710,000
<b>Total</b>		<b>819,279,000</b>

Source: Tom Deeb and Emin Dostiyari, Meat Industry Summary Report, 2008

The table egg producing companies listed above can be grouped into small, medium, and large categories based on levels of production. The four largest companies produce about 657 million eggs per year or 80% of total production. There are eight medium sized companies that produce about 131 million eggs a year or 16% of total national production. Lastly, there are about six small table egg companies that produce about 31.5 million eggs per year or about 4% of total production. As mentioned previously, several of these companies have recently closed or will be closing this spring. This implies that the 819 million national table eggs production is over estimated at this time. Moreover, it is known that many of the companies listed above are only operating at partial capacity – estimated between 60 to 70% of total capacity.

### 2b2. Table egg market situation

Most of the table egg producers have distribution capacity with their own paid staff distributors and vehicles. Eggs are distributed primarily direct to retail shops in urban and rural areas. Eggs are also sold to semi-wholesalers (sell wholesale cases and retail flats) and in green markets. A case of eggs holds 6 flats of 30 eggs for a total of 180 eggs per case) Retailers sell eggs in quantities of ten in plastic bags or flats of 30. Some table egg

companies report that they have provided the Azeri military with table eggs under contract that was won through a tendering process. It is not known to what extent table eggs are sold to food service industry, such as bakeries, restaurants, etc.

There are both white and brown shelled eggs in the market with a proportion of about 50% white and 50% brown. There does not seem to be a consumer preference for either white or brown shelled eggs. The wholesale and retail prices for both white and brown shelled eggs are the same.

<b>Table eggs</b>	<b>Factory price</b>	<b>Wholesale price</b>	<b>Wholesale Margin, %</b>	<b>Retail price</b>	<b>Retail Margin, %</b>
White shelled, Manat/piece	0.11 Manat	0.13 Manat	18.2%	0.174 Manat	33.8%
White shelled, \$/doz	\$1.636/doz	\$1.933/doz	18.2%	\$2.587/doz	33.8%
Brown shelled, Manat/piece	0.11 Manat	0.13 Manat	18.2%	0.174 Manat	33.8%
Brown shelled, \$/doz	\$1.63/doz	\$1.933/doz	18.2%	\$2.587/doz	33.8%

### ***Green market prices for village of backyard flock table eggs.***

A survey of several green markets in Baku found that “village eggs” produced from backyard flocks are nearly double in price, as high as 0.30 Manat per piece, compared to the commercially produced eggs. These eggs, off-white in color and smaller in size, are collected by village assemblers and brought to urban fresh markets and either sold directly or sold to traders with fulltime presence in the green markets. These village table eggs sold at 0.30 Manat equals an incredible \$4.46 per dozen eggs. This is a traditional practice where these eggs are sold as fresh and no mention of “organic” or other quality difference is promoted. The size of this market is not known and is strongly seasonal in nature.

### **2b3. Table egg value chain mapping**

There is one major type of table egg value chain operating in Azerbaijan today, which is the commercial, vertically integrated, table egg producer. However, there is only one or two of these commercial table egg producers that incorporate a parent stock enterprise into their production system. This is why two value chain maps have been included in this section and the importance of having parent stock enterprise is for the industry.

#### **Table egg value chain components (enterprises):**

##### ***Parent stock enterprise.***

Layer type breeder parents are relatively not that difficult to rear and manage as compared to broiler breeder stock. Yet there is only one layer type parent breeding farm in Azerbaijan today. The benefits of having in country a parent stock farm producing

sufficient hatching eggs for own use and perhaps sales to other companies in Azerbaijan is a competitive advantage.

***Feed mill enterprise.***

Most companies report that they have feed mills with a 10 to 12 MT per hour capacity, significant flat storage and some silo storage. These companies do not pellet feed for the layers or pullets. Some have a small laboratory for testing grains for moisture, contaminants, and sometimes protein content. They also use basic feed formulation programs based on feed formulas used for many years. It is not clear if they conduct least cost feed formulation practices. Most companies can access a rail site within 10 to 20 kilometers of the feed mill.

***Hatchery enterprise.***

Most hatcheries are said to have Russian equipment that are not expensive to buy but low in efficiency. Most table egg companies recognize the advantages of Western built incubators but have difficulty financing such investments. First off is the relative high cost of the purchase price, and then 18% VAT and 15% customs tariffs are applied to the purchase price. Hatchability rates were said to meet acceptable standards.

***Pullet rearing enterprise.***

Pullets are reared to about 20 weeks of age, depending upon the season and ability to control lighting, and then transferred to the laying facilities. Pullet mortality rates and culling practices were not indicated by the Companies, other than to indicate they are within acceptable norms.

***Layer production enterprise.***

Layers are placed in cages, one, three, or four tiers high, for sixty weeks of lay. They do not force molt the layers into a second production cycle; rather they liquidate the birds by selling to traders in the live bird markets. It was also reported that some of the sausage companies buy spent hens for the making of chicken sausage. Large cement buildings generally hold between 10 and 20,000 layers per building. Automatic lighting, water, feeding, and waste removal technology are used, but are considered old technology relative modern standards.

***Sorting and packaging enterprise.***

Table eggs are collected, set on flats of 30 and packed into boxes in each layer building. Table eggs are not washed, and grading was said to be made into small, medium, and large. However, there is no differential in eggs size in the wholesale or retail stores. The consultant believes that table eggs are not graded and packaged directly for sale.

Based on limited market observations, all companies seem to use the same, non-descript boxes without any type of identification or product promotion. There are some companies that are packaging 10 larger table eggs in plastic containers for the larger, more expensive, supermarkets. This indicates that the some companies are looking for ways to

expand sales through new market segments. Even so, the plastic containers do not yet have proper labeling or company identification.

**Distribution.**

All table egg Companies seem to have their own distribution staff and vehicles that distribute table eggs on a daily basis. Table eggs are given to wholesalers and retailers on credit, with terms either payment collected on the next delivery (usually a week) or sometimes payment in 30 days.

**Market channels include:**

**Retail outlets** are the major distribution channel utilized by the table egg companies.

**Wholesale/retail outlets.** There are a number of semi-wholesale shops located in the neighborhood of the green markets that sell poultry meat and egg products somewhat wholesale (not to be confused with large importers) by the case or retail by the kilogram or flat of eggs.

**Food service.** It seems that very few Companies, if any, access the large food service companies in Azerbaijan. It is known that some of these Companies do sell large volumes to the Military and other government agencies. They do distribute directly to some of the small restaurants and bakeries that require large amounts of eggs.

**Live bird market for spent hens.** Spent hens are sold to traders from the live bird markets found in most urban areas. If a company needs to liquidate a large flock in a short period of time they may sell the load to a meat processor or sausage processor.

**Figure 16. Table egg value chain, vertically integrated with parent stock.**

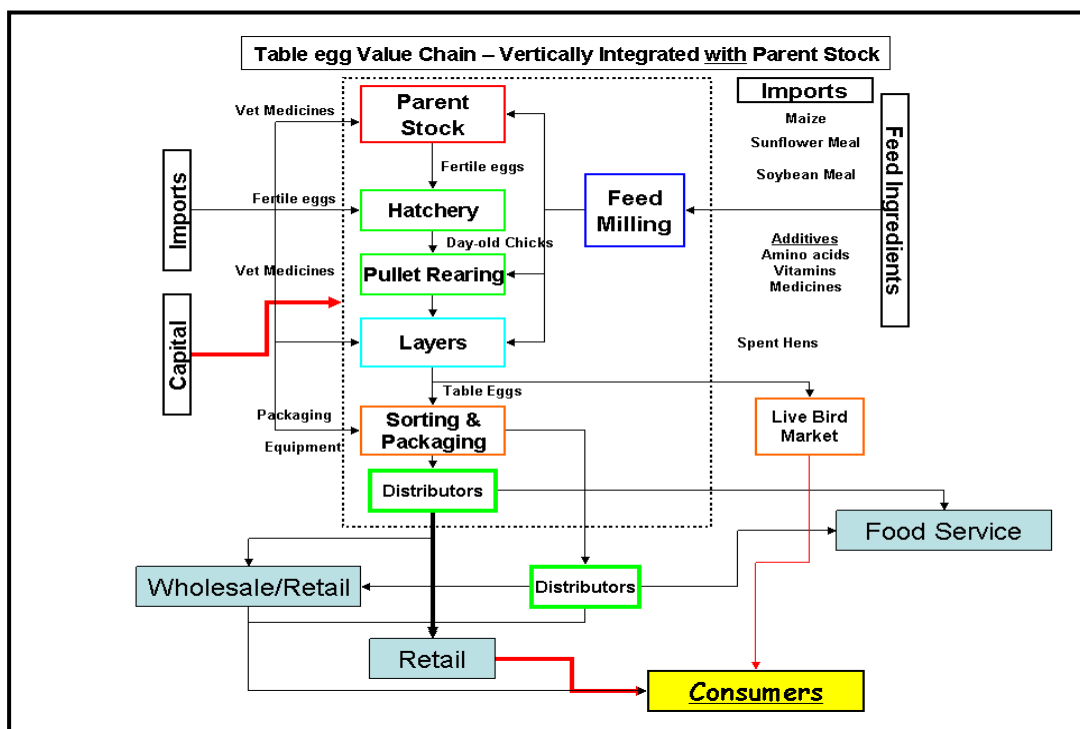
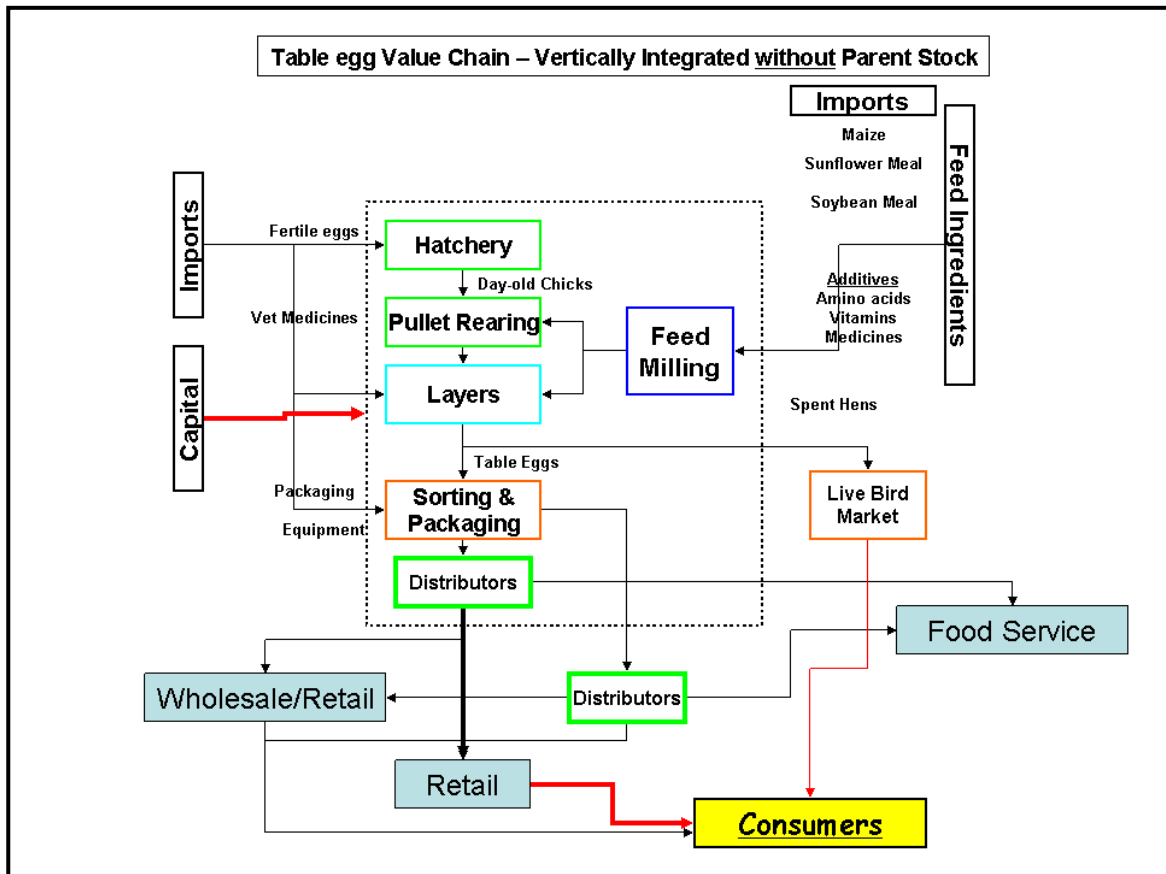




Figure 17. Table egg value chain, vertically integrated without parent stock.



**2b4. Table egg value chain technical analysis**

Table egg production reported by the State Statistics Committee in 2007 was 871 million eggs which is a higher number than the industry reported production of about 820 million table eggs. It is possible that the State Statistic Committee was able to capture production from smaller production units and private homes. If we assume production at 820 million table eggs per year this is equivalent to about 96 eggs per capita. Also, it is interesting to note that consumer surveys have shown that households consume 127.9 eggs per year of which, 71.7 are purchased and 56 are received.

The wholesale value of these eggs, at today’s wholesale price of \$1.933/dozen would equate to about \$132 million. Of course, this is a gross estimate of the total value, in that table egg prices (seasonality) and production fluctuate over the year.

**2b5. Table egg value chain SWOT Analysis**

**Table egg value chain - SWOT Analysis summary table.**

<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Vertically integrated</li> <li>• Growing consumer purchasing power</li> <li>• Access to rail lines for ingredient imports</li> <li>• Growing urban consumer population</li> <li>• Relatively low energy costs</li> <li>• Fulltime veterinarians</li> <li>• Relatively good infrastructure (roads, water, power, rail access)</li> <li>• Unused capacity for expansion</li> </ul>	<p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• Few parent stock operations</li> <li>• Sourcing feed ingredients outside of Azerbaijan</li> <li>• High cost of capital (18-20%)</li> <li>• Old technology in some enterprises</li> <li>• Technical staff need training</li> <li>• Information systems require strengthening</li> <li>• Weak association.</li> <li>• Weak technical know-how.</li> <li>• Weak information systems.</li> <li>• Lack of adequate laboratory testing facility.</li> </ul>
<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• Investment in new technologies to increase productivity (e.g. incubators, added value processing equipment)</li> <li>• Consumer education</li> <li>• Industry promotion to expand demand – fresh and Azeri made</li> <li>• Reduce day-old-chick costs by investing in parent stock</li> <li>• Equity financing available</li> <li>• Possibility to lower costs through improved management systems</li> <li>• Export potential to neighboring CIS countries</li> </ul>	<p><b>Threats:</b></p> <ul style="list-style-type: none"> <li>• Avian Influenza scare lowers demand</li> <li>• International feed ingredient price fluctuations</li> <li>• International feed ingredient availability</li> <li>• Informal tax system at borders applied to imports</li> </ul>

**2b6. Table egg value chain development strategy****Strategy issues:**

- Parent breeder stock development.
- Technological efficiency and increased productivity
- Bio-Security.
- Technical and managerial training.
- Management Information System.
- Laboratory Testing Facility.
- Financing
- Efficient feed ingredient procurement

<b><i>Increasing <u>Table Egg Sales</u> by:</i></b>	
<b>1) Increase market share by:</b>	
<b>1a. Decreasing price:</b>	<b><u>Focus on productivity:</u></b> <ul style="list-style-type: none"> <li>• Lower feed costs</li> <li>• Higher hatchability</li> <li>• Lower day-old-chick costs</li> <li>• Lower pullet &amp; layer mortality</li> <li>• Improve feed efficiency through improved pullet &amp; layer management</li> <li>• Lower distribution costs</li> </ul>
<b>1b. Increasing quality:</b>	<b><u>Focus on improved product quality:</u></b> <ul style="list-style-type: none"> <li>• Improved food safety</li> <li>• Improved packaging</li> <li>• Restructured distribution</li> </ul>
<b>2) Increasing market size by:</b>	
<b>2a. Increasing number of customers</b>	<b><u>Focus on product differentiation:</u></b> <ul style="list-style-type: none"> <li>• Processed egg products</li> <li>• Egg grading &amp; price differentiation</li> <li>• Discount pricing</li> <li>• Accessing food service accounts</li> </ul>
<b>2b. Increasing consumption of customers</b>	<b><u>Focus on increasing public awareness:</u></b> <ul style="list-style-type: none"> <li>• Industry promotion</li> <li>• Food safety promotion</li> <li>• Conducting company promotion</li> </ul>

***Illustrative examples of management techniques used to lower feed costs, include:***

- Manage layer house temperature
- Reduce pullet body weight
- Increase egg production
- Use controlled feeding during lay
- Use phase feeding program
- Follow rigid culling program.
- Prevent feed wastage
- Reduce size of eggs produced

## 2c. Chicken meat value chain

### 2c1. Overview

There are an estimated 10 commercial chicken meat producers in Azerbaijan and it is known that at least two of them have closed in recent months. These ten companies were producing about 40,500 MT of chicken meat per year. At least three of the companies also produce table eggs and it is not known if they are counting their spent hen sales as chicken meat sales. If so, the estimates will be lower than presented below.

Company/Director	Location	Production
Davachi Broiler	Davachi	10,000 MT/year
Siyazan Broiler	Siyazan	12,000 MT/year
Maradakan Broiler(closed)	Mardakan	5,000 MT/year
Imishli Broiler	Imishli	4,000 MT/year
Qaraqashli Broiler	Neftchala	2,000 MT/year
Hajigabul Broiler	Hajigabul	2,500 MT/year
Hovsan Broiler (closed)	Narimanov	1,500 MT/year
Gilazi Brolier	Baku	1,500 MT/year
ATAgushulug	Shamkir	1,000 MT/year
Shurabad Brolier	Shurabad	1,000 MT/year
<b>Total</b>		<b>40,500 MT/year</b>

Source: Tom Deeb and Emin Dostiyari, Meat Industry Summary Report, 2008

### 2c2. Chicken meat market situation

Chicken Meat Products	Factory price \$/Kgs	Wholesale price \$/Kgs	Wholesale Margin, %	Retail price \$/Kgs	Retail Margin, %
Whole frozen, local		\$4.46		\$4.71	5.6%
Whole frozen, imported	\$3.68	\$4.38	19%	\$4.96	13.2%
Deboned white meat, local		\$7.19		\$8.18	13.8%
Deboned white meat, imported		\$5.51		\$7.50	36%
Chicken thighs, local		\$4.34			
Chicken thighs, imported	\$1.90	\$3.10	63%	\$3.35	8.1%

#### *Green market prices for village of backyard live birds.*

A survey of several green markets in Baku found that village produced “live birds” from backyard flocks sell for about 9.00 to 10.00 Manat for a 1.0 to 1.1 kilogram bird. That equates to about \$11.15 to \$12.39 per kilogram. This is more than double the retail price of whole frozen birds of equal weight.

The green markets also sell fresh chicken meat that are both slaughtered and de-feathered on the spot or the morning of sales. These “fresh birds” sell for about 4.00 to 6.00 Manat per bird or \$4.96 to \$7.44 per bird. These birds weigh between 1.1 and 1.5 kilograms. The larger birds truly from backyard flocks, whereas the smaller birds may in fact be broilers produced by small growers and sold as backyard type birds. Since they have been slaughtered and de-feathered the consumer is not sure of the real source of the bird. Market sellers of live birds will slaughter and de-feather birds on the spot for 1.00 Manat (\$1.24) per bird.

### **2c3. Chicken meat value chain mapping**

There is one major type of chicken meat value chain operating in Azerbaijan today, which is the commercial, vertically integrated, chicken meat producer. However, there is only one of these commercial chicken meat producers that incorporate a parent stock enterprise into its production system. This is why two value chain maps have been included in this section and the importance of having parent stock enterprise for the chicken meat industry is discussed.

#### **Chicken meat value chain components (enterprises):**

*Parent stock enterprise – there is a real need to expand the number of parent stock farms.*

There is only one commercial chicken meat producer with broiler breeder parent stock. They are using the imported Cobb 700 genetic strain from Holland and Iran, which is considered in the industry to be having good white meat yield, competitive on feed conversion, and relatively easy to manage. Most other companies are importing hatching eggs (Ross 308 genetic strain) that are also considered a high white meat yielding bird. It should be noted that broiler breeders are the most challenging birds to manage due to their genetic capacity to grow, that if not managed correctly will result in low hatching egg production and low rates of fertility.

*Feed mill enterprise – the greatest cost savings potential are in the feed enterprise.*

There are no large-scale private feed mills in Azerbaijan today. All of the commercial chicken meat producers have their own feed mills, typically with a capacity of 10 to 12 MT per hour. There are small-scale feed mills serving the backyard flock owners and semi-commercial seasonal broiler production. The quality of feed from these small feed mills is poor, relatively expensive, and based on local ingredients that may not maximize growth. Poorly made feed can also be a carrier of important toxins, molds, and diseases.

Since feed contributes at least 70% of the total cost of producing a kilogram of chicken meat, it is extremely important for a company to have competent ingredient purchasers, access to low cost trade finance, controlled and large storage facilities, low cost transportation, precision feed formulation, reliable feed ingredient testing, and proper feed allocation for the appropriate age of bird.

***Hatchery enterprise – hatchability increases and chick care could be important.***

The hatcheries are owned and operated by the commercial chicken meat production companies and reportedly use Soviet era incubators that have questionable efficiency. Thus hatchability can be an issue where increase in productivity through improved hatchery management can be made. Because most of the Companies import fertile hatching eggs they are at the mercy of the provider when it comes to fertility, egg size, age of hatching egg, and contamination on the eggs with different diseases.

The hatchery is the starting point for controlling live bird health. It is assumed that day-old-chicks are vaccinated at the hatchery before being placed for grow-out.

***Broiler grow-out enterprise.***

The commercial chicken meat value chain in Azerbaijan includes ownership and management control over broiler grow-out. This differs from the US and other countries where broilers are grown under a contract for the integrator (Company). In this arrangement the integrator places day-old-chicks and feed on private farms; as well as periodic management oversight of the broilers. The farmers are paid based on the live weight sent to the Companies slaughter facility, and a premium for feed efficiency. The growing of broilers is a part time enterprise for most farmers and offers adequate compensation for essentially management services.

It is important to note that the value of the physical assets (buildings, heaters, feeders, water systems) of private broiler growers under contract is equal to or greater than the physical assets owned by the integrator. This is a risk sharing arrangement and enables growth by both the private growers and the integrator. It will be many years before such a contract arrangement can become viable in Azerbaijan for a number of technical, economic, and political reasons. This subject is beyond the scope of this assessment.

A few key benchmarks to consider in broiler grow-out enterprise are mortality, feed efficiency, and flock uniformity. Azeri Companies state that they produce at acceptable standards, but offer no proof of such claims.

***Meat Processing and packaging enterprise.***

All of the commercial chicken meat Companies have their own slaughter and packaging enterprises. Many of these facilities have been upgraded in recent years, and a few having been certified HACCP compliant. It seems that in recent years the priority for investment has been in the ability to increase slaughter capacity, product quality, and added-value processing (cut-up). It is not known the level of productivity in the meat processing enterprise nor the cost structure.

***Distribution.***

Most of the commercial chicken meat companies in Azerbaijan have paid staff distribute products in Company owned vehicles. There is one company that pays independent distributors a scaled amount based on volume sold and distance from the slaughter house. It seems that most distribution is direct to a multitude of small retailers and semi-

wholesalers in most major urban markets, with Baku being the major and most lucrative market.

Chicken meat is given to wholesalers and retailers on credit, with terms either payment collected on the next delivery (usually a week) or sometimes payment in 30 days.

**Market channels include:**

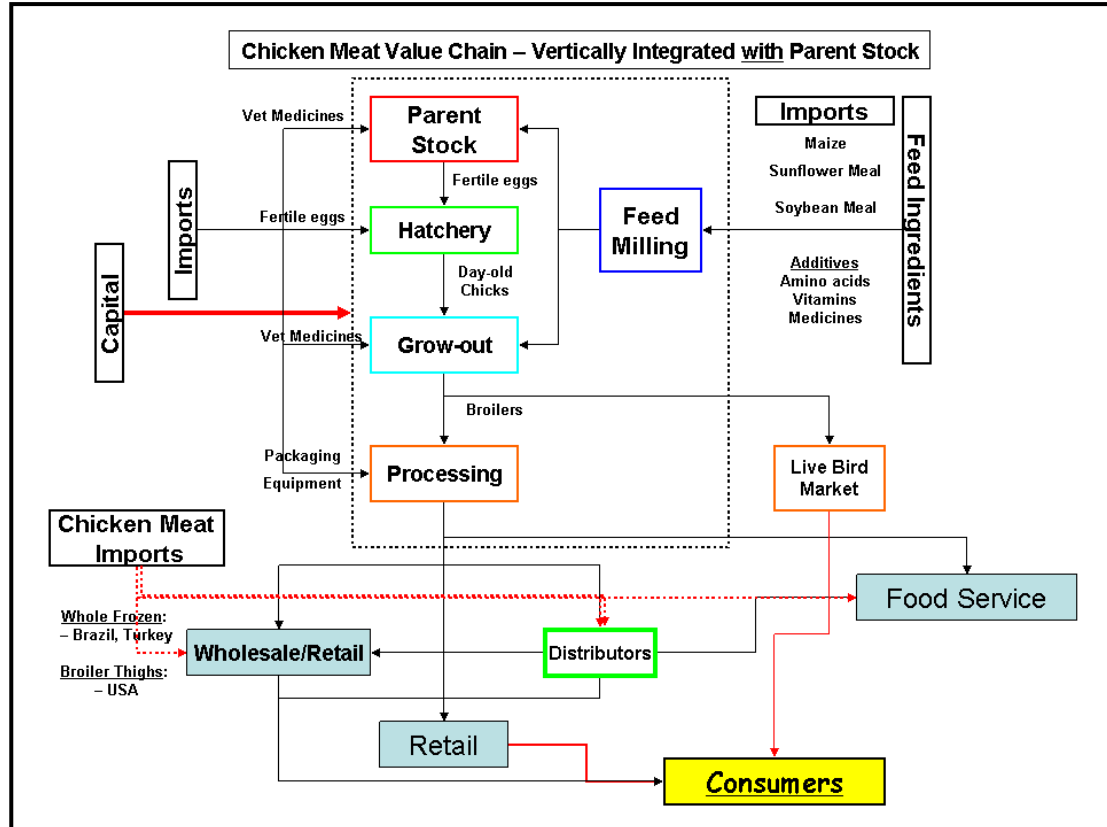
*Retail outlets* are the major distribution channel utilized by the chicken meat companies.

*Wholesale/retail outlets.* There are a number of semi-wholesale shops located in the neighborhood of the green markets that sell domestic and imported poultry meat somewhat wholesale (not to be confused with large importers) by the case or retail by the kilogram.

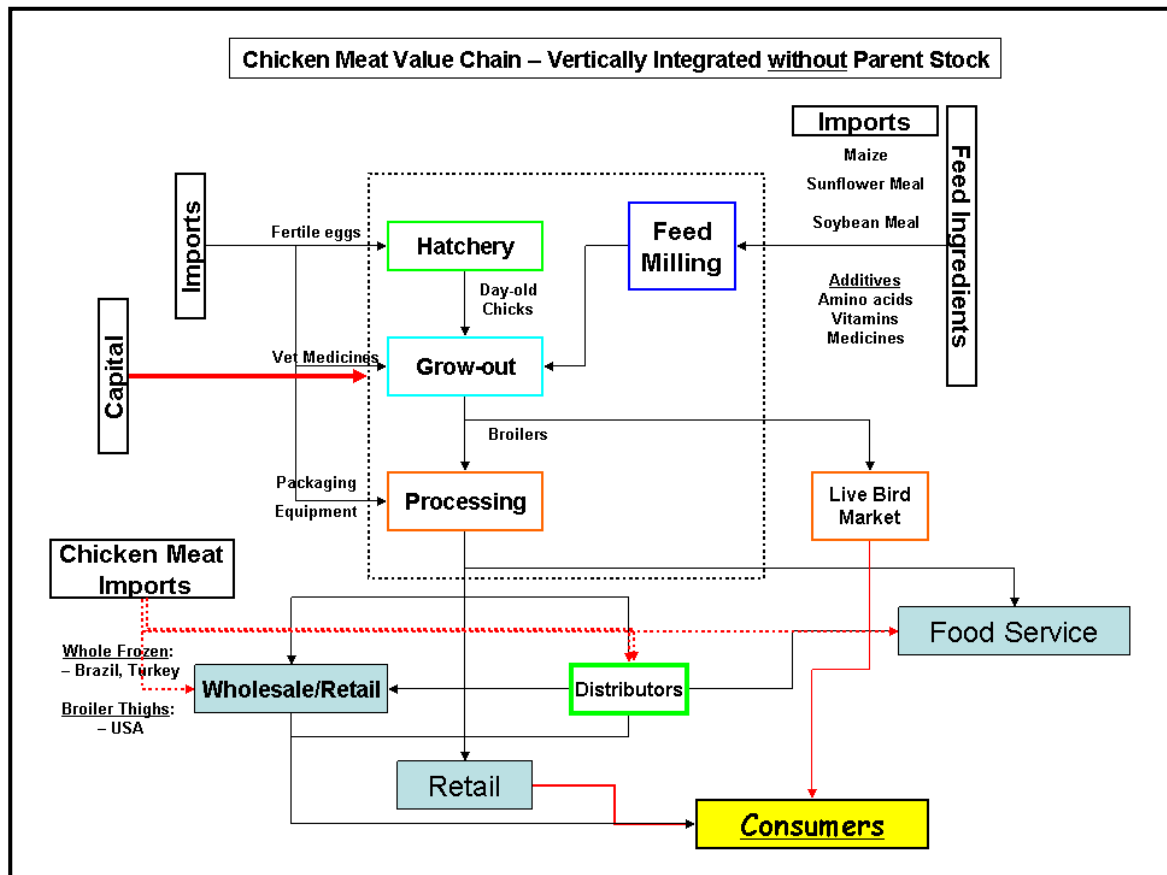
*Food service.* It seems that very few Companies, if any, access the large food service companies in Azerbaijan. It is known that some of these Companies do sell large volumes to the Military and other government agencies. They do distribute directly to some of the small restaurants.

*Live bird market for spent breeder stock.* Spent breeders are sold to traders from the live bird markets found in most urban areas. If a company needs to liquidate a large flock in a short period of time they may sell the load to a meat processor or sausage processor.

**Figure 18. Chicken meat value chain, vertically integrated with parent stock.**



**Figure 19. Chicken meat value chain, vertically integrated without parent stock.**



**Chicken meat/live bird value chain – Figure 20.**

This value chain has developed around local hatcheries that serve as lead firms for the value chain. A characterization of this chain was presented earlier in this document.

Hatching egg sources. Fertile hatching eggs are purchased by hatchery owners either from: 1) imports from Turkey and Iran – about 40% of total, 2) domestic commercial chicken meat producers with excess hatching eggs or part of a joint purchase when importing - about 25% of total, and 3) local villagers that produce fertile eggs from small scale production – about 35% of total. The genetic quality, fertility, incidence of disease, and value of locally produced fertile eggs makes this a risky option.

Hatcheries. Hatcheries sell day old chicks to private broiler growers. These hatcheries are a seasonal business (March through September) that serve traditional clients. There are estimated 7 to 10 hatcheries in each of the major economic regions of Azerbaijan totaling 30 to 40 in number. A few of these hatchery operators grow-out broilers on their own farms as well. They generally use antiquated Russian incubators and hatchers with 40 to 45,000 egg capacity per set. They can produce about 150,000 day old chicks per season. This implies national production of day old chicks from this value chain between 4.5 and 6.0 million per season.

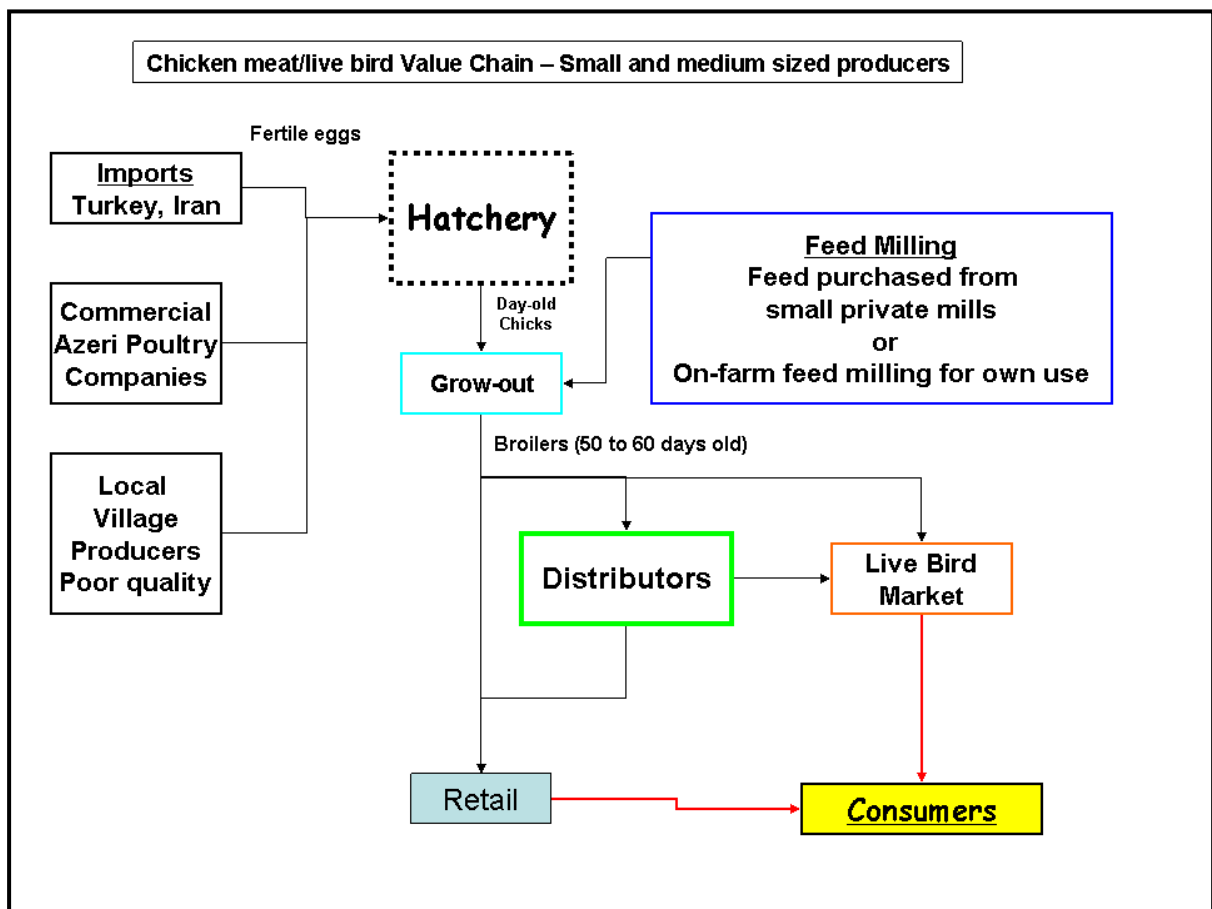


**Broiler growers.** Small broiler growers with 200 birds per cycle, medium growers with 200 to 1,000 birds per cycle, and large growers with over 1,000 birds per cycle. This broiler grow-out is a seasonal activity that begins in the spring time and runs for six to eight months with 3 to 4 growing cycles possible. If we assume a high mortality rate of 15% this means that there are about 3.8 and 5.1 million live birds sold in regional markets each year.

**Live bird distributors.** Birds are marketed by growers or sold to traders, and are sold on a live weight basis in regional green markets. Traders play an important role in this production system where there about 20 traders in each of the major economic regions. These traders can be grouped into large, medium, and small – depending on the volume of birds sold per month. Approximately 55% of the traders are small and sell about 250 birds per month, 30% are medium sized and sell about 500 birds per month, and 15% are large and sell about 1,000 birds a month. They sell daily in the live bird markets and travel to neighboring regions to buy live birds from growers to sell in the larger live bird markets where they are based.

**Feed milling.** Feed is produced by the growers and is of relatively poor quality. Mortality rates are also very high (15 to 20%).

**Figure 20. Chicken meat/live bird value chain**



## 2c4. Chicken meat value chain technical analysis

The commercial chicken meat industry produces 40,500 MT of processed per year. The State Statistical Committee reports about 49,000 MT of chicken meat per year. The consultant is not sure where this difference comes from. It is possible that 4 to 5,000 MT is produced by the small broiler producers, but this is doubtful. The bulk of this tonnage is sold as whole frozen broilers with an average dressed weight of 1.0 to 1.25 kilograms. Industry leaders interviewed feel that 70 to 80% of this volume is sold as whole frozen birds with 20 to 30% sold as cut-up parts. These proportions are changing as the largest chicken meat producers invest in upgrading their processing lines and packaging so they can serve the growing demand for chicken parts.

If we consider 75% of 40,000 MT of production, or about 30,000 MT sold as whole frozen birds per year. The wholesale value of this 30,000 MT, sold at about \$4.46/kg, is valued at \$136 million dollars per year. Likewise, if 25% of the 40,000 MT or 10,000 MT is sold as chicken parts, at about \$6.50/Kgs, then the wholesale value is estimated to be \$65 million dollars per year. Therefore, the total wholesale value commercial chicken meat is estimated to be \$201 million dollars per year.

## 2c5. Chicken meat value SWOT analysis

### Chicken meat SWOT Analysis summary table.

<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Vertically integrated</li> <li>• Growing consumer purchasing power</li> <li>• Access to rail lines for ingredient imports</li> <li>• Growing urban consumer population</li> <li>• Relatively low energy costs</li> <li>• Fulltime veterinarians</li> <li>• Relatively good infrastructure (roads, water, power, rail access)</li> </ul>	<p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• Few parent stock operations</li> <li>• Sourcing feed ingredients outside of Azerbaijan</li> <li>• High cost of capital (18-20%)</li> <li>• Old technology in some enterprises</li> <li>• Technical staff need training</li> <li>• Information systems require strengthening</li> <li>• Weak association.</li> <li>• Weak technical know-how.</li> <li>• Weak MIS.</li> <li>• Lack of adequate laboratory testing facility.</li> </ul>
<p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• Expansion of cut-up market</li> <li>• Added value products</li> <li>• Investment in new technologies to increase productivity (e.g. incubators, added value processing equipment)</li> <li>• Consumer education</li> <li>• Industry promotion to expand demand – fresh and Azeri made</li> <li>• Reduce day-old-chick costs by investing in parent stock</li> <li>• Equity financing available</li> </ul>	<p><b>Threats:</b></p> <ul style="list-style-type: none"> <li>• Avian Influenza scare</li> <li>• International feed ingredient prices</li> <li>• Expanded imports</li> </ul>

## 2c6. Chicken meat value chain development strategy

<i>Increasing <u>Chicken Meat Sales</u> by:</i>	
<b>1) Increase market share by:</b>	
<b>1a. Decreasing price:</b>	<p><b><u>Focus on productivity:</u></b></p> <ul style="list-style-type: none"> <li>• Lower feed costs</li> <li>• Lower day-old-chick costs</li> <li>• Increase hatchability</li> <li>• Lower breeder &amp; broiler mortality</li> <li>• Improve feed efficiency through improved broiler management</li> <li>• Increase carcass yield</li> <li>• Lower distribution costs</li> </ul>
<b>1b. Increasing quality:</b>	<p><b><u>Focus on improved product quality:</u></b></p> <ul style="list-style-type: none"> <li>• Improve food safety</li> <li>• Improve packaging</li> <li>• Restructured distribution</li> <li>•</li> </ul>
<b>2) Increasing market size by:</b>	
<b>2a. Increasing number of customers</b>	<p><b><u>Focus on added-value products:</u></b></p> <ul style="list-style-type: none"> <li>• More cut-up products</li> <li>• Flavored products</li> <li>• Access food service industry</li> <li>•</li> </ul>
<b>2b. Increasing consumption of customers</b>	<p><b><u>Focus on increasing public awareness:</u></b></p> <ul style="list-style-type: none"> <li>• Industry promotion</li> <li>• Company promotion</li> <li>•</li> </ul>

## 2d. Feed ingredients and milling

### 2d1. Overview

The livestock feed milling industry in Azerbaijan is essentially embedded into the integrated commercial poultry companies. It is the understanding of the consultant that there are no independent feed mills of any significant size operating in Azerbaijan today. Small and medium poultry producers are therefore limited to what they can produce on farm or purchase from a small local feed mill enterprise. These mills have very limited capacity and produce poor feed quality without any formulation or laboratory analysis of ingredients used. There is significant wheat milling capacity in Azerbaijan and these flour mills sell byproducts to livestock producers and they may also grind grain for livestock producers.

***Feed must be properly formulated.*** It is important to recognize that the production of “formulated” feed to strict specifications is imperative for maximizing growth and production; while minimizing costs. The simple act of grinding grains and bulk mixing them with some additives is not adequate for a competitive poultry business.

***Feed ingredient procurement and storage.*** The process of purchasing large volumes of feed ingredients, their transport to the poultry production center, and storage volumes and practices are the keys to profitability for any commercial poultry operation.

***Feed costs.*** In general terms the poultry companies interviewed did not want to divulge the actual cost of a MT of feed. Several did indicate a range of costs that provide some insight to the industry cost structure. For example, broiler feed was said to cost between \$400 and \$460 per MT. Layer feed was said to cost between \$350 and \$400 per MT.

## **2d2. Primary ingredients**

***Russian maize.*** Commercial poultry companies in Azerbaijan purchase maize from Russia on a regular basis. Some of these companies forward contract production and one even has land leased for producing its own maize. There is very little maize produced in Azerbaijan today.

***Ukrainian sunflower meal.*** Poultry require a source of protein that is usually found in soybean meal or sunflower meal. Because of the CIS trade agreements in place, the commercial poultry producers can purchase sunflower meal and un-refined sunflower oil at competitive prices from Ukraine.

**US and Brazilian Soybean meal.** Soybean meal is a high protein product that is widely used by the poultry industry world wide. It does not have to be limited in amounts used like sunflower meal due to fiber content. The problem faced by the Azeri poultry industry is the 18% VAT charges on imports.

***Micro ingredients and feed additives from EC or Dubai.*** Poultry Companies reported importing essential amino acids, vitamins, minerals, medications, and other small volumes of ingredients from traders in Dubai or the Baltic States.

## **2e. Poultry sub-sector enabling environment**

### **2e1. Overview**

The poultry sub-sector enabling environment, in terms of education, policy and regulatory, and financing issues; can be characterized as extremely poor. Formal education and technical training is largely absent. Policy is ad hoc, corrupt, and based on politics not quantitative analysis, and access to finance is rudimentary with most companies financing operations and growth out of retained earnings.

## **2e2. Education, training, and certification**

### ***Education.***

The Academy of Agriculture in Ganja is the only institution in Azerbaijan offering higher learning degrees in animal science. The Academy offers a four year Bachelor of Science (BSc) degree and a two year Master of Science (MSc) degree in Zoo Technique (animal science) or veterinary science. Within the Zoo Technique program, students can specialize in poultry, cattle, or sheep breeding courses. To fulfill the obligations of a poultry breeding BSc requires 123 course hours; cattle breeding requires 160 course hours; and sheep breeding requires 148 course hours. The cattle breeding program has the greatest number of students.

Poultry industry leaders have stated that they have had their primary staff educated in animal science in either Russia or Kazakhstan. They have also indicated that updating technical staff qualifications is an important and urgent matter for them.

### ***Training.***

There are no specialized training courses for poultry in Azerbaijan today. Azeri poultry industry send staff members to Russia, Kazakhstan or Turkey to visit industry, equipment suppliers and occasional training sessions associated with trade fairs.

Most technical learning seems to be provided by international suppliers of poultry products and equipment. For example, international breeders, such as Ross and Cobb, provide Azeri companies with management manuals, technical benchmark standards, and occasional information updates.

### ***Certification.***

The only certification training in Azerbaijan today is mostly related to food processing. The Turkish Standards Institute offers relevant certification and training in HACCP, ISO 9001/2008 (quality management), 14001/2004 (environmental management) and 22000 (food security certification).

### **The Turkish Standards Institute (TSE)**

The tasks of TSE outlined on their website, relative to the Azerbaijan poultry sub-sector, are as below:

- To prepare the standards or the projects of them and to declare its opinion upon request of public sector and private sector
- To perform the technical inspections and researches about standards, to follow up the resembling studies done in foreign countries, to establish relations with international and foreign companies of standard and to collaborate with them.
- To collaborate with universities and other scientific and technical associations and institutions, to make publications on standardization, to constitute archives from national and international standards and to submit them to the ones whom they may concern who are concerned with.

- To conduct research on standards and to establish laboratories in order to check the application of voluntary standards, to perform technical studies requested by public or private sector and report about them.
- To train personnel in order to maintain and develop the standard works in the country and to open courses and arrange seminars for this purpose
- To perform studies which will encourage quality production that is consistent with the standards.

### **2e3. Policy and regulatory**

The following policy issues emerged from discussions with poultry industry leaders and have been group into high, medium, low priorities for the industry. These policy issues represent the priorities noted by these commercial industry leaders and not necessarily in the same order of priority as the views of the consultant. It is important to understand the views of the Azeri poultry industry leaders.

#### ***High priority issues for industry leaders today:***

Feed ingredient import tariffs. The key issue for the leaders of all of the poultry companies interviewed was the tariff structure on imports of feed ingredients and equipment. They feel that the 18% VAT tax and 15% customs duties was keeping them from growing their businesses. They did acknowledge that sourcing maize from Russia and sunflower meal from Ukraine, avoids the VAT costs due to the Common wealth of Independent States of the former Soviet Union (CIS) agreements that is currently in place. The Baltic countries are not members of the CIS agreement.

They noted that the CIS countries do not produce soybean and thus soybean meal must be purchased from the US or Brazil, where the 18% VAT is applied.

Import of chicken meat. It is interesting to note that the industry leaders interviewed did not mention the issue of imported low cost chicken thighs from the US. Many of them do incorrectly believe that these products are being dumped in Azerbaijan at subsidized rates. However, there number one priority policy issue is clearly the high tariffs on imported feed ingredients and equipment.

#### ***Medium priority issues for commercial industry leaders today:***

Avian Influenza (AI). The AI outbreak in 2006 sent shock waves through the poultry sub-sector in that consumption of chicken meat products and eggs plummeted. Industry leaders were able to manage a series of public awareness events that helped mitigate the situation. However, a few companies were not able to weather this downturn and were then hit with rising feed ingredient prices on the global market, forcing several companies to close.

Poultry industry must be able to meet the OIE protocols for AI, and other list A diseases in terms of reporting, response, and compliance.

**Consultants note:** The Project should coordinate AI related activities with the USAID supported Stop AI project. The proposed technical training of hatchery and live bird

management workshops would be one type of joint activity that will benefit all poultry producers in Azerbaijan. Likewise, workshops initiated by Stop AI on farm level bio-security procedures and municipal procedures for live bird sales in green markets would also be coordinated with the Project.

### Food safety.

The ability for poultry companies to comply with international SPS and traceability requirements will be challenging as Azerbaijan enters into WTO negotiations. The following presents a short view of key policy related issues.

#### *Sanitary and Phyto-Sanitary (SPS) Measures<sup>3</sup>:*

Many large poultry trading nations, especially the largest exporters, use a variety of legitimate and WTO accepted - Food Safety and Avian Health measures to restrict access to their markets, for example: The EU has banned poultry imports from the US due to differences in chilling and decontamination of poultry and poultry products. Also, the US has adopted a zero tolerance policy which in effect allows imports from a handful of countries. Brazil, which imports very little because of its low cost position, adopts a reciprocal position to the US on SPS.

*Technical Barriers to Trade (TBT).* Many countries have developed various measures to protect their domestic poultry industry. For example:

- Halal requirements can and do limit trade in some countries.
- Environmental Measures - The EU is actively promoting these issues in the next WTO round and many states consider these a new form of TBT measures.
- Animal Welfare Measures - The EU is actively promoting these issues for poultry meat and table eggs in the next WTO round and many consider these new TBT measures

*Tariff & Tariff-Rate-Quota Systems.* Many countries employ a variety of tariff measures to defend their local industries. While Tariffs and Tariff-Rate-Quota systems are WTO compatible they must be seen as parts of a basket of policies including domestic supports, export competition and sophisticated SPS measures to defend industries, for which developed countries have negotiated the right and have the means to offer their poultry industries vastly more "special and differential treatment" than do developing countries with under-developed industries.

*Tariff Rate Quotas* - Other countries, especially several key poultry producers like the EU, Canada employ Tariff-Rate-Quotas systems which use high over-quota-tariffs and volumetric quotas to limit imports.

*Other Border Measures* - Other measures which are in principle not "WTO compliant" are also used to restrict access in one way or another.

*Special Agricultural Safeguards* - Many countries, especially the leading exporters have access to safeguards which provide for supplementary import tariffs when imports increase and/or prices fall.

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<sup>3</sup> Caribbean Poultry Association, 2008

***Low priority issues for industry leaders today:***

Environmental issues. The consultant was told that both the commercial table egg and chicken meat companies dump manure in land fill plots. Some of the larger chicken meat companies do have rendering equipment to render slaughter house waste into feed products. It is not known to what degree this is happening.

**2e4. Financial services*****Where in the value chain should investments be focused?***

Given the level of vertical integration, individual table egg and chicken meat Companies will require relatively large investments, perhaps in the order of magnitude of millions of dollars. A typical upgrade to modern and efficient processing equipment, incubators, feed mills, pellet machines, and layer cages, could each easily require a million dollar investment or more. It would seem from the discussion below that equity finance as a real and demonstrated option is the most likely the way forward for most of these Companies. It should also be noted that most Company leaders believe that the current interest rates at commercial banks, of 18 to 20%, are not possible to service. They have all asked for access to cheaper loans and better terms than those currently offered by commercial banks.

***Agriculture oriented financial institutions.***

**CredAgro.** CredAgro is an independent organization that provides financial services to rural entrepreneurs in Azerbaijan. The goal of CredAgro is to improve the economic opportunities and living standards of their clients and therefore the entire community where they live.

CredAgro was founded by ACDI/VOCA in 2000 and licensed by the National Bank of Azerbaijan. CredAgro established headquarter in Baku and 8 branches in different regions. At the present organization works in 20 regions of Azerbaijan. CredAgro operates through the network of Representative Offices and sub-offices that are located in Absheron peninsula covering neighboring districts, in the south – Jalilabad, Masalli and Lankaran, in the west – Ismayilli, Zagatala, and Tovuz, and in the north – Khachmaz and Guba.

**CredAgro Financial products include:****Agricultural loans:**

- Agricultural producing (live stocking, cropping, gardening and etc)
- Loan amount and interest rate Maximum \$ 40,000
- Interest rate annually 22-25 %
- Upfront fee 0.5 %
- Term - Maximum 24 months
- Collateral: In value of 150-200 percent of loan amount
- Collateral may be: Apartment and houses, Gardens, lands, Stores, Vehicles and agricultural machineries



- Borrower contribution: 20 per cent of business project

#### Business/trade loan

- Purpose of the loan: Trade, trade of agricultural products, processing
- Loan amount: Maximum \$ 40,000
- Interest rate annually 25-26 %
- Upfront fee 0.5 %
- Term: Maximum 24 months
- Collateral: In value of 150-200 percent of loan amount
- Collateral may be: Apartment and houses, Gardens, lands, Stores, Vehicles and agricultural machineries
- Borrower contribution: 20 per cent of business project

#### Leasing

- Purpose of the leasing: CredAgro offers leasing to provide agricultural producers with vehicles and equipment. Such as Agricultural vehicles and equipment (tractors and etc), Processing equipments, Transportations vehicles,
- Leasing amount: Maximum \$ 50,000
- Interest rate annually 21-28 % (depending on field of business, credit history and amount)
- Upfront fee 1 %
- Term: Maximum 36 month
- Collateral: 20-40 percent of leasing object is paid by borrower or, other collateral in amount of total cost o leasing object

#### *Investment funds.*

#### **National Fund for Entrepreneurs Support (NFES).**

This Fund was created by Presidential Decree No. 504 on December 28, 2006. The objective of the Fund is to subsidize projects of entrepreneurs giving priority to regional economic development of the country. The Fund will not provide resources to Entrepreneurs directly, rather through to authorized banks and non-bank credit organizations (Authorized Credit Organizations) on behalf of them and at their own risk.

The clear mandate of the Fund is to provide subsidize financing to entrepreneurs. The process includes having the entrepreneurs applying for funds to the Authorized Credit Organization for analysis. A determination of acceptability by the Fund will be made within 15 days.

Credit limits are:

- 1,000 AZN micro-credit, with 2 year term
- 1,000 to 30,000 AZN small credit, with 2 year term
- 30,000 to 100,000 AZN medium credit, with 3 year term
- 100,000 to 1,000,000 AZN large credit, with 5 year term
  - Revised in 2007 to up to 3,000,000 AZN and 7 year term
- 1,000,000 to 30,000,000 AZN huge credit, with 7 year term

The maximum level of annual interest rates to be applied shall not exceed 7% (and 5% for financing projects in development of mass media).

The Fund received 1,790 proposals during 2007 and accepted 1,433 for funding. Of these funded proposals 987 or 68.9% were for agriculture and food processing enterprises.

**Consultants note:** It is recognized that government subsidized financing works against the development of private sector commercial financing in Azerbaijan. This is not an ideal situation and the Fund should be encouraged to develop funding rates that are competitive with available commercial rates.

**Azerbaijan Investment Company (AIC).** The "Azerbaijan Investment Company" JSC is the state-owned joint-stock company, established by Presidential Decree on March 30, 2006. The Charter Capital of the Company is 90,000,000 AZN

*The main objective of investment activity of AIC* is to implement fixed-term investment by procuring shares of joint stock companies and other commercial organizations whose main centre of activities is in non-oil sector of national economy. Investment decision of the Company is based on the analysis of business plans, description of effectiveness of organization's commercial activity, experience and achievements of shareholders of potential partners. AIC is able to invest both in the capital of already acting or newly-established joint-ventures.

Key priorities of the Company are participation in joint-venture projects (especially export-oriented and import substitute) of Azeri enterprises and promotion of local and foreign investments to the non-oil field of the economy of Azerbaijan.

*The purpose of the AIC includes:* 1) the realization of termed investment in charter capital of existing or newly-established commercial enterprises in the non-oil field of the economy of Azerbaijan, 2) Increase of a market value of investment object, 3) Development of domestic capital market, 3) Attraction of local and foreign investments to the non-oil sectors of the economy of Azerbaijan, and 4) Improvement of the business environment.

*Investment Criteria used by AIC to evaluate projects include:* 1) Commercial efficiency of enterprises' activities, 2) Competitiveness of products and their mainly export-oriented and import-replacing character, 3) Compliance of financial accounting reports with the International Accounting Standards or commitment to carry them through, 4) Verification of financial reports by an auditor, 5) Application of principles of corporate governance, high-level protection of investors' and other stake holders rights

*Investment Procedures include:* 1) Assignment of the Investment Proposal to the Company, 2) Valuation of investment and due diligence process. Please note that this process can be executed together with the co-investor, 3) Approval of investment decision by the Supervisory Board, 4) Signature of the Shareholders' Agreement, 5) Participation and monitoring of the AIC, 6) Participation of the AIC representatives in the management and auditing committees, 7) Financial coverage of the investments

*AIC acquired 25% share in charter capital of "Davachi Broyley" OJSC.* This investment allocated by the Azerbaijan Investment Company financed the reconstruction of fourteen farms buildings and modern equipments, replacing the production technologies in eight farms, increasing the capacity of existing workshops and adjusting them to the new production capacity, organizing the production of chicken meat products, and finally co-investing to the charter capital of a new established joint venture that will produce hatching eggs. The Azerbaijan Investment Company and Davachi Broyley signed the Memorandum of Understanding on joint collaboration on July 12, 2007. The AIC Supervisory Board made a decision on investing 12,000,000 (twelve million) Azerbaijani manat to Davachi Broyley through the acquisition of 25% share in charter capital of Davachi Broyley by the AIC.

*AIC International Partners.*

- Since 2007, AIC has been a member of the European Private Equity and Venture Capital Association (EVCA).
- On March 9, 2007 IAC signed Memorandum of Understanding between the International Finance Corporation (IFC) and Azerbaijan Investment Company. IFC is an international organization, whose mission is to promote sustainable private sector investment in developing countries, helping to reduce poverty and improve people's lives.
- AIC is a member of Emerging Markets Private Equity Association (EMPEA) since early 2007. The EMPEA is a broad-based membership organization founded in 2004 to focus on the emerging private equity markets. Its mission is to promote greater understanding of and a more favorable climate for private equity investing in emerging markets.

**Caspian International Investment Company (CIIC)** was founded in March, 2008 jointly by the Azerbaijan Investment Company (AIC) and the Islamic Corporation for the Development of the Private Sector. At present time the charter capital of CIIC constitutes 2,954,200 AZN. Of the total charter capital, 75 % pertains to the Islamic Corporation for the Development of the Private Sector and 25% to the Azerbaijan Investment Company. CIIC intends to increase its charter capital to 70 million USD in nearest future. The Caspian International Investment Company is mandated to invest in all businesses operating in the non-oil sectors of Azerbaijani economy, except for the ones not approved under the Shariah code, including but not limited to the companies manufacturing liquors and pork products. It will also not finance any banks or insurance companies that offer conventional financing or insurance services.

## Section 3. Poultry Sub-sector Action Plan

Section 3 presents a PSCEP action plan with five components. They are: a) Enhancing the Azerbaijan Poultry Society, b) Building customized poultry business models, c) Developing strategic plans, d) Increasing productivity, and e) Accessing finance. In turn, each component provides detailed objectives, actions, and benchmarks. Benchmarks include technical coefficients that measure productivity, sales, investment, and jobs.

**Assumptions.** The proposed action plan is based on two important assumptions: 1) there are no private sector business development consultants or firms in Azerbaijan with the technical knowledge (breeder, hatchery, feed milling, production, and processing) required to support industry development, and 2) the executives within the major poultry companies will support enhancing the capacity of the Azerbaijan Poultry Society in order to access technical assistance offered by the project, and thus the Society becomes a source of technical expertise over time.

**Rationale.** Given these assumptions, and based on the sub-sector assessment findings presented above, the author recognizes the need for each poultry company to develop three fundamental functions for overall business success. They are to develop industry capacity: 1) to utilize more efficiently technical information directly related to increasing productivity, 2) to link technical information to financial information in order to access finance, and 3) to support and develop a national institution that can lobby on their behalf and provide business development services.

**Terminology.** This action plan utilizes the following terms:

- **Project** refers to the USAID/funded PSCEP project.
- **Company** refers to individual poultry companies (chicken meat or table eggs).
- **Enterprise** refers to components of the Company and includes feed mill, breeder, hatchery, rearing, grow out, layer, processing, administration, mechanization, and veterinary functions.
- **Society** refers to the Azerbaijan Poultry Society.
- **Business Model** refers to the poultry company simulation models.

### 3a. Enhancing the Azerbaijan Poultry Society

This action plan proposes facilitating the development of the existing Azerbaijan Poultry Society as the “primary vehicle” for technical assistance delivery.

#### 3a1. Objectives

The objective of this component is to facilitate the development of the Azerbaijan Poultry Society by securing the support of most, if not all, of the major poultry sub-sector companies. By the end of the PSCEP project this Society should be able to provide members with the following types of activities and services:

- Facilitate access to regulatory information
- Facilitate domestic and international industry networking
- Promote Industry to the public (especially on Avian Flu issues)
- Facilitate access to consumer preferences
- Facilitate access to technical production and sanitary information
- Facilitate access to industry linkages and comparative international benchmarks
- Facilitate access to domestic market supply information,
- Facilitate access to management, consumer, supplier, and marketing information

### 3a2. Actions

#### *Action A1. Strengthening Society institutional capacity.*

**Responsible person:** Project value chain manager

**Time frame:** January/February 2009

**Task A1a.** Finalize MOU with poultry Companies, Society, and Project. Under the auspices of the Azerbaijan Poultry Society, the Project will invite all major poultry companies to take part in an introductory seminar where the proposed Action Plan will be discussed. This meeting would detail exactly what the Project will offer in terms of resources and propose an implementation schedule. The Project will request from these Companies their commitment for participating in the proposed program and their support for the Society. These agreements will be summarized in a memorandum of understanding (MOU) and signed by all parties during the workshop. Draft proposals can be provided to the Companies before the workshop, so that the general approach is agreed upon in advance. The outcome of this seminar will be consensus on proposed activities and commitment from both the project and the companies on implementation. The MOU will detail exactly what each entity will contribute to the program and establish a confidentiality agreement in order to ensure the protection of sensitive Company information.

**Task A1b.** Facilitate APS training site development and propose small grant for workshop materials. The Project will provide a small grant to the Society for the procurement of computer, printer, copier, and media (projector) equipment. The objective is to ensure that the Society has the necessary equipment to facilitate a workshop of 10 or 15 participants, and provide members with key services.

**Task A1c.** Facilitate Society organization development. This task includes assisting the Society in forming two technical committees, one for the table egg industry, and one for the chicken meat industry. The Project will also provide assistance on governance issues as well.

#### *Action A2. Establish Society market and information services.*

**Responsible person:** Project value chain manager and local consultants

**Time frame:** February/March 2009

**Task A2a.** Establish poultry market information collection and reporting capacity. Poultry Society staff will be trained in procedures for collecting and report industry related information to members on a regular basis. The types of information will be discussed with Society members as well as the best reporting format.

**Task A2b.** Establish poultry industry supply and equipment contact database. Poultry Society staff will be trained to maintain a database of industry input suppliers and equipment manufactures for members.

**Task A2c.** Develop member communication information products. Poultry Society staff will be trained on the printing and distribution of poultry promotion and communication materials. These materials can be used by the Society and for Companies to promote the poultry industry in Azerbaijan.

***Action A3. Establish industry promotion activities.***

**Responsible person:** Project value chain manager and Short-term TA  
**Time frame:** October/November 2009

**Task A3a.** Develop capacity to research, produce, implement, and evaluate industry promotion campaigns. This task will be implemented by a senior communications specialist with experience in promoting Industries. For example, an “edible egg” campaign and “healthy chicken meat” campaign will be researched, produced, implemented and evaluated at the end of the first project year. Stimulating demand for poultry products will be the objective of these campaigns.

**3a3. Benchmarks**

***Action A1. benchmarks.***

- MOU signed and commitment by parties formalized
- Training site established

***Action A2. benchmarks.***

- Society is collecting information and disseminating to members on monthly basis

***Action A3. benchmarks.***

- Capacity of Society to produce industry promotion activities established
- At least 2 national poultry media campaigns are designed and launched in 2009.
  - Includes radio spots and literature products

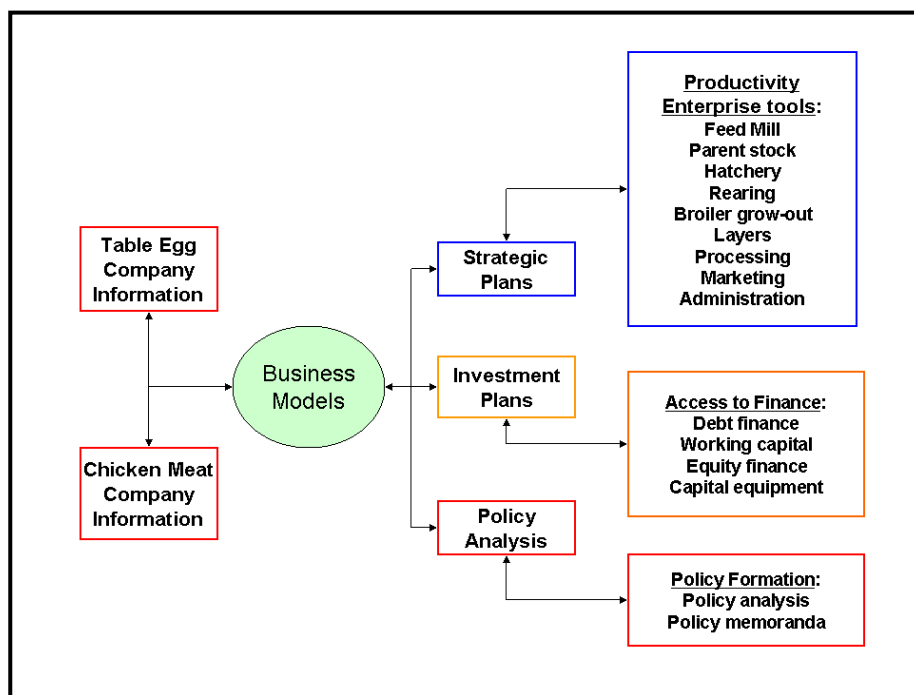
**3b. Building customized poultry business simulation models**

**3b1. Objectives**

The objective of this component is to teach company representatives to build their own technology driven business models to be used for strategic planning, enterprise management, financial analysis, and accessing finance. Each model will be customized for company use and information provided by the companies will remain confidential.

Figure 19. Conceptual view of the central role of business models in aggregating Company information to be utilized in the development of corporate strategic plans, investment plans, and policy analysis.

**Figure 21. Conceptual view of business modeling process**



**Rationale.** Azeri poultry companies generate a great deal of technical information, such as hatchability, breeder performance, feed conversion, mortality, etc. Unfortunately, this information is not linked to financial information. Azeri poultry companies also keep accounting records and are aware of cost control methods. However, their ability to utilize technical information for strategic planning and accessing finance is severely limited.

Business modeling enables companies to bring information together in order to: 1) monitor enterprises performance, 2) identify opportunities to increase productivity, 3) simulate pro-forma financial statements, 4) evaluate the effects of local currency exchange rate risk, 5) evaluate the effects of changes in sales prices and input costs, and 6) facilitate the updating of business plans on a real time basis. All of these attributes will enable companies to increase productivity and access trade and investment finance. This is true because of the level of detailed information provided to financial institutions, the demonstrable and verifiable links between technical production and finance, the ability to update information daily, the ability to evaluate risk, and the management plans put in place – all together these attributes help bridge the gap between companies and finance institutions.

### 3b2. Actions

#### *Action B1. Develop and test individual poultry business models.*

**Responsible person:** Project value chain manager and Short-term TA  
**Time frame:** February 2009

**Task B2a.** Conduct workshop on business model creation. The project will conduct a comprehensive workshop where representatives from each company will be trained on the building of their business model.

#### *Action B2. Develop “enterprise” level action plan training modules.*

**Responsible person:** Project value chain manager and Short-term TA  
**Time frame:** February 2009

**Task B2a.** Facilitate development of enterprise information tools. Spreadsheet data collection and reporting tools will be developed and incorporated into normal enterprise activities. Company managers will be trained as trainers for them to teach the technical managers of each enterprise on the use of these tools. This task is an extension of existing information management procedures that will facilitate analysis and updating of the Business Models.

### 3b3. Benchmarks

#### *Action B1. benchmarks.*

- Eight to ten business models created

#### *Action B2. benchmarks.*

- Complete set of table egg company enterprise management tools developed
- Complete set of chicken meat company enterprise management tools developed

## 3c. Developing strategic plans

### 3c1. Objectives

The objective of this component is to teach company representatives to develop company strategic plans, enterprise monitoring tools, and financial reporting systems. Information generated from these activities will be utilized for measuring productivity, identifying opportunities for technical improvements, and evaluating different financing scenarios.

**Rationale.** The company models developed under component 2 requires consistent updating with current information. Establishing a common format for information collection at the company enterprise level will enable the systematic flow of information and facilitate analysis. For example, technical information from the feed mill, breeder



farm, hatchery, pullet and broiler rearing, and processing enterprises will be aggregated into the “whole company” model. This information can then be used to establish enterprise performance plans that can be systematically tracked and enable the company to establish incentive initiatives to reward increased productivity for each enterprise.

### 3c2. Actions

#### *Action C1. Utilize individual business models to create strategic plans*

**Responsible person:** Project value chain manager and Short-term TA

**Time frame:** February 2009

**Task C1a.** Facilitate development of Company strategic plans. Integrating individual enterprise information into the Business Model will enable Company managers to develop yearly strategic plans that define in quantitative terms, increases in enterprise productivity, cost control plans, investment in technology targets, and market expansion initiatives.

#### *Action C2. Conduct model technical simulation exercises and business forecasting*

**Responsible person:** Project value chain manager and Short-term TA

**Time frame:** February 2009

**Task C2a.** Conduct Company business model simulation exercises. Company managers will be trained in utilization of the Business Model to simulate changes in productivity of each enterprise. This exercise will enable managers to forecast sales for a fixed period of time.

### 3c3. Benchmarks

#### *Action C1. benchmarks.*

- Eight to ten Company strategic plans developed and in use by company

#### *Action C2. benchmarks.*

- Eight to ten Companies trained in simulating business activities, assessing risk, and conducting business forecasting.

## 3d. Increasing productivity

### 3d1. Objectives

The objective of this component is to build capacity of technical staff of each enterprise within each company in order to increase measurable performance benchmarks over time. For example, the Project will conduct technical training for feed mill, breeder, hatchery, grow out, layer, processing, and other enterprise managers in order for them to increase enterprise level productivity. Productivity benchmarks will be established and monitored over time, and then utilized in the company simulation model to evaluate the impact on profitability and other financial parameters.

### 3d2. Actions

#### *Action D1. Identify, prioritize, and schedule training modules.*

**Responsible person:** Project value chain manager and Company leaders  
**Time frame:** March 2009

**Task D1a.** Build consensus with industry partners on workshop technical priorities and scheduling.

#### *Action D2. Produce training modules:*

**Responsible person:** Project value chain manager and Short-term TA  
**Time frame:** Three workshops in 2009  
 Each workshop about 2 weeks in duration and open to all poultry companies in Azerbaijan

**Task D2a.** Breeder flock and hatchery management. Short-term experts will conduct back to back workshops on breeder flock and hatchery management. Training will focus on increasing productivity of these enterprises and incorporating information into the business models.

**Task D2b.** Feed procurement, quality control, and formulation. Short-term experts will conduct back to back workshops on feed procurement, quality control, and formulation. Training will focus on increasing productivity of these enterprises and incorporating information into the business models.

**Task D2c.** Meat and egg processing and product marketing. Short-term experts will conduct back to back workshops on meat and egg processing facility management and marketing. Training will focus on increasing productivity of these enterprises and incorporating information into the business models.

**Task D2d.** Pullet rearing, broiler grow-out, and layer management. Short-term experts will conduct back to back workshops on pullet rearing, broiler grow-out, and layer management. Training will focus on increasing productivity of these enterprises and incorporating information into the business models.

### 3d3. Benchmarks

#### *Action D1. Benchmarks.*

- Detailed schedule of technical workshops agreed upon and scheduled.

#### *Action D2. Benchmarks.*

- Four detailed technical workshops designed and implemented (3 in 2009)

## 3e. Accessing Finance

### 3e1. Objectives

The objective of this component is to work with Company managers on the following tasks: 1) determine the impact of an investment in a technology on Company profitability, 2) facilitate the identification of vendors of such technology, 3) introduce Company managers to financial institutions, and 4) assist Company managers in the negotiation of loan packages.

**Rationale.** Project managers can and should play the role of honest intermediary between poultry companies seeking finance and financial institutions seeking bankable investment opportunities. The developed Business Model will facilitate such “bridging” and accelerate the financing arrangements.

### 3e2. Actions

**Action E1. Conduct training on financial modeling and validation.**

**Responsible person:** Project value chain manager and Short-term TA  
**Time frame:** March/April 2009

**Task E1a. Conduct financial modeling training.** Company managers will be trained in utilization of the Business Model to simulate the impact of potential investments in technology or other capital investments on Company profitability. The Project will facilitate the conversion of information generated by the business model into a detailed “investment proposal” to be submitted to financial institutions.

**Action E2. Facilitate financial institution linkages**

**Responsible person:** Project value chain manager and local consultant  
**Time frame:** On-going life of project

**Task E2a. Facilitate financial institutional linkages.** Project value chain managers will be available to link Company leaders with financial institutions. The objective of this task is for the Project value chain managers to promote, respond to questions, and substantiate the investment proposals developed by the Companies.

### 3e3. Benchmarks

**Action E1. benchmarks.**

- Eight to ten Company managers are able to conduct financial analysis of their companies and convert this analysis into “investment proposals.”

**Action E2. benchmarks.**

- Project value chain managers facilitate Company to financial institution linkages on an as needed basis for eight to ten companies.

## ANNEX A. Action Plan Timeline

Chemonics		PSCEP: Year 1 Work plan - Poultry Industry - Chicken meat and table egg value chains											
A. Azerbaijan Poultry Society Development		Year 1											
Actions	Tasks	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
<b>A1 Strengthening Society institutional capacity</b>													
	Task A1a. Finalize MOU with Companies, Society, & Project		X										
	Task A1b. Facilitate training site development & grant proposal		>>	X									
	Task A1c. Facilitate Society organization development		>>	>>	2 committees formed								
<b>A2 Establish Society market &amp; information services</b>													
	Task A2a. Establish poultry market information & reporting capacity					X							
	Task A2b. Establish poultry industry supply & equipment database							X					
	Task A2c. Develop member communication products										X		
<b>A3 Establish industry promotion activities</b>													
	Task A3a. Develop capacity to implement & evaluate promotion campaigns								X				
<b>B. Poultry Business Modeling</b>		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
<b>B1 Develop &amp; test individual poultry business models</b>													
	Task B1a. Conduct workshops on business model creation		X	>>	>>	Models - 8 to 10 companies							
<b>B2 Develop "enterprise" level action plan training modules</b>													
	Task B2a. Facilitate development of enterprise information tools		X	>>	>>	Enterprise tools developed for Table egg & broiler companies							
<b>C. Poultry Company Strategic Planning</b>		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
<b>C1 Utilize individual company models to create strategic plans</b>													
	Task C1a. Facilitate development of Company strategic plans			X	>>	>>	Strategic plans built for 8 to 10 companies						
<b>C2 Conduct model simulation analysis &amp; business forecasting</b>													
	Task C2a. Conduct business model simulation exercises				X		Simulation training conducted for 8 to 10 companies						
<b>D. Productivity Enhancement</b>		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
<b>D1 Identify, prioritize, &amp; schedule productivity training modules</b>													
	Task D1a. Build consensus with Companies on technical training				X	>>	Schedule of workshops finalized						
<b>D2 Produce Training Modules</b>													
	Task D2a. Increasing breeder hatching egg production & hatchability						X	X					
	Task D2b. Increasing feed procurement, quality control, & formulation								X	X			
	Task D2c. Increasing meat & egg processing & marketing										X	X	
	Task D2d. Increasing pullet rearing, broiler grow-out, and layer management												
<b>E. Accessing Finance</b>		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
<b>E1 Conduct training on financial modeling &amp; validation</b>													
	Task E1a. Conduct financial modeling training				X	4 companies		X	2 companies		X	2 companies	
<b>E2 Facilitate financial institution linkages</b>													
	Task E2a. Facilitate financial institutional linkages					X	2 companies		X	1 company		X	1 company

Chemonics		<b>PSCEP: Year 2 Work plan - Poultry Industry - Chicken meat and table egg value chains</b>											
<b>A. Azerbaijan Poultry Society Development</b>		Year 2											
<b>Actions</b>		Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
<b>Tasks</b>													
<b>A1 Society Organization &amp; institutional development</b>	Tasks A1a. Continue to strengthen Society		X >>		X >>			X >>			X >>		
<b>B. Poultry Business Modeling</b>		Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
<b>B1 Model development &amp; testing</b>	Train companies to develop technology driven financial models	X >>>	Models - 2 to 4 companies										
<b>C. Poultry Company Strategic Planning</b>		Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
<b>C1 Strategic planning &amp; enterprise management tools</b>	Train companies to develop strategic plans & information tools		X >>>	Plans - 2 to 4 companies									
<b>D. Productivity Enhancement Workshops</b>		Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
<b>D2 Feed procurement, quality control, &amp; formulation</b>	Task D2a. Increasing breeder hatching egg production & hatchability			X X	Breeder & Hatchery workshop								
	Task D2b. Increasing feed procurement, quality control, & formulation					X X	Feed milling & marketing						
	Task D2c. Increasing meat & egg processing & marketing												
	Task D2d. Increasing pullet rearing, broiler grow-out, and layer management		X	Live bird management									
<b>E. Accessing Finance</b>		Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
<b>E1 Conduct training on financial modeling &amp; validation</b>	Task E1a. Conduct financial modeling training	X	3 companies			X	3 companies			X	3 companies		
<b>E2 Facilitate financial institution linkages</b>	Task E2a. Facilitate financial institutional linkages		X	2 companies		X	2 companies		X	2 companies		X	2 companies
Chemonics		<b>PSCEP: Year 3 Work plan - Poultry Industry - Chicken meat and table egg value chains</b>											
<b>A. Azerbaijan Poultry Society Development</b>		Year 3											
<b>Actions</b>		Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11
<b>Tasks</b>													
<b>A1 Society Organization &amp; institutional development</b>	Tasks A1a. Continue to strengthen Society		X >>		X >>			X >>			X >>		
<b>D. Productivity Enhancement Workshops</b>		Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11
<b>D2 Feed procurement, quality control, &amp; formulation</b>	Task D2a. Increasing breeder hatching egg production & hatchability			X X	Breeder & Hatchery workshop								
	Task D2b. Increasing feed procurement, quality control, & formulation					X X	Feed milling & marketing						
	Task D2c. Increasing meat & egg processing & marketing							X X	Processing & Marketing				
	Task D2d. Increasing pullet rearing, broiler grow-out, and layer management		X	Live bird management									
<b>E. Accessing Finance</b>		Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11
<b>E1 Conduct training on financial modeling &amp; validation</b>	Task E1a. Conduct financial modeling training	X	3 companies			X	3 companies			X	3 companies		
<b>E2 Facilitate financial institution linkages</b>	Task E2a. Facilitate financial institutional linkages		X	2 companies		X	2 companies		X	2 companies		X	2 companies

### ANNEX B. Historical exchange rate (AZN/\$)

